International Journal of Inclusive Education

ISSN: 1360-3116 (Print) 1464-5173 (Online) Journal homepage: www.tandfonline.com/journals/tied20

Inclusion does not solely apply to students with disabilities: pre-service teachers' attitudes towards inclusive schooling of all students

Susanne Schwab, Katharina Resch & Ghaleb Alnahdi

To cite this article: Susanne Schwab, Katharina Resch & Ghaleb Alnahdi (2024) Inclusion does not solely apply to students with disabilities: pre-service teachers' attitudes towards inclusive schooling of all students, International Journal of Inclusive Education, 28:2, 214-230, DOI: 10.1080/13603116.2021.1938712

To link to this article: https://doi.org/10.1080/13603116.2021.1938712

Published online: 30 Jun 2021.

INTERNATIONAL JOURNAL OF INCLUSIVE EDUCATION
2024, VOL. 28, NO. 2, 214–230
https://doi.org/10.1080/13603116.2021.1938712

Routledge
Taylor & Francis Group

Inclusion does not solely apply to students with disabilities: pre-service teachers' attitudes towards inclusive schooling of all students

Susanne Schwab [a,b], Katharina Resch [a] and Ghaleb Alnahdi[c]

[a]Centre for Teacher Education, Universitat Wien, Wien, Austria; [b]Research Focus Area Optentia, North-West University, Vanderbijlpark, South Africa; [c]Special Education Department, College of Education, Prince Sattam bin Abdulaziz University, Al Kharj, Saudi Arabia

ABSTRACT

Several studies have investigated (pre-service) teachers' attitudes toward inclusion. However, most have focused on teachers' attitudes toward the inclusion of students with disabilities. The understanding of inclusive education has expanded to the provision of educational opportunities to all students, not only those with a disability. This study investigates the attitudes of 899 Austrian pre-service teachers towards inclusion using a revised version of the Attitudes to Inclusion Scale (AIS). The psychometric quality of the revised scale was examined. The results indicated a high reliability, and the two-dimensional factor structure was confirmed by a confirmatory factor analysis. Some evidence for convergent validity was found. More positive attitudes towards inclusive schooling were found among pre-service teachers focusing on inclusive education within their teacher training programme, female teachers, and pre-service teachers with a migration background.

ARTICLE HISTORY
Received 7 October 2020
Accepted 28 May 2021

KEYWORDS
Inclusion; inclusive education; teacher education; broad understanding of inclusion; pre-service teachers; teacher attitudes

Introduction

Inclusive education has become a highly important topic worldwide in the wake of the United Nations Convention on the Rights of Persons with Disabilities (United Nations 2006) and the Sustainable Development Goals (SDGs), especially SDG 4 that aims to 'ensure inclusive and equitable quality education and promote lifelong learning opportunities for all'.[1] SDG 4 entails the commitment of teachers to students' diversity, quality learning and teaching, as well as teacher professionalisation in this area. Inclusive education follows the principles of social justice and the value of education as a basic human right for all learners (Pit-ten Cate et al. 2019). Austria has moved toward a new concept of teacher education in which all pre-service teachers acquire inclusive competences. Teacher education, for teachers in primary and secondary schools, is provided at the university level in Austria in the form of Bachelor's degrees of 240 credits and

CONTACT Susanne Schwab susanne.schwab@univie.ac.at University of Vienna, Porzellangasse 4, 1090 Vienna, Austria

Master's degrees of 120 credits, both involving extended placements in schools. A specific factor contributing to increased student diversity in Austria is the growing number of newly arrived refugee students who have entered the educational system after 2015 and do not speak the primary language of instruction (German).

Towards a broader understanding of inclusion

Being educated in segregated classes is still a reality for many students with special educational needs and inclusion is more a claim, than a reality for them. Concepts of inclusion following the United Nations Convention on the Rights of Persons with Disabilities (United Nations 2006) place students with special educational needs in regular classes and address the social and academic needs of all students, thus viewing inclusion as a responsibility of the central social actor, the teacher (Haug 2017). However, even broader conceptual frameworks go beyond special educational needs and consider inclusion as focusing on structural changes to meet the social and academic needs of *all* students (Jordan 2018), which is the understanding of inclusion applied in the current study. Inclusion targets *all* students in danger of segregation, regardless of their gender, culture, language, special needs, or social background (Haug 2017). A large number of empirical studies in the field of inclusive education focus on the benefits of inclusive education for students with special educational needs and do not apply a broader concept of inclusion. This is the main reason for conducting the current study, which examined the attitudes of $n = 899$ pre-service teachers in Austria towards a broader concept of inclusion using a modified version of the Attitudes to Inclusion Scale (AIS).

(Pre-service) teachers' attitudes towards inclusion

Teachers hold the specific norms and values of their social world, particularly in relation to teaching and learning and previous studies have linked teachers' attitudes with actual teaching behaviour (e.g. Hellmich, Löper, and Görel 2019; Schwab, Sharma, and Hoffmann 2019). These values or beliefs affect their attitudes (Büssing et al. 2019; Pit-ten Cate and Glock 2019). Teachers' attitudes towards inclusion impact their behaviour and educational practices, and thus, in the long run, impact the development of structurally inclusive schools (Gasterstädt and Urban 2006).

Pit-ten Cate et al. (2019) identified three distinct foci for research about teacher attitudes towards inclusive education: (1) attitudes towards specific student groups, (2) inclusion of students with special educational needs in mainstream classes, and (3) attitudes towards the concept of inclusive education in general. According to Loremann et al. (2007), teachers may experience negative sentiments, such as fear and discomfort, when confronted with disability in particular. Moreover, previous research indicates that the specific form of disability has a strong influence on teachers' attitudes towards inclusive schooling (Avramidis and Norwich 2002; de Boer, Pijl, and Minnaert 2011; Schwab 2018). Teachers hold more negative attitudes towards students on the autism spectrum (Lindblom et al. 2020) or those with emotional, social, or behavioural problems (de Boer, Pijl, and Minnaert 2011) as compared to learning disabilities, for example. Some studies are limited in their core concept of what inclusion entails, and how it is operationalised in the respective scales (de Boer, Pijl, and Minnaert 2011; Haug 2017). There is a significant

gap between general value principles and the actual practice of inclusion, as well as tensions between autonomy and control (participation versus protection/choice versus equity) (Norwich and Koutsouris 2017). Gasterstädt and Urban (2006) argue that different studies on inclusive education measure different general concepts of inclusion, different concepts of attitudes towards inclusion, and have different theoretical concepts at their core. This makes research about the attitudes of teachers towards inclusive education difficult and less comparable.

Generally, current cohorts of pre-service teachers display more positive beliefs about inclusion than in past decades. However, when it comes to practising inclusion in their own classrooms, beliefs and attitudes are described as less positive and more neutral (Hecht, Niedermair, and Feyerer 2016). The motivation to teach heterogeneous groups reduces when difficulties are expected, such as when teaching children with disruptive classroom behaviours or special needs (Schwab and Seifert 2014).

Predictors of (pre-service) teachers' attitudes towards inclusive schooling

Many studies refer to predictors for teachers' positive attitudes towards inclusive schooling (for an overview, see Avramidis and Norwich 2002; de Boer, Pijl, and Minnaert 2011; Schwab 2018). In terms of gender, previous research has often showed that female teachers (Avramidis and Norwich 2002; de Boer, Pijl, and Minnaert 2011) and pre-service teachers (Avramidis, Bayliss, and Burden 2000) tend to hold more positive attitudes towards inclusive schooling, as compared to their male counterparts. Another factor is the ethnic background of pre-service teachers. Findings from Glock and Kleen (2019) indicate that pre-service teachers belonging to ethnic minority groups have a more positive attitude towards students from ethnic minorities, as compared to those belonging to majority groups.

According to an Austrian study, pre-service teachers for primary schools have more positive attitudes towards inclusive schooling than those for secondary schools (Feyerer et al. 2014). Hecht, Niedermair, and Feyerer (2016) report that pre-service teachers' attitudes towards inclusion transform during their studies. Pre-service teachers in higher semesters report higher levels of positive attitudes than pre-service teachers in the beginning of their studies but also higher levels of concern regarding their ability to meet expectations. In addition, Mintz et al. (2020) showed that teachers' attitudes change in the transition phase from the pre-service phase into the novice teacher year.

Lastly, prior experiences with diverse students and communities shape teacher attitudes (Feyerer et al. 2014; Lindblom et al. 2020). However, most Austrian teachers are white, middle class, and female (Good and Brophy 2000) and have little experience with diversity and disability. This contrasts sharply with the rising numbers of diverse students in schools. Thus, teacher attitudes differ in their acceptance of ability and disability, migration, and gender diversity, and in their roles and responsibilities for meeting the needs of their students. Those pre-service teachers who study inclusive education as a focus area hold more inclusive attitudes than those studying teacher education without such a focus area (e.g. Feyerer et al. 2014). Following Avramidis and Toulia (2020), the level of in-service training received strongly influences teachers' attitudes towards inclusive schooling. Clearly, teacher education has effects on the specific beliefs and attitudes of pre-service teachers toward inclusion, as it shapes reflective practitioners (Symeonidou 2017).

The current study

The first aim of the present study was to examine the attitudes of pre-service teachers in Austria towards a broader concept of inclusion and to examine the psychometric qualities of the German version of the Attitudes Towards Inclusion Scale of all Students (G-AIS). Therefore, the reliability, construct validity, and convergent validity of the revised scale was analysed. Secondly, the (possible) influence of predictors (gender, origin, teacher training programme, semester, attendance of courses focusing on 'German as a second language' or 'inclusive education', specific focus on inclusive education in teacher training) was analysed.

Methods

Procedure

Data were collected from participants in a course at the University of Vienna, led by the first author of the current study. All participants were surveyed online using the open-source software 'LimeSurvey.' In total, it took about 20–30 min to complete the online survey.

Participants

The sample consisted of pre-service teachers of different teacher training programmes in Vienna, Styria, and Vorarlberg (three of nine Federal States in Austria). In total, 899 pre-service teachers (686 female and 208 male; see also Table 1) participated in the online survey. However, as not all participants answered every question, the sample size varied slightly between different calculations. Participants' ages varied from 18 to 54 years (M = 23.88, SD = 5.868) and Table 1 shows other demographic information of the sample.

Instrumentation

Attitudes towards inclusion of all students

To assess teachers' attitudes towards inclusive schooling of all students, a revised version of the German version of the Attitudes to Inclusion Scale was used (AIS, Sharma and Jacobs 2016; for the original German version of the AIS see Hecht and Ilg 2018; Gebhardt et al. 2018). The German version of this revised scale 'Attitudes towards Inclusion of all Students'

Table 1. Demographic information of the sample.

Variables		N (%)
Country of birth	Austria	818 (91%)
	Other	81 (9%)
First language	German	765 (85.1%)
	Other	74 (8.2%)
	Other and German	60 (6.7%)
Teacher training program	For primary school	244 (27%)
	For secondary school	531 (59%)
Attending courses on German as a second language	Yes	559 (62%)
	No	340 (38%)
Attending courses in inclusive education	Yes	329 (37%)
	No	570 (63%)
Inclusive education as a specific focus in the study program	Yes	128 (14%)
	No	771 (86%)

(G-AIS) consists of 11 items (e.g. 'I believe that inclusion benefits all students academically.'; see Table A1 in the Appendix), which have to be answered on a seven-point Likert-type rating scale (ranging from 1 = 'Strongly Disagree' to 7 = 'Strongly Agree'). The first author of this study was responsible for the scale revisions, which were also discussed in a group of researchers and teachers. During the revision of the scale, reductionist terminology that limited the understanding of inclusion to special educational needs was removed. Two items were used in its original form (Item 1 and Item 3 from the original AIS). In addition, Item 2 of the AIS addressed social benefits of inclusion in general. In the revised version, this item was split into four items, addressing beneficial aspects of inclusion on social behaviour, academic development, social and emotional development as well as on the class structure in general. This differentiation is based on previous studies indicating that teachers in inclusive education are especially concerned about student's behaviour (see e.g. Schwab 2018). In the revision, the original Item 5 of the AIS, which addressed placement of students with severe disabilities in special schools, and Item 6, which addressed the placement of students with social-emotional behaviours in special schools, were merged into one item rephrasing the placement to 'specific students' who should be taught in separate classes, without mentioning a specific disability or behaviour. Item 8 from the original AIS was split into two items (Item 8 and Item 11) in the course of the revision and thus specifically asks for the preference to teach in classes with a broad range of abilities or in rather homogeneous classes. The use of both positive and negative worded items is generally recommended in surveys to avoid response bias (e.g. acquiescence or agreement bias; see e.g. Likert 1932). Item 4 of the original AIS was removed from the G-AIS as the first part ('I believe that all students can learn in inclusive classrooms' was already included in the AIS Item 3 'I believe that inclusion benefits all students academically'). In addition, we wanted to avoid combining two different aspects (student learning and teachers willing to adapt the curriculum) within one item as the feedback by teachers addressed this as difficult. Item 10 from the original AIS was excluded as it specifically addressed students who need assistance.

Moreover, the instructions for the instrument were revised, indicating the broader definition and meaning of inclusion for study participants (focusing on all students independently of individual variables such as language or special educational needs; see Table A1 in the Appendix). We explicitly mentioned special educational needs and language as examples in the instruction section, as inclusive education strongly addresses this (still heterogeneous) group of students (e.g. Schwab 2020) and as language barriers are strongly linked with educational inequalities (e.g. European Commission 2019).

In the study by Sharma and Jacobs (2016), acceptable levels of reliability were found for the original scale with 10 items. Furthermore, the authors suggested a two-dimensional factor structure (beliefs about inclusion and feelings about inclusion). Further, Gebhardt et al. (2018) showed satisfactory reliability for the German version within two samples of German pre-service teachers. For the psychometric quality of the German version of the AIS see also Miesera et al. (2019), who confirmed the two-dimensional factor structure.

Attitudes towards inclusion of students with learning disabilities and migrant background

To assess participants' specific attitudes towards the inclusion of students with learning disabilities and migrant backgrounds, case vignettes were used. While the case

description for the students with learning disabilities was based on the preliminary work of de Boer et al. (2012), Schwab et al. (2012) and Schwab (2018), the case vignette for students who had not learnt German as a first language was newly developed (see Kast and Schwab 2020). For both cases, the six items (e.g. 'I think that this child learns a lot in this class.') of the ATIS (Attitudes toward Inclusion Scale, see Schwab et al. 2012) had to be answered on a four-point Likert scale.

Results

Psychometric properties of the German version of the attitudes towards inclusion of all students scale (G-AIS)

Cronbach's alphas were calculated to examine the G-AIS scale for internal consistency. Cronbach's alpha for the AIS scale overall was .903, which indicates a high level of internal consistency (George and Mallery 2003). In addition, the Cronbach's alpha for the subscale 'beliefs about students' development in inclusive education' (F1: items 1, 2, 3, 4, 5, 6, and 7) was .892, while for the second, 'general feelings about inclusive education for all students' (F2: items 8, 9, 10, and 11), it was .801.

Confirmatory factor analysis was conducted to examine the construct validity of the G-AIS scale. Table 2 shows that, in the first run of the CFA, the fit indices were not at the acceptable range to support the conclusion that the observed data fit the hypothesised two-factors model. Next, the error from seven items within the first subscale was covariate to reduce the error in the model, as was suggested by the AMOS software. The fit indices then reached the acceptable range for the comparative fit index (CFI = 0.96) (Bentler and Bonett 1980; Pugesek, Tomer, and Von Eye 2003), the root mean square error of approximation (RMSEA) = 0.08 (Schermelleh-Engel, Moosbrugger, and Müller 2003), and the Tucker–Lewis coefficient (TLI) >.90 (Bentler and Bonett 1980). In addition, items loading on both factors ranged from .38 to .9, and could be considered as good indicators. The final model with item loadings is visualised in Figure 1.

In addition to examining the construct validity of the G-AIS scale, the convergent validity was examined through the correlation of the overall G-AIS scale with pre-service teachers' attitudes towards inclusion of students with learning disabilities and migrant backgrounds. The correlation between the G-AIS and those towards the inclusion of students with learning disabilities was $r = .453$ ($p < .01$). For the G-AIS and the attitudes towards students with migrant backgrounds, the correlation was .413 ($p < .01$). In comparison, the correlations

Table 2 . Confirmatory factor analysis of the AIS.

								90% CI for RMSEA	
Model	X^2	*df*	*P*	CFI	TLI	SRMR	RMSEA	LL	UL
Two factors	629.21	43	.000	0.91	0.89	0.06	0.12	.116	.133
Two factors[a]	276.54	36	.000	0.96	0.94	0.04	0.08	.077	.096

Note: CFI: comparative fit index; TLI: Tucker–Lewis index; SRMR: standardized root mean square residual; RMSEA: root mean square error of approximation; CI: confidence interval; LL: lower limit; UL: upper limit, a: items errors were covariate within each subscale.

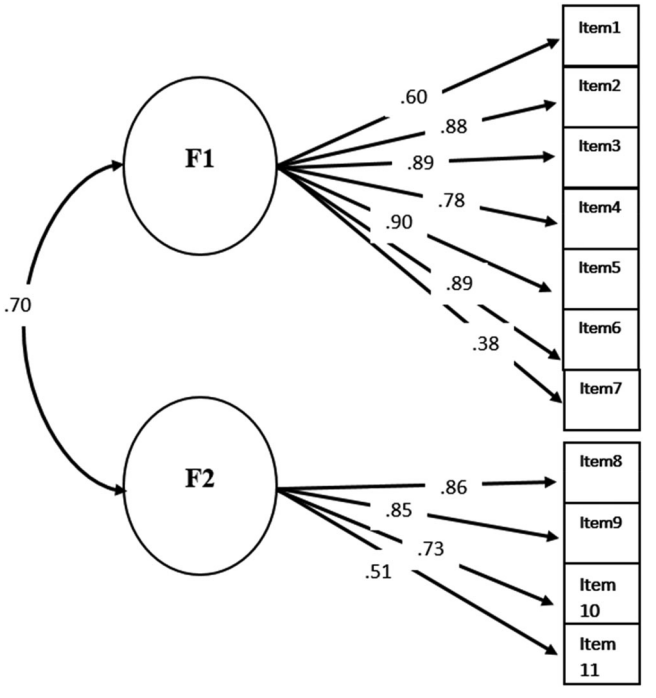

Figure 1. Confirmatory factor analysis of the two-factors model.

between the two specific subscales (attitudes towards inclusion of students with learning disabilities and migrant backgrounds) were .447 ($p < .01$).

Predictors of pre-service teachers' general attitudes towards inclusive schooling

Next, the influence of possible predictors on participants' attitudes was examined. Seven independent variables were analysed: gender (female vs. male), place of birth (Austria or another country), teacher training programme (for either primary or secondary schools), semester of teacher training, attendance of courses focusing on 'German as a second language', attendance of courses focusing on 'inclusive education', and whether or not pre-service teachers chose a specific focus on inclusive education. All categorical variables were coded (0 and 1).

Multiple regression was used to examine predictors of attitudes. Results showed that three variables were significant in predicting pre-service teachers' attitudes (see Table 3). This model explained around 10% of pre-service teachers' attitudes, with a significant regression model ($F(7, 576) = 9.37$, $p < .01$), with an R^2 of .103. The significant predicators were: whether the pre-service teachers chose inclusive education as a specific focus area in their teacher training programme, their gender, and whether they were born in a country other than Austria. This showed that pre-service teachers who studied inclusive education as a specific focus area were more likely to hold positive attitudes. In addition, female participants and participants' born in countries other than Austria were more likely to express more positive attitudes. Table 4 shows the mean scores and the standard deviations for the total sample as well as for subsamples.

Table 3. Multiple regression statistics.

		Unstandardized coefficients		Standardized coefficients			
	B	Beta	Beta		*t*	Sig.	Partial *R*
1	(Constant)	4.099	.249		16.430	.000	
	Gender (female vs. male)	−.256	.100	−.109	−2.560	**.011***	.006
	Place of birth (Austria vs. another country)	.307	.138	.089	2.227	**.026***	.054
	Teacher training program (for primary or secondary school)	−.064	.097	−.031	−0.665	.506	−.021
	Number of semesters	.008	.017	.019	0.449	.654	
	Attendance of courses in German as a second language	.119	.094	.058	1.265	.206	.022
	Attendance of courses in inclusive education	.033	.094	.016	0.352	.725	.000
	Inclusive education as a focus of training	.817	.124	.274	6.579	**.000****	.311

* $p < .05$, $p < .01$.

Discussion

The Global Education Monitoring Report (2020) states in its title 'All means All.' However, even if negative attitudes towards inclusive schooling are one of the most investigated barriers to its implementation, the available instruments for measuring (in- and pre-service) teachers' attitudes towards inclusive schooling focus either on students with special educational needs in general (e.g. AIS, Sharma & Sokal, 2016) or on attitudes towards specific student groups with disabilities, such as learning disabilities (see, for example, Schwab et al. 2012). Therefore, we perceive a lack of instruments for measuring broader understandings of inclusive schooling, focusing on the provision of the best educational opportunities to all students, irrespective of specific student characteristics.

Therefore, the aim of this study was to measure the attitudes of pre-service teachers towards inclusion by adapting and improving one of the most frequently used scales to assess (pre- and in-service) teachers' attitudes towards inclusive schooling, the AIS (Sharma and Jacobs 2016), by revising it to focus on *all* students (see Appendix 1 for the changes in detail). Preliminary analyses indicate that the newly developed scale has high psychometric properties. The suggested two-dimensional factor structure (see Sharma and Jacobs 2016; Miesera et al. 2019) was confirmed using CFA. Therefore, within this scale, beliefs and feelings about inclusive education can also be separated.

Table 4. Mean scores and standard deviations for the sample and sub-samples.

Variables		*N* (%)	*M*	SD
Gender	Female	686 (76%)	5.49	0.99
	Male	208 (23%)	5.14	1.05
Place of birth	Austria	818 (91%)	5.39	1.02
	Other	81 (9%)	5.63	0.93
Teacher training program	For primary school	244 (27%)	5.49	0.96
	For secondary school	531 (59%)	5.32	1.01
Attending courses on German as a second language	Yes	559 (62%)	5.41	1.00
	No	340 (38%)	5.42	1.03
Attending courses in inclusive education	Yes	329 (37%)	5.30	1.03
	No	570 (63%)	5.47	1.01
Inclusive education as a focus of training	Yes	128 (14%)	6.19	0.70
	No	771 (86%)	5.28	1.01
Total			5.42	1.02

Negative items showed the lowest factor loadings, which is to be expected and is consistent with several other studies (Alnahdi 2019; Roszkowski and Soven 2010; Stewart and Frye 2004). However, using balanced items (positively and negatively phrased items) can counteract response tendencies. This would be of special importance if the scales are used in international contexts. Moreover, reliability for both subscales was in a high range. According to the total scale, the reliability was high. In addition, convergent validity was also demonstrated. The results indicate that general attitudes towards inclusive schooling were only moderately linked with attitudes towards the inclusion of students with specific characteristics (learning disabilities and migrant backgrounds). This is in line with the results of the meta-analysis of Yada et al. (submitted), indicating that results (in their case the correlation between teachers' attitudes and self-efficacy beliefs) can vary based on the operationalization of inclusion within the attitudes scale.

Further, the results confirmed that female (pre-service) teachers tend to have a more positive attitude towards inclusive schooling, as compared to their male counterparts. Moreover, having a migrant background was associated with a more positive attitude towards inclusive schooling. One explanation for this correlation is that pre-service teachers having a migrant background are less distant from diversity and have relevant prior experiences with diversity. This means that the cultural dissonance between pre-service teachers and diverse students is significantly smaller for this group of participants in the study than for native and privileged pre-service teachers. However, the strongest predictor for a positive attitude was not a personal characteristic of the social actor, the pre-service teacher, but a structural-functional predictor: the choice of a specific focus on inclusive education in the teacher training programme. This again emphasises the need to make teacher training more relevant to the question of inclusion (Polat 2011).

Practical relevance of the current study

Teacher attitudes can be shaped by professional development. For this reason, pre-service teachers should be exposed to alternative conceptions of disability, inclusion, diversity, learning, and instruction during their teacher training programmes. However, it is not yet fully clear how and when beliefs and attitudes are formed, and how they can be challenged through professional teacher education. However, the results of this study, as well as those of others (e.g. Jordan 2018), suggest that teachers are more likely to apply inclusive attitudes when they have first-hand experiences of them within teacher training. Thus, the early stages of teacher training are decisive for the development of beliefs and attitudes towards inclusion. One of the main questions for teacher education is how pre-service teachers become effective and reflective practitioners and how their sense of responsibility for meeting diverse learners' needs can be promoted (Jordan 2018). Teachers are considered as key social actors in the successful implementation of inclusive education (Pit-ten Cate et al. 2019). However, the structural and cultural context in each country has to be taken into account (Symeonidou 2017). As a result, it is first important to consider teachers' attitudes towards inclusive education from an actor's perspective, and secondly to invest in pre-service teachers' professionalisation during pre-service and in-service training from a structuralist perspective. When thinking beyond the responsibility of individual teachers and deploying more structural-functionalist perspectives, inclusion means creating inclusive schools and communities

that adhere to social justice and value diversity, creating an inclusive school environment and developing inclusive policies (Norwich and Koutsouris 2017). Both cognitive skills about inclusion as well as practical experiences in schools are relevant for pre-service teachers to overcome the theory–practice divide (Resch and Schrittesser 2021). Lindblom et al. (2020) recommend ensuring that pre-service teachers have positive contact with students with disabilities during their teacher training, and to especially foster a positive quality of contact inside and outside the classroom. Otherwise, there is the risk of a growing distance or cultural dissonance between teachers and students. Especially in schools, teachers are primarily responsible for approaching diverse students and their individual needs—a responsibility that teacher education prepares them for. Intentional behaviour (for diversity and inclusion) is a process; it evolves over time (Giddens 1982) if it is exercised, reflected upon, and internalised in teacher training. Tjernberg and Mattson (2014) emphasise that internalising inclusive teaching practices requires more personalised instruction in teacher education, a large variety of methods of differentiation and cooperation (see also the review of Lindner & Schwab 2021 for inclusive teaching practices). Teacher attitudes can be shaped by forms of professional development in this matter. However, there are few studies exploring this transition of attitudes towards inclusive education from teacher education to the workplace. One of the few studies in this regard found that attitudes, self-efficacy, and perceived knowledge drop significantly between the pre-service and novice teacher year (Mintz et al. 2020). Thus, the authors conclude that the inclusion of children with diverse needs into mainstream classes is still one of the most considerable challenges for novice teachers in the transition from the pre-service phase to the novice teacher year.

Therefore, attitudes towards inclusion can be viewed as the key challenge of novice teachers, who may need guidance to transfer their experiences from teacher education to the workplace.

Limitations

As in all studies, limitations that might affect the interpretation of the data have to be addressed. As in other studies, the sample of this study is not representative. Migrants are underrepresented in this empirical study, as the number of people with migrant background in Austria is proportionately higher than the number of pre-service teachers who are non-native Austrians or speak a language other than German. According to Statistik Austria (2018), around a quarter of Austrians have a migrant background. As the proportion of participants in the sample who reported not speaking German as their first language was below 10%, an ethnic underrepresentation is given. This mirrors a certain degree of social and educational inequality and exclusion from the Austrian educational system. The higher the educational qualification level, the lower the proportion of representatives with migrant biographies (Steiner 2019).

Moreover, also limitations regarding the revised scale G-AIS used in this study have to be addressed. The wording of Item 7 is problematic as it is open to interpretation due to the use of the phrase ‘specific students.’ Using ‘specific students’ follows the concept of differentiation, meaning that the precise characteristics of some students may lead to attending separate classes. However, the respondents might still have had precise characteristics in mind while responding to this item. Similarly, even if the revised G-AIS

focuses on attitudes towards *all* students, the instructions still provide two examples, language barriers and special educational needs, which might seem to contradict the main purpose of a non-categorized approach as 'all means all' without using categories. Bearing this in mind, the research team still decided to use these examples as the teacher's feedback indicated that with only mentioning 'all students' in the context of inclusion in Austria, teachers would solely address students with and without SEN. Future research might include other examples such e.g. religion, culture, gender, or ethnicity which are often addressed in the context of diversity research.

Conclusion

Teachers are considered as key social actors in the successful implementation of inclusive education (Pit-ten Cate et al. 2019). Therefore, their attitudes towards inclusive education play an important role in teaching. However, research must stop focusing on a rather narrow understanding of inclusion, since policy papers (e.g. Global Education Monitoring Report 2020) repeatedly stress the fact that inclusion has to include all students and not just some. The overall objective of teacher education must be to meet this key challenge and to prepare teachers – especially those from privileged or majority groups – to acquire skills, knowledge, and dispositions necessary to teach diverse students. This implies specific training at the pre-service level with a degree of practice (Resch and Schrittesser 2021). Exposing pre-service teachers to evidence-based practice may help them recognise effective teaching strategies (Killoran, Woronko, and Zaretsky 2014) or train diversity skills (Salmona et al. 2015). Methods for pre-service teachers to become more inclusive include, for example, autobiographical analyses in order to help teachers become more conscious of their own beliefs and values (Genor and Lin Goodwin 2005), reflective exercises (Conklin and Hughes 2016), digital story telling for social justice (Matias and Grosland 2016), working with local communities or service learning (Amaro-Jiménez 2012; Zeichner et al. 2016).

Note

1. https://sustainabledevelopment.un.org/sdg4 (6.7.2020).

Disclosure statement

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

Funding

This work was supported by Deanship of Scientific Research at 10.13039/100009392 Prince Sattam Bin Abdulaziz University [grant number #2020/02/11930].

Notes on contributors

Susanne Schwab is a full Professor for School Pedagogy at the University of Vienna (Austria) and extraordinary professor at the North-West University in Vanderbijlpark (South-Africa). Her current research focuses on inclusive education and on learning support and learning

intervention, as well as on the students' achievement and social and emotional development of students from minority groups.

Katharina Resch is an Interim Professor at the University of Koblenz-Landau, Germany, and a post-doctoral researcher at the University of Vienna, Austria. She holds degrees in sociology and translation studies and primarily focuses on social and educational inequalities, diversity, inclusion, and higher education research.

Ghaleb Alnahdi is a professor at Prince Sattam bin Abdulaziz University in Saudi Arabia. His research interests include inclusive education, psychometric analysis, intellectual disability, and teacher preparation.

ORCID

Susanne Schwab http://orcid.org/0000-0002-3989-4473
Katharina Resch http://orcid.org/0000-0002-5532-8105

References

Alnahdi, G. H. 2019. "The Psychometric Properties of the Arabic Version of the Mental Retardation Attitude Inventory-Revised (MRAI-R) Scale." *Cogent Psychology* 6 (1): 1686804.

Amaro-Jiménez, C. 2012. "Service Learning: Preparing Teachers to Understand Better Culturally and Linguistically Diverse Learners." *Journal of Education for Teaching* 38 (2): 211–213. doi:10.1080/02607476.2012.656448.

Avramidis, E., P. Bayliss, and R. Burden. 2000. "Student Teachers' Attitudes Towards the Inclusion of Children with Special Educational Needs in the Ordinary School." *Teaching and Teacher Education* 16: 277–293.

Avramidis, E., and B. Norwich. 2002. "Teachers' Attitudes Towards Integration/Inclusion: A Review of the Literature." *European Journal of Special Needs Education* 17 (2): 129–147.

Avramidis, E., and A. Toulia. 2020, April 30. Attitudes and Inclusion of Students with Special Educational Needs in Regular Schools. In *Oxford Research Encyclopedia of Education*. Retrieved June 21, 2020, from https://oxfordre.com/education/view/10.1093/acrefore/9780190264093.001.0001/acrefore-9780190264093-e-1237.

Bentler, P. M., and D. G. Bonett. 1980. "Significance Tests and Goodness of Fit in the Analysis of Covariance Structures." *Psychological Bulletin* 88: 588–606. doi:10.1037/0033-2909.88.3.588.

Büssing, A. G., S. Menzel, M. Schnieders, V. Beckmann, and M. Basten. 2019. "Values and Beliefs as Predictors of Pre-service Teachers' Enjoyment of Teaching in Inclusive Settings." *Journal of Research in Special Educational Needs* 19 (1): 8–23. doi:10.1111/1471-3802.12474.

Conklin, H., and H. Hughes. 2016. "Practices of Compassionate, Critical, Justice-oriented Teacher Education." *Journal of Teacher Education* 67 (1): 47–60.

de Boer, A. A., S. J. Pijl, and A. Minnaert. 2011. "Regular Primary Schoolteachers' Attitudes Towards Inclusive Education: A Review of the Literature." *International Journal of Inclusive Education* 15 (3): 331–353.

de Boer, A., M. Timmerman, S. J. Pijl, and A. Minnaert. 2012. "The Psychometric Evaluation of a Questionnaire to Measure Attitudes Towards Inclusive Education." *European Journal of Psychology of Education* 27 (4): 573–589. doi:10.1007/s10212-011-0096-z.

European Commission/EACEA/Eurydice. 2019. *Integrating Students from Migrant Backgrounds Into Schools in Europe: National Policies and Measures. Eurydice Report*. Luxembourg: Publications Office of the European Union.

Feyerer, E., A. Dlugosch, E. Prammer-Semmler, and H. Reibnegger. 2014. Einstellungen und Kompetenzen von LehramtstudentInnen und LehrerInnen für die Umsetzung inklusiver Bildung. Forschungsbericht BMUKK-20.040/0011-1/7/2011, Endbericht 2014.

Gasterstädt, J., and M. Urban. 2006. "Einstellung zu Inklusion? Implikationen aus Sicht qualitativer Forschung im Kontext der Entwicklung inklusiver Schulen." *Empirische Sonderpädagogik* 2016 (1): 54–66.

Gebhardt, M., S. Miesera, P. Weidenhiller, and J. Jungjohann. 2018. Technischer Bericht/Technical Report: Einstellung, Bedenken und Selbstwirksamkeitserwartung von Lehramts-studierenden zur schulischen Inklusion. doi:10.17877/DE290R-18869.

Genor, M., and A. Lin Goodwin. 2005. "Confronting Ourselves: Using Autobiographical Analysis in Teacher Education." *The New Educator* 1 (4): 311–331.

George, D., and M. Mallery. 2003. *Using SPSS for Windows Step by Step: A Simple Guide and Reference*. 4th ed. London: Pearson Education.

Giddens, A. 1982. *Profiles and Critiques in Social Theory*. London: Macmillan.

Global Education Monitoring Report. 2020. *Inclusion and Education. All Means All*. Paris: UNESCO.

Glock, S., and H. Kleen. 2019. "Attitudes Toward Students from Ethnic Minority Groups: The Roles of Preservice Teachers' Own Ethnic Backgrounds and Teacher Efficacy Activation." *Studies in Educational Evaluation* 62: 82–91.

Good, T. L., and J. E. Brophy. 2000. *Looking in Classrooms*. New York: Harper & Row.

Haug, P. 2017. "Understanding Inclusive Education: Ideals and Reality." *Scandinavian Journal of Disability Research* 19 (3): 206–217.

Hecht, P., and A. Ilg. 2018. "Sind Sie bereit für einen inklusiven Unterricht? Ein Fragebogeninstrument zur Ermittlung der Inklusionsbereitschaft bei Lehrpersonen." *Heilpädagogik* 61 (4): 2–6.

Hecht, P., C. Niedermair, and E. Feyerer. 2016. "Einstellungen und inklusionsbezogene Selbstwirksamkeitsüberzeugungen von Lehramtsstudierenden und Lehrpersonen im Berufseinstieg – Messverfahren und Befunde aus einem Mixed-Methods-Design." *Empirische Sonderpädagogik* 2016 (1): 86–102.

Hellmich, F., M. F. Löper, and G. Görel. 2019. "The Role of Primary School Teachers' Attitudes and Self-efficacy Beliefs for Everyday Practices in Inclusive Classrooms – A Study on the Verification of the 'Theory of Planned Behaviour'." *Journal of Research in Special Educational Needs* 19 (1): 36–48.

Jordan, A. 2018. "The Supporting Effective Teaching Project: 1. Factors Influencing Student Success in Inclusive Elementary Classrooms." *Exceptionality Education International* 28: 10–27. Retrieved from https://ir.lib.uwo.ca/eei/vol28/iss3/3.

Kast, J., and S. Schwab. 2020. "Teachers' and Parents' Attitudes Towards Inclusion of Pupils with a First Language Other Than the Language of Instruction." *International Journal of Inclusive Education*.

Killoran, I., D. Woronko, and H. Zaretsky. 2014. "Exploring Preservice Teachers' Attitudes Towards Inclusion." *International Journal of Inclusive Education* 18 (4): 427–442.

Likert, R. 1932. "A Technique for the Measurement of Attitudes." *Archives of Psychology* 22 (1932-33): 5–55.

Lindblom, A., K. Dindar, S. Soan, E. Kärnä, C. Roos, and M. T. Carew. 2020. "Predictors and Mediators of European Student Teacher Attitudes Toward Autism Spectrum Disorder." *Teaching and Teacher Education* 89: 102993–10.

Lindner, K.-T., and S. Schwab. 2020. "Differentiation and Individualisation in Inclusive Education: A Systematic Review and Narrative Synthesis." *International Journal of Inclusive Education*. doi:10.1080/13603116.2020.1813450.

Loremann, T., C. Earle, U. Sharma, and C. Forlin. 2007. "The Development of an Instrument for Measuring Pre-service Teachers' Sentiments, Attitudes, and Concerns About Inclusive Education." *International Journal of Special Education* 22 (2): 150–160.

Matias, C. E., and T. J. Grosland. 2016. "Digital Storytelling as Racial Justice; Digital Hopes for Deconstructing Whiteness in Teacher Education." *Journal of Teacher Education* 67: 152–164.

Miesera, S., J. M. DeVries, J. M. Jungjohann, and M. Gebhardt. 2019. "Correlation Between Attitudes, Concerns, Self-efficacy and Teaching Intentions in Inclusive Education Evidence

from German Pre-service Teachers Using International Scales." *Journal of Research in Special Educational Needs* 19: 103–114.

Mintz, J., P. Hick, Y. Solomon, A. Matziari, F. O'Murchú, K. Hall, K. Cahill, C. Curtin, J. Anders, and D. Margariti. 2020. "The Reality of Reality Shock for Inclusion: How Does Teacher Attitude, Perceived Knowledge and Self-efficacy in Relation to Effective Inclusion in the Classroom Change from the Pre-service to Novice Teacher Year?" *Teaching and Teacher Education* 91: 103042–11.

Norwich, B., and G. Koutsouris. 2017. "Addressing Dilemmas and Tensions in Inclusive Education." *Oxford Research Encyclopedia of Education*, 1–26. DOI: 10.1093/acrefore/9780190264093.013.154.

Pit-ten Cate, I. M., and S. Glock. 2019. "Teachers' Implicit Attitudes Toward Students from Different Social Groups: A Meta-analysis." *Frontiers in Psychology* 10 (2832): 1–18..

Pit-ten Cate, I. M., S. Schwab, P. Hecht, and P. Aiello. 2019. "Editorial: Teachers' Attitudes and Self-efficacy Beliefs with Regard to Inclusive Education." *Journal of Research in Special Educational Needs* 19 (1): 3–7. doi:10.1111/1471-3802.12480.

Polat, F. 2011. "Inclusion in Education: A Step Towards Social Justice." *International Journal of Educational Development* 31: 50–58.

Pugesek, B. H., A. Tomer, and A. Von Eye. 2003. *Structural Equation Modeling: Applications in Ecological and Evolutionary Biology*. Cambridge: Cambridge University Press.

Resch, K., and I. Schrittesser. 2021. "Using the Service-Learning Approach to Bridge the Gap Between Theory and Practice in Teacher Education." *International Journal of Inclusive Education*, 1–15.

Roszkowski, M. J., and M. Soven. 2010. "Shifting Gears: Consequences of Including Two Negatively Worded Items in the Middle of a Positively Worded Questionnaire." *Assessment & Evaluation in Higher Education* 35 (1): 113–130. doi:10.1080/02602930802618344.

Salmona, M., M. Partlo, D. Kaczynski, and S. Leonard. 2015. "Developing Culturally Competent Teachers: An International Student Teaching Field Experience." *Australian Journal of Teacher Education* 40 (4): 35–53.

Schermelleh-Engel, K., H. Moosbrugger, and H. Müller. 2003. "Evaluating the fit of Structural Equation Models: Tests of Significance and Descriptive Goodness-of-fit Measures." *Methods in Psychological Research Online* 8: 23–74.

Schwab, S. 2018. *Attitudes Towards Inclusive Schooling: A Study on Students', Teachers' and Parents' Attitudes*. Münster: Waxmann Verlag.

Schwab, S. 2020. "Inclusive and Special Education in Europe." In *Oxford Research Encyclopedia of Education*. CT: Oxford University Press. http://dx.doi.org/10.1093/acrefore/9780190264093.013.1230.

Schwab, S., M. Gebhardt, E. M. Ederer-Fick, and B. Gasteiger Klicpera. 2012. "An Examination of Public Opinion in Austria Towards Inclusion. Development of the 'Attitudes Towards Inclusion Scale' – ATIS." *European Journal of Special Needs Education* 27 (3): 355–371. doi:10.1080/08856257.2012.691231.

Schwab, S., and S. Seifert. 2014. "Einstellungen von Lehramtsstudierenden und Pädagogikstudierenden zur schulischen Inklusion – Ergebnisse einer quantitativen Untersuchung." *Zeitschrift für Bildungsforschung* 5 (1): 73–87. doi:10.1007/s35834-014-0107-7.

Schwab, S., U. Sharma, and L. Hoffmann. 2019. "How Inclusive Are the Teaching Practices of my German, Maths and English Teachers? Psychometric Properties of a Newly Developed Scale to Assess Personalisation and Differentiation in Teaching Practices." *International Journal of Inclusive Education*.

Sharma, U., and K. Jacobs. 2016. "Predicting In-Service Educators' Intentions to Teach in InclusiveClassrooms in India and Australia." *Teaching and Teacher Education* 55: 13–23. doi:10.1016/j.tate.2015.12.004.

Statistik Austria. 2018. Ergebnisse im Überblick: Migrationshintergrund [Results at a glance: migration background.] http://www.statistik.at/web_de/statistiken/menschen_und_gesellschaft/bevoelkerung/bevoelkerungsstruktur/bevoelkerung_nach_migrationshintergrund/index.html.

Steiner, M. 2019. *Von der Chancengleichheit zur Ausgrenzung: Ein sozialer Fortschritt durch Bildung? Eine theoretische und empirische Aufarbeitung*. Münster/New York: Waxmann.

Stewart, T. J., and A. W. Frye. 2004. "Investigating the Use of Negatively Phrased Survey Items in Medical Education Settings: Common Wisdom or Common Mistake?" *Academic Medicine* 79: S18–S20.

Symeonidou, S. 2017. "Initial Teacher Education for Inclusion: A Review of the Literature." *Disability & Society* 32 (3): 401–422. doi:10.1080/09687599.2017.1298992.

United Nations. 2006. *Convention on the Rights of Persons with Disabilities*. New York: United Nations. Retrieved 30 May 2021. http://www.un.org/disabilities/documents/convention/convoptprot-e.pdf.

Tjernberg, C., and E. H. Mattson. 2014. "Inclusion in Practice: a Matter of School Culture." *European Journal of Special Needs Education* 29 (2): 247–256.

Zeichner, K., M. Bowman, L. Guillen, and K. Napolitan. 2016. "Engaging and Working in Solidarity With Local Communities in Preparing the Teachers of Their Children." *Journal of Teacher Education* 67 (4): 277–290.

Appendix

Table A1. G-AIS scale in comparison with the original AIS version of Sharma & Sokal (2016).

Item Nr. (G-AIS)	Original AIS (Sharma & Sokal, 2016)	G-AIS (English version)	G-AIS (German version)
Introduction	The AIS measures educators' attitudes to the inclusion of students with diversities in regular schools. Inclusion means that students who have diverse learning needs are educated in regular classrooms alongside their peers with necessary support to students and the teacher. Please rate your degree of agreement by choosing one of the 7 anchors that best reflects your agreement with each statement. Please note that there are no right or wrong answers.	Please rate your degree of agreement by choosing one of the 7 anchors that best reflects your agreement with each statement. Please note that there are no right or wrong answers. Inclusion means that all students are taught together (independently of individual student characteristics such as e.g. language competencies, special educational needs etc.).	Bitte bewerten Sie den Grad Ihrer Zustimmung, indem Sie eine der sieben Stufen, die am besten Ihre Zustimmung in Bezug auf die jeweilige Aussage widerspiegelt, auswählen. Bitte beachten Sie, dass es keine richtigen oder falschen Antworten gibt. Der Begriff Inklusion bezieht sich im Folgenden auf den gemeinsamen Unterricht aller SchülerInnen (unabhängig von individuellen Schülermerkmalen wie z.B. Sprachkenntnisse, sonderpädagogischer Förderbedarf etc.).
1	1. 'I believe that all students regardless of their ability should be taught in regular classrooms.'	Original AIS item 1	Ich glaube, dass alle SchülerInnen unabhängig von ihrer Fähigkeit in regulären Klassen unterrichtet werden sollten.
2	2. 'I believe that inclusion is beneficial to all students socially.'	I believe inclusion is beneficial to the social behaviour of all pupils.	Ich glaube, dass sich Inklusion positiv auf das Sozialverhalten der SchülerInnen auswirkt.
3	Adapted from item 2 of the original AIS	I believe that inclusion is beneficial to the class structure.	Ich glaube, dass sich Inklusion positiv auf das Klassengefüge auswirkt.
4	3. 'I believe that inclusion benefits all students academically.'	Original AIS item 3	Ich glaube, dass sich Inklusion positiv auf das Lernen aller SchülerInnen auswirkt.
5	- Adapted from item 2 of the original AIS	I believe inclusion is beneficial to the social development of all pupils.	Ich glaube, dass sich Inklusion positiv auf die soziale Entwicklung aller SchülerInnen auswirkt.
6	- Adapted from item 2 of the original AIS	I believe inclusion is beneficial to the emotional development of all pupils.	Ich glaube, dass sich Inklusion positiv auf die emotionale Entwicklung aller SchülerInnen auswirkt.
	4. 'I believe that all students can learn in inclusive classrooms if their teachers are willing to adapt the curriculum.'	- Not included in G-AIS	- Not included in G-AIS
7	5. 'I believe that placement of students with severe disabilities in special schools is the best option for education of such students.'	I believe that specific students should be taught in separate support classes.	Ich glaube, dass bestimmte SchülerInnen in separaten Förderklassen unterrichtet werden sollten.
	6. 'I believe that students with social emotional behaviors should be taught in special schools.'	- Not included in G-AIS	- Not included in G-AIS

(*Continued*)

Table A1. Continued.

Item Nr. (G-AIS)	Original AIS (Sharma & Sokal, 2016)	G-AIS (English version)	G-AIS (German version)
8	8. 'I am excited to teach students with a range of abilities in my class.'	I am pleased to have the opportunity to teach students with different abilities in my class.	Ich freue mich, die Gelegenheit zu haben, SchülerInnen mit unterschiedlichen Fähigkeiten in meiner Klasse zu unterrichten.
9	7. 'I am pleased that I have the opportunity to teach students with lower academic ability alongside other students in my class.'	I am pleased to include students in my class who need different support in their learning.	Ich bin froh darüber, SchülerInnen in meiner Klasse zu inkludieren, die unterschiedliche Unterstützung im Lernen benötigen.
10	9. 'I am pleased that including students with a range of abilities will make me a better teacher.'	I am pleased to teach students with a range of abilities in my class.	Ich freue mich, SchülerInnen mit einer Vielzahl an Fähigkeiten in meiner Klasse zu unterrichten.
	10. 'I am happy to have students who need assistance with their daily activities included in my classrooms.'	- Not included in G-AIS	- Not included in G-AIS
11	Adapted from item 8 of the original AIS	I prefer teaching in a class, in which the abilities of students do not differ much.	Ich unterrichte lieber in einer Klasse, wo sich die Fähigkeiten der SchülerInnen nicht stark unterscheiden.