

## **How Do Attitudes and Self-Efficacy Predict Teachers' Intentions to Use Inclusive Practices? A Cross-National Comparison Between Canada, Germany, Greece, Italy, and Switzerland**

**Caroline Sahli Lozano and Sergej Wüthrich**  
*Bern University of Teacher Education*

**Harry Kullmann and Margarita Knickenberg**  
*Paderborn University*

**Umesh Sharma**  
*Monash University*

**Tim Loreman**  
*Concordia University of Edmonton*

**Alessandra Romano**  
*University of Siena*

**Elias Avramidis**  
*University of Thessaly*

**Stuart Woodcock**  
*Griffith University*

**Pearl Subban**  
*Monash University*

### **Abstract**

*Inclusive education is a key goal of modern educational reforms, yet its implementation is complex. This study examines the roles of teacher attitudes and self-efficacy in predicting their intentions to use inclusive practices across five western countries: Canada, Germany, Greece, Italy, and Switzerland. The study identified both significant differences and commonalities in prediction patterns across these countries. For instance, beliefs about inclusion varied in their significance, being the most influential predictor among Italian teachers, while managing challenging*

*behaviour was a key predictor for Swiss teachers only. For the other predictors, no significant differences were found, and self-efficacy in collaboration was the strongest predictor nominally. The study suggests that, while aspects such as collaboration seem generally important across countries, effective strategies for promoting inclusive education may also need to be tailored to each country's unique context, considering aspects of historical background of inclusive education, teacher training, and support. It also emphasizes the need to consider domain-specific aspects of teacher self-efficacy, as different facets differently affect teachers' intentions.*

## Introduction

The establishment of inclusive schools and, thus, equal access to education for all children is a central goal of current education reforms and developments, although implementation is complex and challenging (Loreman et al., 2007). Understanding what drives teachers to adopt inclusive practices is crucial for promoting equal educational opportunities for all students. In this context, the theory of planned behaviour (TPB; Ajzen, 1991) has been proven to be a useful theoretical framework, positing that the interplay between teachers' attitudes, subjective norms, and self-efficacy regarding inclusive education determine their intention to use inclusive teaching practices (Sharma & Mannan, 2015). In this regard, attitudes and self-efficacy have been identified as essential factors (Hellmich et al., 2019; Opoku et al., 2021; Sahli Lozano et al., 2021; Sharma et al., 2018). However, there exists considerable variability in their relative importance across studies and teacher samples, with teacher attitudes being sometimes less (e.g., Opoku et al., 2021) or more important than teacher self-efficacy (Sharma et al., 2018) and with diverging patterns across countries (e.g., Sahli Lozano et al., 2021). Understanding the factors that influence the prediction of the use of inclusive practices is crucial in general, as it informs teacher education, guides policymakers, aids in resource allocation, and fosters inclusive teaching practices as it informs teacher education guide policymakers aid and resource application. Further, investigating differences in the predictors of inclusive teaching offers new perspectives on relationships with country-specific differences (e.g., in culture, history, legislation, and school systems). For example, in countries such as Canada, considered to have been a "driving force" of inclusion early on (Merz-Atalik, 2022; Specht & Thompson, 2022), or Italy, with its early inclusive education reforms beginning in the 1970s (Ianes et al., 2020), prediction patterns regarding the use of inclusive practices among teachers might be different than in countries such as Switzerland or Germany, which continue to have a relatively high amount of segregation in their education systems (Hollenweger, 2014). Sahli Lozano et al. (2021), in their cross-comparison study of in-service educators from Switzerland and Australia, stated that differences in practices could largely be explained by differences in teacher-preparation programs in the two countries. They also reported that in countries with a long history of inclusion and more progressive inclusion policies, teachers may have developed more positive attitudes which, by extension, might also positively influence their self-efficacy beliefs. Although many studies have compared differences in teacher attitudes and self-efficacy across countries, so far, no studies have systematically investigated cross-national differences in prediction patterns of inclusive intentions.

The current study is significant in that it is among the first to examine differences in the prediction of inclusive teacher intentions among teacher groups from five distinct western countries: Canada, Germany, Greece, Italy, and Switzerland. Additionally, this study investigates disparities in attitudes, self-efficacy, and teacher intentions across these countries. Such differences could shed light on the potential variances in prediction patterns of inclusive intentions. Compared to previous studies, this study also addresses two important, but previously neglected, aspects: (a) It addresses the issue of measurement invariance and (b) assesses not only global constructs but also subcomponents of attitude and self-efficacy constructs. Establishing measurement invariance for instruments used across countries is crucial for ensuring valid cross-national comparisons. Without this, it becomes challenging to discern whether observed differences have arisen from genuine cross-national variations or are merely a result of differences in how the constructs have been measured or interpreted across distinct teacher samples (Davidov et al., 2014). Further, attitudes have affective and cognitive components (Eagly & Chaiken, 1993), while teacher self-efficacy is context- and task-specific (Bandura, 1997; Tschannen-Moran & Hoy, 2001). Despite this, past studies predominantly assessed global constructs, which may have masked important aspects. For example, knowing whether reservations are more about feelings or beliefs about inclusive education or in which area teachers feel most or least self-efficacious makes a big difference in how to approach teacher attitudes or which aspects in teacher education should be especially focused on.

Accordingly, in the following section, we summarize findings on the relationship between attitudes and self-efficacy in the prediction of teacher intentions toward inclusive education; provide information about the education system and the status of inclusive education, teacher attitudes, and self-efficacy in each country; and conclude with the research questions and hypotheses.

### **Predicting Inclusive Intentions: Teacher Attitudes and Self-Efficacy**

Using the TPB (Ajzen, 1991) as a framework to predict inclusive teaching practices of teachers (e.g., adapting the curriculum to the needs of students with special education needs, including students with disabilities in the classroom, or collaborating with other professionals and parents) has been proven to be useful. Opoku et al. (2020) conducted a literature review on studies using this framework and highlighted the ability of the TPB to predict teachers' inclusive intentions. *Inclusive intentions* are posited to be best predictor of actual behaviour, that is, teachers' use of inclusive practices (Sharma & Mannan, 2015), and therefore intentions are often used as a proxy variable for the actual behaviour (which is often a more laborious and less feasible variable to investigate). Among the three predictors—attitudes, social norms, and perceived behavioural control (which is similar to the concept of self-efficacy [Bandura, 1977])—attitudes and self-efficacy have received the most attention within inclusive education research (e.g., van Steen & Wilson, 2020; Wray et al., 2022; Yada et al., 2022). Despite many studies in the area, the relationship of attitudes and self-efficacy to intentions remains unclear, as many studies have reported different prediction patterns. For example, in the study by Sharma et al. (2015) with pre-service teachers from the Solomon Islands, only attitudes ( $\beta = .24$ ), but not self-efficacy ( $\beta = .07$ ), significantly predicted teacher intentions to use inclusive practices. Similarly, in the study by Sharma et al. (2018) with in-service teachers from Australia and Italy, attitudes seemed

to be an equally strong (Australian sample:  $\beta = .26$ ) or much stronger (Italian sample:  $\beta = .51$ ) predictor than self-efficacy ( $\beta = .24$  and  $\beta = .20$ , respectively). The same pattern was found in the study by Hellmich et al. (2019) with a sample of in-service teachers from Germany, in which attitudes were a better predictor ( $\beta = .31$ ) of teacher intentions than self-efficacy ( $\beta = .19$ ), and in a study by Sahli Lozano et al. (2021) with in-service teachers from Switzerland (attitudes:  $\beta = .51$ ; self-efficacy:  $\beta = .19$ ). In contrast, in the same study, self-efficacy was the stronger predictor for teachers from Australia (attitudes:  $\beta = .23$ ; self-efficacy:  $\beta = .32$ ). Several other studies have reported self-efficacy to be the stronger predictor as well: for example the study by Song et al. (2019) with pre-service teachers from South Korea (self-efficacy:  $\beta = .50$ , attitudes:  $\beta = .34$ ), the study by Wilson et al. (2019) with in-service teachers from Scotland (self-efficacy:  $\beta = .46$ , attitudes:  $\beta = .14$ ), or the study by Yan and Sin (2014) with in-service teachers from Hong Kong (self-efficacy:  $\beta = .25$ , attitudes:  $\beta = .15$ ). In the study by Sharma et al. (2021) with pre-service teachers from Australia, Canada, India, and Hong Kong, self-efficacy emerged as a stronger predictor than attitudes (self-efficacy:  $\beta = .52$ , attitudes:  $\beta = .17$ ), and this was the case in all subsamples. Some studies also examined subcomponents of attitudes and self-efficacy. In two studies by MacFarlane and Woolfson (2013) and Wilson et al. (2016) with in-service teachers from Scotland, self-efficacy was a stronger predictor ( $\beta = .37$  and  $.50$ , respectively) than beliefs ( $\beta = .25$  and  $.28$ ) and especially feelings ( $\beta = .08$  and  $.06$ ). Note, however, that this list of results is purely descriptive, as these studies did not test for significance of differences in the predictive strength of attitudes and self-efficacy.

In summary, while most studies have found that both attitudes and self-efficacy explain significant variance in teachers' intentions to use inclusive practices, findings regarding their relative contributions seem to be inconsistent. Although many factors could contribute to these differences (such as differences in the sample characteristics, e.g., pre-service teachers vs. in-service teachers, or in methodology or instruments used), country-specific differences such as cultural factors and differences in the implementation of inclusive education policies and practices are likely to be the more relevant aspects. In the next section, we briefly describe the education system, inclusive education policies, and teacher perspectives on inclusion in five western countries.

## **Canada**

In Canada, the education system is organized at the provincial and territorial level, with each province and territory responsible for its own education policies and practices. Although there is no federal educational policy for all students with disabilities, all provinces and territories have inclusion within their mandate (Specht & Thompson, 2022). The Canadian Charter of Rights and Freedoms (1982), along with other laws preventing discrimination against individuals with disabilities (e.g., Canadian Human Rights Act), has influenced inclusive education policies throughout the nation (Specht & Thompson, 2022). Over the years, Canada has been considered a best-practice example of inclusive education reform (Merz-Atalik, 2022). For example, the province of New Brunswick had already initiated its policy of full educational inclusion in the 1980s, which is reflected in legislation, local-authority policies, and professional guidelines (Simón et al., 2022). However, inclusive practices vary across provinces, with each province having its own philosophies, policies, and practices (Loreman et al., 2014).

Canadian teachers are usually found to have positive attitudes and high self-efficacy regarding teaching in inclusive classrooms. For example, in the meta-analysis from van Steen and Wilson (2020), effect sizes of teacher attitudes (measured as standardized deviations from the neutral point of a given scale) of Canadian teachers were considerably higher compared to effect sizes from studies involving teacher samples from a wide range of other countries. In direct cross-national comparative studies, Canadian teachers demonstrated more positive attitudes toward inclusive education than teachers from Australia, Germany, Greece, Singapore, and Switzerland (Miesera et al., 2021; Sharma et al., 2006, 2023); greater intentions to use inclusive practices than teachers from Germany, Greece, and Switzerland (Miesera et al., 2021; Sharma et al., 2023); and stronger self-efficacy beliefs than teachers from Italy and Switzerland (Sharma et al., 2023).

### **Germany**

The education system in Germany has a long tradition of educational tracking that dates back to the 19th century. From fifth grade onward, academic grammar schools (Gymnasien) that lead to the general qualification for university entrance compete for academically gifted students from comprehensive schools in all the German federal states. Likewise, the special education system in Germany has a long tradition of separation of students with special educational needs (SEN) in special schools according to the specific type of disability or need, such as learning disabilities, speech impairments, visual or hearing impairments, physical disabilities, or emotional and social development needs. However, efforts toward inclusive education and the promotion of equal participation for students with SEN have been made, drawing from the recommendations on SEN in the schools of the Federal Republic of Germany (Kultusministerkonferenz, 1994) and the ratification of the Convention on the Rights of Persons with Disabilities (UNCRPD; United Nations [UN] General Assembly, 2006) in 2009. Due to Germany's federal governance system, the implementation of inclusive education varies among the 16 federal states (Länder) of Germany, as education is primarily a state responsibility, and there are differences in the progress of inclusive education among them. In Germany, 4.3% of all students are being taught in separate special schools or special classes (Kultusminister Konferenz, 2022).

In the study by Miesera et al. (2021), German teachers had more negative attitudes and lower intentions than Canadian teachers but reported equal self-efficacy in using inclusive practices.

### **Greece**

Greece has a highly centralized education system. In line with the Salamanca Statement (United Nations Educational, Scientific and Cultural Organization & Spain Ministry of Education and Science, 1994) and with the ratification of the UNCRPD (UN General Assembly, 2006) in 2012, the integration of students with SEN in mainstream schools has gained importance in Greece in the last 30 years. This is reflected in policy initiatives such as the Education Law 2817/2000 (Greek Government, 2000), which recognizes the right of children with SEN to access mainstream schools and curricula and advocates for modifications to the classroom environment and curriculum. Recent statistics

indicate that only 1.02% of students are being placed in separated settings (Ramberg et al., 2020). In Greece, inclusion primarily occurs via “inclusion units” in regular schools, where students with SEN receive individualized tuition for a maximum of 2 hours daily. These units are managed by specialized teachers holding qualifications in special education. More recently, special education teachers have been deployed in schools to provide learning support to individual students with SEN within their regular class to enable their access to the general curriculum. Despite the positive policy developments, Greece faces significant hurdles in achieving full inclusion. These challenges include the establishment of new organizational structures, curriculum differentiation, the reform of the educational environment, the persistence of a medical perspective that emphasizes individual deficits in students with SEN, and the reluctance of teachers to adopt innovative inclusive practices (Avramidis et al., 2019).

Previous studies on Greek teachers’ attitudes or self-efficacy regarding inclusion have found that teachers hold mixed views. In one study by Charitaki et al. (2022), Greek teachers were found to have more positive attitudes than teachers from the United Kingdom, Turkey, the United States, and Malaysia. In the study of Sharma et al. (2023), Greek teachers had less positive attitudes and lower intentions to use inclusive practices compared to teachers from Canada and Italy but held more positive attitudes and higher intentions than teachers from Switzerland. Regarding self-efficacy, Greek teachers held higher self-efficacy beliefs than teachers from Italy and Switzerland and equally high self-efficacy beliefs as Canadian teachers.

### ***Italy***

The school context in Italy is seen as one of the most inclusive among European countries (Aiello et al., 2018). Starting in 1971, the Italian regulatory system established a comprehensive framework that mandated the elimination of specialized classes and the integration of “handicapped pupils” into regular primary and middle-school classes. In 1977, the enactment of Law 517 introduced the position of the “special needs teacher,” primarily responsible for facilitating the involvement of students with disabilities within mainstream classrooms (European Agency for Special Needs and Inclusive Education, 2016). Over the past four decades, there has been a progression of decrees aimed at implementing inclusive practices in schools (De Anna et al., 2015). Notable among these is Law 104/1992, which mandates the complete integration of students, and Decree 66, which strengthens the focus on individualized education plans (European Agency for Special Needs and Inclusive Education, 2021). As a consequence, practically all students with SEN are taught in regular schools, with an extremely low separation rate of 0.03% (Ramberg et al., 2020).

Due to the long history of inclusion, numerous research studies have explored the attitudes of Italian educators toward inclusion over the past decades (e.g. Cornoldi et al., 1998; Saloviita & Consegna, 2019; Zambotti & Demo, 2011). Italian teachers have always demonstrated very positive attitudes toward inclusive education, possibly due to Italy’s rich history of inclusivity (Sharma et al., 2018). In cross-national comparisons, Italian teachers have shown more positive attitudes than Australian, Austrian, Canadian, Greek, and Swiss teachers and higher intentions to use inclusive practices than Australian,

Greek, and Swiss teachers (Hecht et al., 2018; Sharma et al., 2018; Sharma et al. 2023). In contrast, Italian teachers have held lower self-efficacy beliefs than Australian, Canadian, and Greek teachers (Sharma et al., 2018; Sharma et al., 2023). However, results seem to be domain-specific since, in a study by Hecht et al. (2018), Italian teachers showed lower self-efficacy regarding managing behaviour, equal self-efficacy regarding inclusive instructions, and higher self-efficacy regarding collaboration than Austrian teachers.

## **Switzerland**

The Swiss education system is characterized by a high degree of selectivity (Organisation for Economic Co-operation and Development [OECD], 2017). After attending regular schools together until the sixth grade, students are segregated into different tracks according to their academic performance (OECD, 2017). Switzerland has a highly specialized special-school system (Hollenweger, 2016). Since 2004, the Disability Equality Act (BehiG) has mandated that integrative forms of schooling be given priority over segregative ones. In 2014, Switzerland ratified the UNCRPD (UN General Assembly, 2006). However, it has not accepted the Optional Protocol (UN, 2007), thus denying individuals the possibility of lodging complaints. Individual schools retain the ultimate authority to decide whether children, especially those with severe cognitive or multiple disabilities, can attend mainstream schools (Hollenweger, 2016). Over the past two decades, Switzerland has made some progress toward a more inclusive school system by progressively abandoning separated special classes in mainstream schools. However, significant regional disparities exist due to the country's federal structure. Between 2005 and 2020, educational segregation decreased from 5.3% to 3.2% (Bundesamt für Statistik, 2020). However, this progress seems to have stalled in the last decade. A possible reason for this stagnation is the simultaneous decrease in the number of pupils in special classes (for pupils with mild disabilities) and the increase in the number of pupils in special schools (for pupils with more severe disabilities; Bundesamt für Statistik, 2020).

In general, teacher attitudes toward inclusive education tend to range from neutral to moderately positive. This variation is associated with factors such as teachers' experience, teacher education, characteristics of the school environment, and involvement in inclusive settings (Abegglen & Hessels, 2018). In cross-national comparisons, Swiss educators usually demonstrate more negative attitudes toward inclusion than other countries. For example, in one study, they had significantly more negative attitudes to inclusive education than their Australian counterparts. They expressed lower self-efficacy and had lower intentions to use inclusive practices (Sahli Lozano et al., 2021). Compared to teachers from Canada, Greece, and Italy, they displayed the most negative attitudes and the lowest intentions to use inclusive practices (Sharma et al., 2023). They also displayed lower self-efficacy compared to teachers from Canada and Greece.

## **Research Questions**

Based on the ambiguous results of previous studies, we aimed to investigate whether there are significant cross-national differences in the prediction of inclusive teacher intentions by teacher attitudes and self-efficacy.

Since (a) country-specific differences in attitudes, self-efficacy, and teacher intentions themselves may be associated with differences in prediction patterns and (b) cross-national comparative studies have found meaningful differences in the past, we also investigated differences regarding attitudes, self-efficacy, and intentions among teachers from the five countries (Canada, Germany, Greece, Italy, and Switzerland), while ensuring for the measurement invariance of the scales. Also, because attitudes and self-efficacy include subcomponents, we investigated whether attitude (beliefs and feelings) and self-efficacy (self-efficacy in inclusive instructions, managing behaviour, and collaboration) subcomponents had differential effects in the prediction of teachers' inclusive intentions.

## **Method**

### **Sample**

In all five countries, teacher data were collected using the same standardized online survey items translated into different languages (English, German, Italian, and Greek) and sent out to schools. Due to limited resources or legal restrictions, the sampling process differed across countries and included convenience samples. The inclusion criteria for participants for the subsequent analyses included being a regular primary or lower secondary school teacher. Student teachers, special education teachers, or other professionals and teachers working in upper secondary school were filtered out.

Canadian teachers were recruited by sending the link to the online survey to selected school principals from rural and urban areas in the provinces of Alberta and British Columbia, who were asked to forward the link to their respective teachers. A total of 312 persons filled out the questionnaire, of whom 283 matched the inclusion criteria.

German teachers were recruited by sending the link to the online survey to school principals of randomly chosen inclusive primary and secondary schools in the state of North Rhine-Westphalia, who were asked to forward the link to their respective teachers. A total of 331 persons filled out the questionnaire, of whom 255 matched the inclusion criteria.

Greek teachers were recruited by sending a link to the online survey to school principals of randomly selected schools located in a central region of Greece. These schools operated resource units catering to students with SEN. Eligible for participation were general teachers working in the selected schools. A total of 200 persons filled out the questionnaire, of whom all matched the inclusion criteria.

Italian teachers were recruited from members of a full-time program aiming at a certified qualification with regard to inclusive teaching. A total of 861 persons filled out the questionnaire, of whom 325 matched the inclusion criteria (only teachers just entering the program were considered appropriate for the purpose of the study).

Swiss teachers were recruited by sending the link to the online survey to school principals from a pool of 200 randomly chosen primary and secondary schools in the German-speaking part of Switzerland, who were asked to forward the link to their respective teachers. A total of 221 persons filled out the questionnaire, of whom 144 matched the inclusion criteria. The data were part of a publicly available dataset that

included data from regular and special education teachers (Sahli Lozano & Wüthrich, 2023).

Sample characteristics are shown in Table 1. The study was approved by the local institutional review boards of the respective universities.

**Table 1**  
**Sample Characteristics of the Five Countries**

Variable	CA		GER		GR		IT		CH	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Total	283	100	255	100	200	100	325	100	144	100
Sex <sup>a</sup>										
Female	213	75.3	192	75.3	138	69.0	285	87.7	112	77.8
Male	58	20.5	55	21.6	60	30.0	40	12.3	31	27.7
Age <sup>b</sup>										
< 30 years	53	18.7	34	13.3	44	22.0	56	17.2	37	25.7
30–40 years	90	31.8	73	28.6	39	19.5	114	35.1	34	23.6
> 40 years	140	49.5	146	57.3	117	58.5	155	47.7	73	50.7
Teaching level <sup>c</sup>										
Primary	174	61.5	85	33.3	200	100	149	45.8	110	76.4
Good Secondary	99	35.0	170	66.7	0	0	176	54.2	34	23.6

*Note.* Cell counts that do not sum to 100% are due to missing values. CA = Canada; GER = Germany; GR = Greece; IT = Italy; CH = Switzerland.

<sup>a</sup> For the variable sex, there were 12 missing values in the Canadian sample, 8 in the German sample, 2 in the Greek sample, and 1 in the Swiss sample. <sup>b</sup> For the variable age, there were 2 missing values in the German sample. <sup>c</sup> For the variable teaching level, there were 10 missing values in the Canadian sample.

## Instruments

A questionnaire adapted from Sharma et al. (2018) was used to assess teachers' attitudes, self-efficacy, and intentions to use inclusive practices. Sociodemographic as well as profession-related background information from the participants (gender, age, teaching experience in years, and teaching level) were also collected. The survey has widely been used internationally. For this study, translations were provided in Greek, and earlier translated versions were utilized as a starting point for the other languages (German: Gebhardt et al., 2018; Italian: Sharma et al., 2018).

Teacher attitudes were assessed using the Attitude to Inclusion Scale (AIS; Sharma & Jacobs, 2016) with its two subfactors, (a) beliefs and (b) feelings regarding inclusive education. Teacher self-efficacy was assessed using the short form of the Teachers' Self-Efficacy for Inclusive Practices scale (TEIP-SF; Sahli Lozano et al., 2023; Sharma et al., 2012) with its three subfactors: (a) efficacy in inclusive instructions, (b) efficacy in managing behaviour, and (c) efficacy in collaboration. Teacher intentions were assessed using the Intention to

Teach in Inclusive Classroom Scale (ITICS; Sharma & Jacobs, 2016) with its two subfactors: intentions to (a) change curriculum and to (b) consult. Scale characteristics are shown in Table 2.

**Table 2**  
**Scale Characteristics**

	<b>Attitude to Inclusion Scale (AIS)</b>	<b>Teachers' Self-Efficacy in Inclusive Practices Scale (TEIP-SF)</b>	<b>Intention to Teach in Inclusive Classroom Scale (ITICS)</b>
Subscale names (Number of items)	Beliefs regarding inclusive education (4), feelings regarding inclusive education (4)	Efficacy in inclusive instructions (3), efficacy in managing behaviour (3), efficacy in collaboration (3)	Intentions to change curriculum (4), intentions to consult (3)
Likert scale	7-point	6-point	7-point
Reliability (min./max.)	$\alpha = .78$ (ITA) $\alpha = .93$ (CAN)	$\alpha = .77$ (SUI) $\alpha = .87$ (CAN)	$\alpha = .78$ (SUI) $\alpha = .93$ (GRE)
Example items	"I believe that all students, regardless of their ability, should be taught in regular classrooms." "I am excited to teach students with a range of abilities in my class."	"I am able to provide an alternate explanation, for example, when students are confused." "I can control disruptive behaviour in the classroom." "I am able to work jointly with other professionals and staff (e.g., aides, other teachers) to teach students with disabilities in the classroom."	"How likely will you be to change the curriculum to meet the learning needs of a student with a learning difficulty enrolled in your class?" "How likely are you to consult with the parents of a student who is struggling in your class?"

## Data Analysis

The analyses included the following steps: (1) testing the proposed factor structure of each scale in each of the five samples using confirmatory factor analyses (CFA) and, in cases of inadequate model fit, modification of the structural models (e.g., correlating error terms, excluding problematic items) to reach adequate model fit in all samples; (2) assessing configural, metric, and scalar invariance using multiple group confirmatory factor analysis (MGCFA); and (3) testing for differences in the relationships across the five samples.

For Step 1, CFAs were conducted using Mplus version 8.10 (Muthén & Muthén, 2017) to evaluate the overall model fit of the proposed original factor solutions for each scale and each sample separately. As a result of the non-normal distribution of the data, the maximum likelihood with robust standard errors (MLR) estimator was used to estimate the model parameters for all scales. To assess the overall model fit, we employed the comparative fit index (CFI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR), following the conventions proposed by Hu & Bentler (1999). Model fit was considered acceptable when  $RMSE < .08$ ,  $CF > .90$ , and  $SRMR < .08$ .

If the model fit did not meet the acceptable criteria for the individual samples, adjustments to the measurement models were made using the modification indices provided by Mplus until an acceptable model fit was achieved. If an acceptable fit could not be reached for an individual country even after modifications, the country data were discarded for subsequent analyses.

For Step 2, MGCFA was conducted for each scale to assess measurement invariance (configural, metric, and scalar) across the samples. The demonstration of measurement invariance is essential to ensure that the scales measure the same latent constructs across the different samples. This is crucial because differences in scores between samples could otherwise be attributed to measurement differences rather than actual differences across the samples. In metric-invariance models, the factor loadings between the items and the latent variable are constrained to be equal across samples. Scalar-invariance models also constrain the item intercepts to be equal. Metric invariance allows for meaningful comparisons of relationships between latent constructs, while scalar invariance permits meaningful comparisons of latent means across samples (Cieciuch & Davidov, 2015). For the following analyses (comparison of relationships across latent constructs), at least metric invariance needed to be achieved.

To test for measurement invariance, the fit of the more restricted model is compared with the fit of the less restricted model (e.g., metric-invariance model vs. configural-invariance model). If the fit is not significantly different, then the invariance assumptions are considered met. Chen's (2007) criteria for comparison were employed: a change ( $\Delta$ ) in  $RMSEA < .015$ ,  $\Delta CFI < .010$ , and  $\Delta SRMR < .030$  when moving from the configural to the metric level indicates metric measurement invariance, and a  $\Delta RMSEA < .015$ ,  $\Delta CFI < .010$ , and  $\Delta SRMR < .010$  when moving from the metric to the scalar level indicates scalar measurement invariance. If full invariance could not be established, we conducted stepwise tests for partial invariance by freeing either the factor loadings (for partial metric invariance) or intercepts (for partial scalar invariance) of non-invariant items, guided by the modification indices in Mplus. To establish partial invariance, the loadings and intercepts of at least two items per construct must be equal across groups, as recommended by Cieciuch and Davidov (2015). Partial invariance, as suggested by Byrne et al. (1989) and Steenkamp and Baumgartner (1998), is considered sufficient for meaningful cross-group comparisons.

Another method to ensure comparability of constructs across samples is to use the alignment method. Alignment is a more convenient and flexible method that can automatically estimate the factor mean and variance parameters in each sample while considering the most optimal measurement-invariance pattern. The method incorporates a simplicity function similar to the rotation criteria used with exploratory factor analysis (Asparouhov & Muthén, 2014) and was recently extended for use in structural equation models (Asparouhov & Muthén, 2023). Here, the alignment method was used in addition to the traditional measurement-invariance procedure to cross-validate results and to provide opportunities for interpretation in case the stricter measurement-invariance models did not meet acceptable-fit criteria.

In the third and final step, a multi-group structural equation model with the intention factors Change Curriculum and Consult as the endogenous variables and the attitude factors

Beliefs and Feelings and the self-efficacy factors Instructions, Managing Behaviour, and Collaboration as exogenous variables was calculated. Significant differences across samples for (a) the latent means and (b) the prediction of the intention factors were assessed by setting equality constraints on the respective intercepts/paths and comparing the model fit with the unrestricted model (chi-square difference test for MLR estimator, Satorra-Bentler corrected).

## Results

### Descriptive Results

Raw (manifest) mean scores for the different subscales are shown in Table 3.

### Step 1: Confirmatory Factor Analyses for Each Scale and Country

Initial CFAs indicated problems with the ITICS scale. Correlations between the two subfactors Curriculum Change and Consulting were very high in all samples (ranging from .86 to .96) and yielded a correlation greater than 1 in the German sample. A reconsideration of the factor structure using exploratory factor analyses with parallel analysis indicated a single factor in all samples. After using a one-factor structure and correlating error variances of Item 1 with those of Item 7 and correlating those of Item 3 with those of Item 5 according to modification indices, an acceptable fit was reached for all five samples. The AIS required only minimal modifications: modification indices suggested a correlation of error variances in two item pairs of the subfactor Feelings (Item 6 with Item 5 and Item 7). For the TEIP-SF scale, no modifications were required. However, for both the AIS and TEIP-SF, adequate model fit could not be reached for the Greek sample, with RMSEA being unacceptably high (0.116 and 0.113). On account of this, and after cross-checking with the alignment approach, we decided to exclude the Greek sample from further analysis. Fit indices for the individual scales and countries are shown in Table 4.

**Table 3**  
*Raw Mean Scores for Attitudes, Self-Efficacy, and Intentions*

Country	AIS <sup>a</sup>		TEIP-SF <sup>b</sup>			ITICS <sup>a</sup>
	<i>M (SD)</i>		<i>M (SD)</i>			<i>M (SD)</i>
	BEL	FEEL	INS	MB	COL	
CA	5.54 (1.43)	5.96 (1.29)	5.34 (0.66)	4.84 (0.89)	5.04 (0.80)	6.39 (0.67)
GER	4.30 (1.45)	4.52 (1.40)	4.86 (0.84)	4.45 (0.89)	4.12 (0.99)	5.76 (0.83)
GR	5.41 (1.02)	5.41 (1.13)	5.02 (0.69)	4.89 (0.63)	4.88 (0.82)	5.89 (0.97)
IT	6.62 (0.59)	6.54 (0.70)	4.81 (0.64)	4.02 (0.87)	4.96 (0.77)	6.30 (0.70)
CH	3.73 (1.55)	4.62 (1.25)	4.64 (0.73)	4.68 (0.86)	4.32 (1.09)	4.95 (0.87)

*Note.* AIS = Attitude Toward Inclusion Scale; TEIP-SF = Teacher Efficacy for Inclusive Practices – Short Form; ITICS = Intentions to Teach in Inclusive Classroom Scale; BEL = Beliefs; FEEL = Feelings; INS = Instructions; MB = Managing Behaviour; COL = Collaboration; CUR = Change Curriculum; CONS = Consulting; CA = Canada; GER = Germany, GR = Greece; IT = Italy; CH = Switzerland. <sup>a</sup> Scale range = 1–7. <sup>b</sup> Scale range = 1–6.

**Table 4**  
*Fit Indices for the Individual Scales and Samples*

Country	AIS <sup>a</sup>			TEIP-SF			ITICS <sup>b</sup>		
	CFI	RMSEA	SRMR	CFI	RMSEA	SRMR	CFI	RMSEA	SRMR
CA	1.000	0.000	0.020	0.991	0.032	0.037	1.000	0.000	0.026
GER	1.000	0.000	0.014	0.966	0.061	0.048	0.992	0.026	0.030
GR	0.927	0.116	0.070	0.907	0.113	0.060	0.978	0.071	0.033
IT	0.905	0.065	0.055	0.974	0.048	0.038	0.972	0.049	0.028
CH	0.976	0.063	0.044	0.977	0.044	0.050	0.938	0.077	0.049
MGCFA	0.986	0.043	0.038	0.978	0.047	0.042	0.986	0.037	0.032

*Note.* AIS = Attitude toward Inclusion Scale; TEIP-SF = Teacher Efficacy for Inclusive Practices – Short Form; ITICS = Intentions to Teach in Inclusive Classroom Scale; CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; MGCFA = multi-group confirmatory factor analysis; CA = Canada; GER = Germany; GR = Greece; IT = Italy; CH = Switzerland.

<sup>a</sup> For the AIS scale, error variances of Item 6 with those of Item 5 and Item 7 were correlated. <sup>b</sup> The ITICS scale was modelled using a one-factor structure, and error variances between Item 1 and Item 7 and between Item 3 and Item 5 were correlated.

### Step 2: Assessment of Measurement Invariance

The initial configural MGCFA, using the four samples from Canada, Germany, Italy, and Switzerland, yielded an acceptable fit for all scales. Comparison with the metric-invariance models indicated non-invariance of loading patterns across samples for the AIS and the ITICS, while the TEIP-SF yielded full metric invariance. To reach partial metric invariance in the AIS and ITICS, equality constraints of the loadings of one item in the subfactor Feelings (Item 6) of the AIS had to be released, while for the ITICS, loadings of four items (Items 3–6) had to be released. Full scalar invariance was not achieved by any of the AIS, TEIP-SF, or ITICS. While partial scalar invariance could be achieved for the ITICS by releasing equality constraints of the intercepts of Items 1, 4, and 5, partial scalar invariance could not be achieved for the AIS and the TEIP-SF subfactors (see Table 5).

The alignment method, which was used for cross-validation purposes, worked well, as all loadings on all factors were invariant after alignment. Also, 12.5% of the intercepts were found to be non-invariant, well below the critical threshold of 20% that has been proposed by Asparouhov and Muthén (2014), allowing for comparison of latent means across the samples.

**Table 5**  
**Assessment of Measurement Invariance**

Scale	Model	$\chi^2$ (df)	CFI	RMSEA	SRMR	VS	$\Delta\chi^2$ ( $\Delta df$ )	$\Delta CFI$	$\Delta RMSEA$	$\Delta SRMR$	Result
AIS	M1 (CI)	99.4 (68)	0.986	0.043	0.038	–	–	–	–	–	–
	M2 (MI)	117.9 (86)	0.986	0.038	0.070	M1	18.5 (18)	0.000	–0.005	0.032	Reject
	<b>M3 (PMI)</b>	<b>110.2 (83)</b>	<b>0.988</b>	<b>0.036</b>	<b>0.060</b>	<b>M1</b>	<b>10.8 (15)</b>	<b>–0.002</b>	<b>–0.007</b>	<b>0.022</b>	<b>Accept</b>
	M4 (SI)	256.3 (101)	0.930	0.078	0.102	M3	146.1 (18)	0.058	0.042	0.042	Reject
	M5 (PSI)	138.2 (89)	0.978	0.047	0.071	M3	28.0 (6)	0.010	0.011	0.011	Reject
TEIP-SF	M1 (CI)	150.8 (96)	0.978	0.047	0.042	–	–	–	–	–	–
	<b>M2 (MI)</b>	<b>175.7 (114)</b>	<b>0.975</b>	<b>0.046</b>	<b>0.071</b>	<b>M1</b>	<b>24.9 (28)</b>	<b>0.003</b>	<b>–0.001</b>	<b>0.029</b>	<b>Accept</b>
	M3 (SI)	445.0 (132)	0.871	0.097	0.115	M2	269.3 (18)	0.104	0.051	0.044	Reject
	M4 (PSI)	267.6 (123)	0.940	0.068	0.086	M2	91.9 (9)	0.035	0.022	0.015	Reject
ITICS	M1 (CI)	64.3 (48)	0.989	0.037	0.032	–	–	–	–	–	–
	M2 (MI)	118.3 (66)	0.956	0.056	0.161	M1	54.0 (18)	0.033	0.019	0.129	Reject
	M3 (PMI)	69.0 (54)	0.987	0.033	0.046	M1	4.7 (6)	0.002	0.004	0.014	Accept
	M4 (SI)	250.9 (72)	0.850	0.099	0.106	M3	181.9 (18)	0.137	0.066	0.060	Reject
	<b>M5 (PSI)</b>	<b>78.7 (63)</b>	<b>0.987</b>	<b>0.032</b>	<b>0.052</b>	<b>M3</b>	<b>9.7 (9)</b>	<b>0.000</b>	<b>–0.001</b>	<b>0.006</b>	<b>Accept</b>

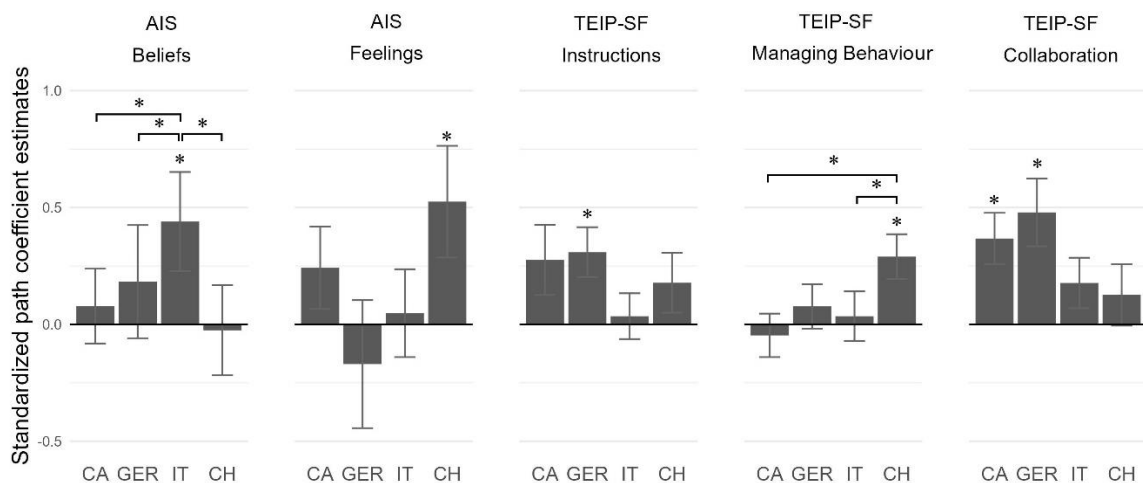
*Note.* Highest achieved measurement level in bold. Cut-off criteria for demonstration of measurement invariance:  $\Delta CFI \leq .010$ ,  $\Delta RMSEA \leq .015$  and  $\Delta SRMR \leq .030/.010$  (metric invariance / scalar invariance). CI = configural invariance; MI = metric invariance; SI = scalar invariance; PMI = partial metric invariance; PSI = partial scalar invariance; CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean residual; VS = reference model.

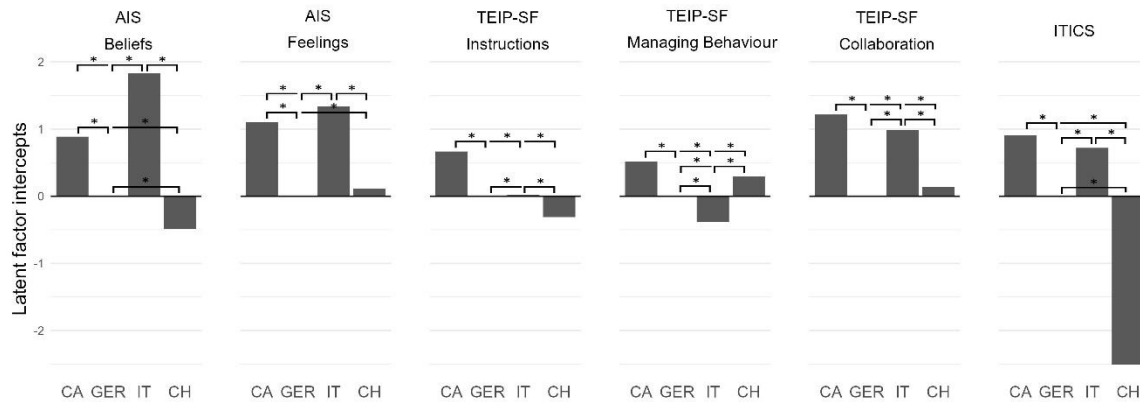
### Step 3: Prediction of Intentions and Comparison of Latent Means

Because partial measurement invariance was achieved for four of the five teacher samples for all scales, comparisons of relationships across latent variables are meaningful. Using the respective equality constraints, a MGCFA model with Beliefs and Feelings regarding inclusion, and Inclusive Instructions, Managing Behaviour, and Collaboration regarding self-efficacy as predictors of teachers' intentions to use inclusive practices yielded an acceptable to good model fit (CFI = 0.95, RMSEA = 0.042, and SRMR = 0.061). The standardized estimates of the path coefficients are shown in Figure 1. Significant differences in the predictors across groups emerged for the attitude component Beliefs ( $\Delta\chi^2 = 14.54$ ,  $\Delta df = 3$ ,  $p < .01$ ) and the self-efficacy component Managing Behaviour ( $\Delta\chi^2 = 21.48$ ,  $\Delta df = 3$ ,  $p < .001$ ). Beliefs was a significant predictor of intentions in the Italian teacher sample, and its estimated path coefficient was significantly higher than for the Canadian, German, and Swiss teacher samples. Likewise, Managing Behaviour was a significant predictor in the Swiss teacher sample, and its estimated path coefficient was significantly higher compared to the Canadian and the Italian samples. For the other predictors (attitude component Feelings and self-efficacy components Inclusive Instructions and Collaboration), no significant group differences emerged. Overall, self-efficacy for Collaboration was the most consistent and strongest predictor of intentions (minimum:  $\beta = .13$ , Swiss sample; maximum:  $\beta = .48$ , German sample). The same analyses with the alignment method yielded almost identical results to the stepwise measurement-invariance method (maximum difference in standardized estimates = 0.063; average difference = 0.012).

In contrast to the traditional stepwise measurement-invariance method, which failed to demonstrate (partial) scalar invariance, the alignment method also allowed for comparison of latent means across the samples. Here, the Italian teacher sample displayed the highest values for Beliefs and Feelings, followed by the Canadian teacher sample. In contrast, the Canadian teacher sample displayed the highest self-efficacy values in all domains. Regarding intentions, the Canadian and the Italian teacher samples displayed the highest values (see Figure 2).

**Figure 1: Prediction of Teacher Intentions Across Countries: Standardized Path Coefficient Estimates**



**Figure 2: Latent Factor Intercepts**

## Discussion

The current study aimed to address the question of whether teacher attitudes or self-efficacy regarding inclusion serves as a stronger predictor of teacher intentions to use inclusive practices. While many studies have assessed the strength of attitudes and self-efficacy in predicting teacher intentions using teacher samples from around the world (e.g. Hellmich et al., 2019; Sahli Lozano et al., 2021; Song et al., 2019; Wilson et al., 2019; Yan & Sin, 2014), there are hardly any studies that have made cross-national comparisons in a systematic way. This study was the first to investigate prediction patterns across five western countries (Canada, Germany, Greece, Italy, and Switzerland) while considering the measurement invariance of scales used in the different contexts and the potential differential effects of attitude and self-efficacy components.

When conducting cross-national comparisons, it is essential to investigate the measurement invariance of the scales employed. This process ensures that the scales accurately measure the same latent constructs across different countries. The importance of this lies in preventing potential misinterpretations arising from variations in language translations, cultural nuances, or contextual disparities. Regrettably, the Greek sample had to be excluded from further analysis due to issues encountered with the attitude and self-efficacy scales. Specifically, initial CFAs for these scales did not confirm the hypothesized factor structures, suggesting a divergence in how items related to their respective factors. It is important to note that this finding does not imply that data on attitudes and self-efficacy regarding inclusive education from Greek teachers are inherently incomparable to that of teachers from other countries. Rather, it indicates that, in this instance, the constructs measured within the Greek teacher sample did not correspond effectively to those measured in other countries. This discrepancy may have stemmed from various causes, including potential inaccuracies in the translation of the scales, issues unique to the Greek sample such as poor data quality, or distinct aspects of the educational context in Greece.

Consequently, in the following paragraphs, differences in attitudes, self-efficacy, and teacher intentions across the four countries (Canada, Germany, Italy, and Switzerland) are

discussed. In the next step, commonalities and differences in the relationship between teacher attitudes, self-efficacy, and intentions to use inclusive practices are identified.

### **Differences in Attitudes, Self-Efficacy, and Intentions to Use Inclusive Practices**

Previous research has shown that large cross-national differences in teacher attitudes, self-efficacy, and intentions exist, which might also relate to differences in prediction patterns of teacher intentions. In this regard, the results of this study align with earlier findings (e.g., Sharma et al., 2018; Sharma et al., 2023): In our samples, Canadian and Italian teachers were found to have highly positive attitudes and intentions to use inclusive practices, especially compared to teachers from other countries such as Germany and Switzerland. Italian teachers had the most positive beliefs and feelings toward inclusive education overall. Canadian teachers also had high self-efficacy beliefs, whereas Italian teachers' self-efficacy beliefs were strongly context-dependent: they had high self-efficacy beliefs in collaboration but the lowest self-efficacy beliefs in managing challenging behaviour. Again, these result patterns are highly similar to earlier findings (e.g., Hecht et al., 2018). Swiss teachers, however, had relatively high self-efficacy beliefs in managing challenging behaviour (significantly higher than Italian and German teachers) but less so in using inclusive instructions or in collaboration. Furthermore, they had the most negative beliefs, the lowest self-efficacy beliefs in inclusive instructions, and the lowest intentions to use inclusive practices among the different teacher samples.

### **Differences in the Prediction Patterns for Inclusive Teacher Intentions**

Past studies have reported inconsistent findings regarding the relationship between attitudes, self-efficacy, and teacher intentions in inclusive education. These inconsistencies could stem from various factors, including differences in methodologies or instruments, as well as country-specific variations like cultural factors and the implementation of inclusive education policies and practices. The results of this study suggest that country-specific differences, rather than methodological issues, are likely the cause of these inconsistent patterns. In other words, for at least some components of attitudes and self-efficacy, predictor strength depended on the given country. Significant differences in the prediction of inclusive teacher intentions were found for beliefs regarding inclusive education (more relevant for the Italian teacher sample than for those from the other countries) and self-efficacy in managing challenging behaviour (more relevant for the Swiss teacher sample than for the teachers from the other countries). That beliefs are the only significant predictor in the Italian sample aligns with the result of a previous study, in which attitude was as a stronger predictor than self-efficacy (Sharma et al., 2018). These findings might be attributed to Italy's historical commitment to inclusive education and the deep-rooted belief systems among teachers due to 45 years of experience with mainstream classrooms for all. The Italian teacher sample also had the most positive beliefs about inclusive education compared to those in other countries, and their highly positive intentions suggest that inclusive education is seen as a matter of course. Interestingly, the pattern is different for the Canadian teacher sample, who also had highly positive intentions. Here, self-efficacy predictors, especially self-efficacy in collaboration, seemed to be important.

The Canadian teacher sample also had higher self-efficacy beliefs than the Italian teacher sample. Over the years, Canada has been considered a best-practice example for inclusive education reform. So, although both the Italian and Canadian teacher sample had highly positive intentions, these might be explained differently: in the case of the Italian teachers by strong normative beliefs and in the case of the Canadian teachers by strong mastery experiences (Bandura, 1997).

That self-efficacy in managing challenging behaviour is an important predictor for the Swiss teachers might originate in the association of inclusive education with heightened classroom heterogeneity and classroom-management difficulties. According to a recent survey by the National Teacher Association in Switzerland, 34% of teachers reported having been physically or psychologically assaulted by their own students at least once in the previous 5 years (Brägger, 2022). At the same time, the media has often connected such numbers to the reduction of special education classes and an increase in students with behavioural disabilities in mainstream classrooms. Interestingly, in the Swiss sample, managing behaviour emerged as a significantly stronger predictor of teacher intentions than for the teachers in other countries. However, nominally, feelings toward inclusive education were the most influential predictor. This finding aligns with results from a previous study by Sahli Lozano et al. (2021), in which attitudes were identified as a stronger predictor than self-efficacy.

Comparing the Swiss and Italian teacher samples also demonstrates that different aspects of attitudes can be influential depending on the country. The Swiss teachers were more likely to be influenced by their emotional responses (as feelings were the most significant predictor of teacher intentions), indicating the importance of addressing emotional concerns related to inclusion in this context while, for the Italian teachers, their beliefs regarding inclusive education seemed to matter. Likewise, self-efficacy in managing challenging behaviour seemed unimportant across the different teacher samples (with the Swiss teachers being the only exception).

Similar to the Canadian teacher sample, self-efficacy in collaboration was a significant predictor in the German sample, in addition to self-efficacy in instructions. This contrasts with a study by Hellmich et al. (2019), where attitude appeared to be a stronger predictor than self-efficacy. However, in that study, self-efficacy was operationalized as the extent of belief that inclusive education is a collective endeavour, which may not have captured aspects of self-efficacy.

Overall, the attitude and self-efficacy components explained a substantial amount of variance in teacher intentions (60% in the Canadian sample, 56% in the German sample, 35% in the Italian sample, and 68% in the Swiss sample).

### **Self-Efficacy in Collaboration as an Important Predictor**

The findings point to differential roles of attitudes and self-efficacy in predicting teacher intentions across countries. However, it was interesting to observe that self-efficacy in collaboration was a relatively consistent predictor across all countries. Nominally, self-efficacy in collaboration was the strongest predictor of teacher intentions for the Canadian and German teachers, with no significant difference across countries and standardized coefficients ranging from .13 to .48. This suggests that teachers' confidence

in their ability to collaborate effectively with colleagues, specialists, parents, and support staff was a pivotal factor influencing their willingness to implement inclusive practices. This finding underscores the social nature of education and the recognition that inclusive practices often require collaborative efforts among educators with diverse expertise.

## **Limitations**

Some limitations should be noted in this study. First, due to limited resources or sampling restrictions in the respective countries, the study relied mostly on convenience samples. While this study investigated cross-national disparities in inclusive education, there also exist regional disparities within countries such as Canada, Germany, and Switzerland. Teachers in Canada were sampled from two provinces (Alberta and British Columbia), teachers in Germany from one federal state (North Rhine-Westphalia). Furthermore, the Italian teachers were already engaged in specialized training, which might indicate a predisposition toward inclusive education. Consequently, while the findings align well with previous country-specific observations on teachers' attitudes, self-efficacy, and intentions, they might not be wholly generalizable. Further research and replication are necessary to corroborate the findings.

Second, there are variations in teacher attitudes across countries, which appear to align with the state of inclusive education policies and practices. Although the TPB identifies social norms as a crucial predictor, this study did not incorporate this predictor. Previous literature (e.g., Hellmich et al., 2019; Yan & Sin, 2014) has also indicated the significance of social norms in predicting teacher intentions. The broader acceptance of inclusive education, possibly influenced by societal demand or support from school leadership and teams, requires further exploration in future research.

Third, a notable limitation arises from the high intention scores in the Italian and Canadian teacher samples. This potentially constrains the range and variability of responses, which may impact the interpretability and comparability of the findings, especially for the Italian teacher sample, which also exhibited near-ceiling effects in the attitude components. This limited variability might explain the smaller amount of variance explained ( $R^2 = .35$ ) in this sample. Future studies should consider incorporating more nuanced scales to investigate differences across countries with varying levels of progress in inclusive education.

Lastly, Opoku et al. (2020) observed an ambivalence in the relationship between inclusive intentions and behaviour across their reviewed studies. While some studies (e.g., Hellmich et al., 2019; Yan & Sin, 2014) reported a positive relationship, others (e.g., MacFarlane & Woolfson, 2013; Wilson et al., 2016) did not find a strong relationship. This suggests a potential discrepancy between self-reported intentions and classroom practices in practising inclusive education. Nonetheless, given that most of these studies relied on self-reported behaviour only, future inquiries should aim to integrate actual behavioural observations. Such an approach would provide interesting insights into the relationships between teacher attitudes, self-efficacy, intentions, and actual inclusive teacher behaviour.

## Implications and Future Directions

The results of this study point to three important insights: (a) there exist cross-national differences in the prediction of inclusive teacher intentions. Teacher attitudes are more central in some countries than in others, which may be explained by country-specific differences such as differences in the level of support provided to teachers in implementing inclusive practices or in teacher training; (b) considering domain-specific aspects in teacher attitudes and self-efficacy is vital in the prediction of teacher intentions, as not all aspects are equally strong predictors; (c) despite different national contexts, self-efficacy in collaboration seemed a relatively strong and consistent predictor of teacher intentions, which further highlights the importance of enhancing collaboration within the school community to foster inclusive practices.

This leads to important implications for teacher training and professional development programs, particularly in countries where inclusive education is still emerging. Fostering positive attitudes and enhancing self-efficacy, especially in collaboration with other key stakeholders, could be key components of such programs. Moreover, the study's cross-national comparisons offer valuable insights for policymakers and educators aiming to promote inclusive practices. Future research could delve deeper into the factors that shape attitudes and self-efficacy, considering the influence of policy implementation, cultural factors, and broader societal perspectives on education. Additionally, longitudinal studies could provide insights into how these relationships evolve over time as inclusive practices become more established.

In conclusion, this study underscores the intricate connections between teacher attitudes, self-efficacy, and intentions to use inclusive practices across different western countries. It emphasizes both differences and important commonalities. For instance, self-efficacy in collaboration is highlighted as a relatively strong and consistent predictor of teacher intentions. This offers valuable insights for educational policymakers, practitioners, and researchers striving to enhance inclusive education worldwide.

## References

- Abegglen, H., & Hessels, M. G. P. (2018). Measures of individual, collaborative and environmental characteristics predict Swiss school principals', teachers' and student teachers' attitudes towards inclusive education. *Psychoeducational Assessment, Intervention and Rehabilitation* 1(1), 1–24. [https://www.universiteitleiden.nl/binaries/content/assets/customsites/enpair/volume-1/abegglen\\_hessels\\_vol-1\\_issue1.pdf](https://www.universiteitleiden.nl/binaries/content/assets/customsites/enpair/volume-1/abegglen_hessels_vol-1_issue1.pdf)
- Aiello, P., Pace, E. M., Dimitrov, D. M., & Sibilio, M. (2018). A study on the perceptions and efficacy towards inclusive practices of teacher trainees. *Italian Journal of Educational Research*, 19, 13–28. <https://ojs.pensamultimedia.it/index.php/sird/article/download/2542/2270>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Asparouhov, T., & Muthén, B. (2014). Multiple-Group factor analysis alignment. *Structural Equation Modeling: A Multidisciplinary Journal*, 21(4), 495–508. <https://doi.org/10.1080/10705511.2014.919210>
- Asparouhov, T., & Muthén, B. (2023). Multiple group alignment for exploratory and structural equation models. *Structural Equation Modeling: A Multidisciplinary Journal*, 30(2), 169–191. <https://doi.org/10.1080/10705511.2022.2127100>

- Avramidis, E., Toulia, A., Tsihouridis, C., & Strogilos, V. (2019). Teachers' attitudes towards inclusion and their self-efficacy for inclusive practices as predictors of willingness to implement peer tutoring. *Journal of Research in Special Educational Needs*, 19(S1), 49–59. <https://doi.org/10.1111/1471-3802.12477>
- Bandura, A. (1977). Self-Efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191–215. <https://doi.org/10.1037/0033-295X.84.2.191>
- Bandura, A. (1997). *Self-Efficacy: The exercise of control*. W. H. Freeman and Company.
- Brägger, M. (2022). *Gewalterfahrungen von Lehrpersonen im schulischen Kontext* [Teachers' experiences of violence in the school context]. Büro Brägger. [https://www.lch.ch/fileadmin/user\\_upload\\_lch/Aktuell/Medienkonferenzen/Januar\\_2023/06\\_Vollversion\\_LCH\\_Studie\\_Gewalterfuehrung\\_2022.pdf](https://www.lch.ch/fileadmin/user_upload_lch/Aktuell/Medienkonferenzen/Januar_2023/06_Vollversion_LCH_Studie_Gewalterfuehrung_2022.pdf)
- Bundesamt für Statistik. (2020). *Statistik der Sonderpädagogik. Schuljahr 2018/19* [Special education statistics: 2018–2019 school year]. <https://www.bfs.admin.ch/bfs/de/home/statistiken/kataloge-datenbanken/publikationen.assetdetail.14776871.html>
- Byrne, B. M., Shavelson, R. J., & Muthén, B. (1989). Testing for the equivalence of factor covariance and mean structures: The issue of partial measurement invariance. *Psychological Bulletin*, 105(3), 456–466. <https://doi.org/10.1037/0033-2909.105.3.456>
- Canadian Charter of Rights and Freedoms, Part 1 of the *Constitution Act, 1982*, being Schedule B to the *Canada Act 1982* (UK), c 11. [https://laws-lois.justice.gc.ca/PDF/CONST\\_TRD.pdf](https://laws-lois.justice.gc.ca/PDF/CONST_TRD.pdf)
- Charitaki, G., Kourti, I., Gregory, J. L., Ozturk, M., Ismail, Z., Alevriadou, A., Soulis, S.-G., Sakici, Ş., & Demirel, C. (2022). Teachers' attitudes towards inclusive education: A cross-national exploration. *Trends in Psychology*. <https://doi.org/10.1007/s43076-022-00240-0>
- Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal*, 14(3), 464–504. <https://doi.org/10.1080/10705510701301834>
- Cieciuch, J., & Davidov, E. (2015). Establishing measurement invariance across online and offline samples. A tutorial with the software packages Amos and Mplus. *Studia Psychologica*, 2(15), 83–99. <https://doi.org/10.5167/UZH-170024>
- Cornoldi, C., Terreni, A., Scruggs, T. E., & Mastropieri, M. A. (1998). Teacher attitudes in Italy after twenty years of inclusion. *Remedial and Special Education*, 19(6), 350–356. <https://doi.org/10.1177/074193259801900605>
- Davidov, E., Meuleman, B., Cieciuch, J., Schmidt, P., & Billiet, J. (2014). Measurement equivalence in cross-national research. *Annual Review of Sociology*, 40(1), 55–75. <https://doi.org/10.1146/annurev-soc-071913-043137>
- De Anna, L., Gaspari, P., & Mura, A. (Eds.). (2015). *L'insegnante specializzato. Itinerari di formazione per la professione* [The specialized teacher. Training itineraries for the profession]. FrancoAngeli.
- Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. Harcourt Brace Jovanovich.
- European Agency for Special Needs and Inclusive Education. (2021). Country information for Italy – Legislation and policy. <https://www.european-agency.org/country-information/italy/legislation-and-policy>
- Gebhardt, M., Miesera, S., Weidenhiller, P., & Jungjohann, J. (2018). *Einstellung, Bedenken und Selbstwirksamkeitserwartung von Lehramtsstudierenden zur schulischen Inklusion* [Attitudes, concerns and self-efficacy expectations of pre-service teachers regarding inclusion in schools]. Technische Universität Dortmund. <https://eldorado.tu-dortmund.de/handle/2003/36870>

- Greek Government. (2000) *Official Gazette*. No. 2817/2000, FEK 78/14–3–2000 (In Greek). Ethniko Typographeio.
- Hecht, P., Aiello, P., Pace, E. M., & Sibilio, M. (2018). Attitudes and teacher efficacy among Italian and Austrian teachers: A comparative study. *Formazione & Insegnamento*, 15(1), 269–282. <https://ojs.pensamultimedia.it/index.php/siref/article/view/2179/1988>
- Hellmich, F., Löper, M. F., & Görel, G. (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(S1), 36–48. <https://doi.org/10.1111/1471-3802.12476>
- Hollenweger, J. (2014). Special education today in Switzerland. In A. F. Rotatori, J. P. Bakken, S. Burkhardt, F. E. Obiakor, & U. Sharma (Eds.), *Special education international perspectives: Practices across the globe* (pp. 243–269). Emerald. <https://doi.org/10.1108/S0270-401320140000028015>
- Hollenweger, J. (2016). Tätigkeiten synchronisieren statt Aufgaben teilen [Synchronize activities instead of sharing tasks]. In A. Kreis, J. Wick, & C. Kosorok Labhart (Eds.), *Kooperation im Kontext schulischer Heterogenität* [Co-Operation in the context of school heterogeneity] (pp. 33–52). Waxmann. <https://www.waxmann.com/index.php?eID=download&buchnr=3521>
- Hu, L.-t., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>
- Ianes, D., Demo, H., & Dell'Anna, S. (2020). Inclusive education in Italy: Historical steps, positive developments, and challenges. *Prospects*, 49(3–4), 249–263. <https://doi.org/10.1007/s11125-020-09509-7>
- Kultusminister Konferenz. (2022). *Datensammlung Sonderpädagogische Förderung in allgemeinen Schulen ohne Förderschulen 2021/2022* [Data collection: Special educational support in general schools without special schools 2021–2022]. <https://www.kmk.org/dokumentation-statistik/statistik/schulstatistik/sonderpaedagogische-foerderung-an-schulen.html>
- Kultusministerkonferenz. (1994). *Empfehlungen zur sonderpädagogischen Förderung in den Schulen in der Bundesrepublik Deutschland* [Recommendations on special needs education in the schools of the Federal Republic of Germany]. <https://www.kmk.org/fileadmin/Dateien/pdf/PresseUndAktuelles/2000/sopae94.pdf>
- Loreman, T., Chris, E., Sharma, U., & Forlin, C. (2007). The development of an instrument for measuring pre-service teachers' sentiments, attitudes, and concerns about inclusive education (EJ814498). *International Journal of Special Education*, 22(2), 150–159. ERIC. <https://files.eric.ed.gov/fulltext/EJ814498.pdf>
- Loreman, T. (2014). Special education today in Canada. In A. F. Rotatori, J. P. Bakken, S. Burkhardt, F. E. Obiakor, & U. Sharma (Eds.), *Advances in special education* (Vol. 28, pp. 33–60). Emerald. <https://doi.org/10.1108/S0270-401320140000028008>
- MacFarlane, K., & Woolfson, L. M. (2013). Teacher attitudes and behavior toward the inclusion of children with social, emotional and behavioral difficulties in mainstream schools: An application of the theory of planned behavior. *Teaching and Teacher Education*, 29, 46–52. <https://doi.org/10.1016/j.tate.2012.08.006>
- Merz-Atalik, K. (2022). Canada as a “driving force” for inclusion activists in European countries? In T. M. Christou, R. Kruschel, I. A. Matheson, & K. Merz-Atalik (Eds.), *European Perspectives on Inclusive Education in Canada* (1st ed., pp. 9–34). Routledge. <https://doi.org/10.4324/9781003204572-3>

- Miesera, S., Sokal, L., & Kimmelman, N. (2021). A cross-national study of the effects of education on pre-service teachers' attitudes, intentions, concerns, and self-efficacy regarding inclusive education. *Exceptionality Education International*, 31(1), 77–96. <https://doi.org/10.5206/eei.v31i1.13454>
- Muthén, L. K., & Muthén, B. O. (2017). *MPlus: Statistical analysis with latent variables* (Version 8.1). Muthén & Muthén.
- Organisation for Economic Co-operation and Development. (2017). *OECD economic surveys: Switzerland 2017*. OECD Publishing. [https://doi.org/10.1787/eco\\_surveys-che-2017-en](https://doi.org/10.1787/eco_surveys-che-2017-en)
- Opoku, M. P., Cuskelly, M., Pedersen, S. J., & Rayner, C. S. (2020). Applying the theory of planned behaviour in assessments of teachers' intentions towards practicing inclusive education: A scoping review. *European Journal of Special Needs Education*, 36(4), 577–592. <https://doi.org/10.1080/08856257.2020.1779979>
- Opoku, M. P., Cuskelly, M., Pedersen, S. J., & Rayner, C. S. (2021). Attitudes and self-efficacy as significant predictors of intention of secondary school teachers towards the implementation of inclusive education in Ghana. *European Journal of Psychology of Education*, 36(3), 673–691. <https://doi.org/10.1007/s10212-020-00490-5>
- Ramberg, J., Lénárt, A., & Watkins, A. (Eds.). (2020). *European Agency Statistics on Inclusive Education: 2018 dataset cross-country report*. European Agency for Special Needs and Inclusive Education. [https://www.european-agency.org/sites/default/files/easie\\_2018\\_dataset\\_cross-country\\_report.docx](https://www.european-agency.org/sites/default/files/easie_2018_dataset_cross-country_report.docx)
- Sahli Lozano, C., Sharma, U., & Wüthrich, S. (2021). A comparison of Australian and Swiss secondary school teachers' attitudes, concerns, self-efficacy, and intentions to teach in inclusive classrooms: Does the context matter? *International Journal of Inclusive Education*. <https://doi.org/10.1080/13603116.2021.1988158>
- Sahli Lozano, C., & Wüthrich, S. (2023). *Daten von Berner und Deutschschweizer Lehrpersonen und sonderpädagogischen Fachpersonen zu Einstellungen, Bedenken und Selbstwirksamkeit gegenüber schulischer Inklusion (ISASI) (2019–2022)* [Data from Bernese and Swiss German-speaking teachers and special education professionals on attitudes, concerns and self-efficacy toward school inclusion; Dataset] (Version 1.0). SwissUbase. <https://doi.org/10.48573/CBJP-WK67>
- Sahli Lozano, C., Wüthrich, S., Baumli, N., Sharma, U., Loreman, T., & Forlin, C. (2023). Development and validation of a short form of the Teacher Efficacy for Inclusive Practices Scale (TEIP-SF). *Journal of Research in Special Educational Needs*, 23(4), 375–388. <https://doi.org/10.1111/1471-3802.12607>
- Saloviita, T., & Consegna, S. (2019). Teacher attitudes in Italy after 40 years of inclusion. *British Journal of Special Education*, 46(4), 465–479. <https://doi.org/10.1111/1467-8578.12286>
- Sharma, U., Aiello, P., Pace, E. M., Round, P., & Subban, P. (2018). In-service teachers' attitudes, concerns, efficacy and intentions to teach in inclusive classrooms: An international comparison of Australian and Italian teachers. *European Journal of Special Needs Education*, 33(3), 437–446. <https://doi.org/10.1080/08856257.2017.1361139>
- Sharma, U., Forlin, C., Loreman, T., & Earle, C. (2006). Pre-Service teachers' attitudes, concerns and sentiments about inclusive education: An international comparison of novice pre-service teachers (EJ843609). *International Journal of Special Education*, 21(2), 80–93. ERIC. <https://files.eric.ed.gov/fulltext/EJ843609.pdf>
- Sharma, U., & Jacobs, D. K. (2016). Predicting in-service educators' intentions to teach in inclusive classrooms in India and Australia. *Teaching and Teacher Education*, 55, 13–23. <https://doi.org/10.1016/j.tate.2015.12.004>

- Sharma, U., Loreman, T., & Forlin, C. (2012). Measuring teacher efficacy to implement inclusive practices. *Journal of Research in Special Educational Needs*, 12(1), 12–21. <https://doi.org/10.1111/j.1471-3802.2011.01200.x>
- Sharma, U., Loreman, T., May, F., Romano, A., Lozano, C. S., Avramidis, E., Woodcock, S., Subban, P., & Kullmann, H. (2023). Measuring collective efficacy for inclusion in a global context. *European Journal of Special Needs Education*. <https://doi.org/10.1080/08856257.2023.2195075>
- Sharma, U., & Mannan, H. (2015). Do attitudes predict behaviour – An (un)solved mystery? In P. Jones & S. Danforth (Eds.), *Foundations of inclusive education research* (pp. 115–131). Emerald.
- Sharma, U., Simi, J., & Forlin, C. (2015). Preparedness of pre-service teachers for inclusive education in the Solomon Islands. *Australian Journal of Teacher Education*, 40(5), Article 6. <https://doi.org/10.14221/ajte.2015v40n5.6>
- Sharma, U., Sokal, L., Wang, M., & Loreman, T. (2021). Measuring the use of inclusive practices among pre-service educators: A multi-national study. *Teaching and Teacher Education*, 107, Article 103506. <https://doi.org/10.1016/j.tate.2021.103506>
- Simón, C., Muñoz-Martínez, Y., & Porter, G. L. (2022). Advancing inclusion in education systems. In T. M. Christou, R. Kruschel, I. A. Matheson, & K. Merz-Atalik, *European perspectives on inclusive education in Canada* (1st ed., pp. 243–267). Routledge. <https://doi.org/10.4324/9781003204572-21>
- Song, J., Sharma, U., & Choi, H. (2019). Impact of teacher education on pre-service regular school teachers' attitudes, intentions, concerns and self-efficacy about inclusive education in South Korea. *Teaching and Teacher Education*, 86, Article 102901. <https://doi.org/10.1016/j.tate.2019.102901>
- Specht, J., & Thompson, S. A. (2022). Inclusive education in Canada. In T. M. Christou, R. Kruschel, I. A. Matheson, & K. Merz-Atalik, *European perspectives on inclusive education in Canada* (1st ed., pp. 61–74). Routledge. <https://doi.org/10.4324/9781003204572-6>
- Steenkamp, J.-B. E. M., & Baumgartner, H. (1998). Assessing measurement invariance in cross-national consumer research. *Journal of Consumer Research*, 25(1), 78–107. <https://doi.org/10.1086/209528>
- Tschannen-Moran, M., & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, 17(7), 783–805. [https://doi.org/10.1016/S0742-051X\(01\)00036-1](https://doi.org/10.1016/S0742-051X(01)00036-1)
- United Nations Educational, Scientific and Cultural Organization & Spain Ministry of Education and Science. (1994). *The Salamanca statement and framework for action on special needs education* (ED.94/WS/18). <https://unesdoc.unesco.org/ark:/48223/pf0000098427>
- United Nations General Assembly. (2006). *Convention on the rights of persons with disabilities* (A/RES/61/106, Annex 1). <https://www.refworld.org/docid/4680cd212.html>
- United Nations. (2007). *Convention on the rights of persons with disabilities and optional protocol*. <https://www.un.org/disabilities/documents/convention/convoptprot-e.pdf>
- van Steen, T., & Wilson, C. (2020). Individual and cultural factors in teachers' attitudes towards inclusion: A meta-analysis. *Teaching and Teacher Education*, 95, Article 103127. <https://doi.org/10.1016/j.tate.2020.103127>
- Wilson, C., Woolfson, L. M., & Durkin, K. (2019). The impact of explicit and implicit teacher beliefs on reports of inclusive teaching practices in Scotland. *International Journal of Inclusive Education*, 26(4), 378–396. <https://doi.org/10.1080/13603116.2019.1658813>
- Wilson, C., Woolfson, L. M., Durkin, K., & Elliott, M. A. (2016). The impact of social cognitive and personality factors on teachers' reported inclusive behaviour. *British Journal of Educational Psychology*, 86(3), 461–480. <https://doi.org/10.1111/bjep.12118>

- Wray, E., Sharma, U., & Subban, P. (2022). Factors influencing teacher self-efficacy for inclusive education: A systematic literature review. *Teaching and Teacher Education, 117*, Article 103800. <https://doi.org/10.1016/j.tate.2022.103800>
- Yada, A., Leskinen, M., Savolainen, H., & Schwab, S. (2022). Meta-Analysis of the relationship between teachers' self-efficacy and attitudes toward inclusive education. *Teaching and Teacher Education, 109*, Article 103521. <https://doi.org/10.1016/j.tate.2021.103521>
- Yan, Z., & Sin, K. (2014). Inclusive education: Teachers' intentions and behaviour analysed from the viewpoint of the theory of planned behaviour. *International Journal of Inclusive Education, 18*(1), 72–85. <https://doi.org/10.1080/13603116.2012.757811>
- Zambotti, F., & Demo, H. (2011). Un'analisi delle opinioni degli insegnanti [An analysis of teachers' opinions]. In A. Canevaro, L. d'Alonzo, D. Ianes, & R. Caldin (Eds.), *L'integrazione scolastica nella percezione degli insegnanti* [Teachers' perceptions of school integration]. Erickson.

#### **Authors' Note**

Correspondence concerning this article should be addressed to Caroline Sahli Lozano, PH Bern, Institut für Forschung, Entwicklung und Evaluation, Fabrikstrasse 8, Bern, Canton of Bern, Switzerland. Email: [caroline.sahlilozano@phbern.ch](mailto:caroline.sahlilozano@phbern.ch)