

Attitudes Towards Inclusion and Self-Efficacy of Principals and Teachers

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Current research provides evidence of the positive influence of sense of (self-)efficacy and personal experience regarding attitudes towards inclusion for children with special educational needs (SEN). A multilevel study was designed to investigate the relationship between attitudes towards inclusion and sense of efficacy as well as mainstreaming experience at the individual, teaching staff, and principal level. In this context, 48 primary schools with inclusive classrooms were examined. Results indicated that teaching staff differ in regard to attitudes towards inclusion and individual and collective efficacy. Furthermore, there was a relationship regarding attitudes towards inclusion and mainstreaming experience between the school principal and the teaching staff. In regard to factors influencing attitudes towards inclusion, at the individual level, sense of self-efficacy and mainstreaming experience, and at the teaching staff level, collective efficacy, influenced attitudes towards remedial education. Teacher self-efficacy significantly influenced attitudes towards social integration. Results suggest that successful supervision of the process in inclusive school development depends on a consideration of the school's overall framework of circumstances – its principal, its teachers, and its staff.

Keywords: inclusion, attitudes towards inclusion, self-efficacy, principals, teaching staff

INTRODUCTION

Educational inclusion is a reform process aiming to promote diversity among school children. Students are grouped in classrooms regardless of their ethnic or national origins, religious background, social status, gender, and abilities, thereby counteracting the problem of social exclusion (Ainscow, 2007; Ainscow & Miles, 2008; UNESCO, 2001; Vitello & Mithaug, 1998). Farrell (2004) and Ainscow (2005) view this as an international challenge for educational systems. The development of teaching methods that take the academic learning processes as well as social integration of all students into consideration is a major task in inclusive classroom settings. Regarding social interaction, this signifies a change in attitudes towards diversity and a reduction in discrimination (WHO, 2011).

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Research has shown that for students with SEN, an important consideration for successful inclusion is whether or not teaching staff and school principals cultivate positive attitudes towards inclusive education (Avramidis & Norwich, 2002; Forlin, Earle, Loremann, & Sharma 2011). This is an important consideration not only for the permanent enrollment of children with SEN in regular schools, but also in regard to their involvement in class activities (Dupoux, Wolman, & Estrada, 2005), because the attitudes of a person can be seen as a basic assumption for grasping a situation and acting accordingly (Eagly & Chaiken, 1993). This is congruent with the theory of planned behavior (Ajzen & Fishbein, 2005), which postulates that the behavioral intentions, as predictors of the behavioral act, are influenced by one's attitudes towards the behavior as well as by the social norms and expectations about the behavior's feasibility. This suggests that positive attitudes towards inclusion may lead to a greater willingness to enroll and supervise children with SEN in the general school programs (Brownell & Pajares, 1999; Soodak & Podell, 1993; Soodak, Podell, & Lehmann, 1998). Furthermore, various studies have demonstrated that teachers' attitudes towards the inclusion of children with SEN are positively influenced by their sense of self-efficacy as an experienced teacher (Meijer & Foster, 1988; Sharma, Loreman, & Forlin, 2011; Soodak et al., 1998; Weisel & Dror, 2006).

According to Bandura's social-cognitive theory (1997), a person's subjective expectation about how he or she will manage to attain a goal on the basis of individual abilities emerges from self-efficacy. Therefore, self-efficacy plays a major role in the planning and execution of actions and in dealing with difficult tasks. Thus, Bandura (1997) and Pajares (1996) cite a series of studies which suggest that people with a higher sense of self-efficacy take on greater challenges, exert more effort, and carry on longer in coping with tasks and working towards goals. Moreover, DeMesquita and Drake (1994) and Guskey (1988) were able to show that teachers with a strong sense of self-efficacy held more positive attitudes towards educational reforms and implementation of new guidelines (Poole & Okeafor, 1989; Poole, Okeafor, & Sloan, 1989 in Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998).

The road to an inclusion-based school system can be seen as an innovative educational process demanding fundamental changes in a school's organizational structure. Therefore, basic attitudes and feelings of efficacy play a significant role not only for the individual teacher, but for the entire teaching staff as well. Dupoux et al. (2005) showed that the individual teacher's attitudes towards inclusion may be positively influenced by positive attitudes of the staff in general and by a supportive school atmosphere. This type of environment also makes it easier to deal with anxieties as well as to increase teachers' self-confidence regarding teaching children with SEN.

Consequently, individual experience as well common experience among the teaching staff regarding the enrollment of children with SEN is a significant resource for meeting the upcoming challenges (Leyser, Zeiger, & Romi, 2011; McGregor & Vogelsberg, 1998). In this context, perceived collective efficacy – which describes super-individual convictions in regard to a specific reference group's competence to act – is a significant factor (Schmitz & Schwarzer, 2002).

However, this is not meant to be understood as the sum of the individual group-members' self-efficacy but rather as the actions of individual persons within a group against the background of the joint convictions. Attaining goals set by a group

is not only the result of shared abilities and knowledge. It arises through the interactive, coordinated, and synergetic dynamics of common actions (Bandura, 1997). Bandura assumed that elements that go beyond individual self-efficacy may be explained through collective efficacy. Nevertheless, both forms of efficacy and their basis of conviction arise from similar sources and work in similar ways. Consequently, the collective sense of efficacy leads to a more optimistic conception concerning the management of future situations and is connected with a group's behavior. Some of these behaviors include the intention to follow more demanding reform ideas, the effort a group puts into the attainment of goals, and the resistance to hindrances or to the regeneration process if the common efforts do not succeed at first (Parker, 1994; Schwarzer & Jerusalem, 2002). Furthermore, the collective sense of efficacy leads to increased learning success among students (Bandura, 1993; Goddard, Hoy, & Woolfolk-Hoy, 2000; Hoy, Sweetland, & Smith, 2002; Tschannen-Moran & Barr, 2004). Here, it appears that a complementary influence exists between individual and collective efficacy.

Some authors have suggested that there is a connection between collective efficacy, in the sense of a school's normal frame of action, and individual efficacy. Goddard & Goddard (2001) were able to demonstrate that in regard to economic status and academic achievements, collective efficacy was the sole significant factor for predicting differences in teachers' self-efficacy at the school level. As a possible explanation, it could be assumed that each teacher is aware of the social processes and collective attitudes characterizing the school and predominantly influencing its norms. Moreover, this has an influence on the teacher's attitudes as well as on the affective, motivational, and behavioral aspects of his or her teaching activities (Bandura, 1997; Goddard & Goddard, 2001; Tschannen-Moran & Barr, 2004). Recent research has shown that teaching staff differ systematically with respect to individual teacher's self-efficacy and collective efficacy (Bandura, 1997; Goddard & Goddard 2001; Urton, Wilbert, & Hennemann, 2014).

In the overall process of school inclusion, principals, in collaborating with their teaching staff, play a key role in building a school culture promoting inclusion. This can have a positive influence on the way students with SEN participate in the regular schools (Ainscow, 1999; Ainscow, Dyson, & Weiner, 2013; Leo & Barton, 2006). This may also stem from the fact that the development and guidance of group processes is a principal's central task (Avolio, Sosik, Jung, & Berson, 2003): "Good school principals are the keystone of good schools." (Institute for Educational Leadership, 2002, S. 6). Thus, Edmonds (1979) assumes that principals are an essential, effective factor in successful schools: "There are some bad schools with good principals, but there are no good schools with bad principals." (Stone, 1992, S. 2). Psychological and educational research has focused on leadership styles and their influence on changes within groups and the effectiveness of groups (Cherkowski, 2012; Senge, 2008). According to Rost (1995), one essential, common factor in the research on school-leadership is the ability of a principal to work positively with his or her teaching staff in the sense of building up a common set of goals and establishing a sense of stability within the group. The results of Urton et al., (2014) support the assumption that principals have a strong influence upon the teaching staff's attitudes and experience of collective efficacy.

Based on heterogeneous results, other authors have reported on various ways in which a principal's leadership, due to their widely differing characteristics, influences the experience of (self-) efficacy (Hannah, Avolio, Luthans, & Harms, 2008; Hipp, 1996; Hipp & Bredeson, 1995; Kurt, Duyar, & Çalik, 2012; Tschannen-Moran & Woolfolk Hoy, 2007). A self-effective and competent principal possesses the ability to give directions and thus exercises a positive influence on the teaching staff's attainment of commonly agreed-upon goals (Leithwood & Riehl, 2003; Leithwood, Seashore Louis, Anderson, & Wahlstrom, 2004; Tschannen-Moran & Gareis, 2004). This positive influence becomes particularly important when difficulties arise through the course of process change (Paglis & Green, 2002). A more highly developed sense of self-efficacy in school leadership thus leads to better management of the processes of change within the teaching staff. This in turn has a positive effect on the students attending the school (Dimmock & Hattie, 1996). Some researchers have shown that principals may also influence the overall school atmosphere in a positive way (Leithwood & Riehl, 2003; Price, 2012).

Through the foregoing considerations it is evident that the processes of school development demand changes both at the individual and group level: these changes include the attitudes and convictions of individual teachers as well as those of the teaching staff and principal (Bandura, 1997; Dupoux et al., 2005; Goddard & Goddard, 2001; Leyser et al., 2011; McGregor & Vogelsberg, 1998).

Within the framework of a multilevel analysis, an investigation of the following question appears to be significant and profitable. First, to what degree do the staff of primary schools practicing inclusion differ in relation to *attitudes towards inclusion*, *individual* and *collective (self-)efficacy*, and *mainstreaming experience* in teaching classes of students with and without SEN? Second, to what extent are these variables subject to the influence of the respective school principals?

Furthermore, our intent was to also consider how, with regard to teaching and assisting as well as socially integrating children with SEN, the individual teacher's *attitudes towards inclusion* is influenced by the *individual* and *collective (self-)efficacy*, the school principal, and the *mainstreaming experience* gained through teaching classes of students with and without SEN.

We expected:

1. differences between teaching staffs with regard to their *attitudes towards inclusion*, *self-efficacy* and *collective efficacy*, and amount of *mainstreaming experiences* they have as teachers,
2. a correlation between principals and their staff with regard to *attitude towards inclusion*, *self-efficacy* and *collective efficacy*, and amount of *mainstreaming experiences*, and
3. that teachers' *individual attitudes towards remedial education* and *social integration* are conjointly influenced by personal factors, the composition of the staff they work in, and principals. Specifically, we expect first of all that *self-efficacy* and *mainstreaming experiences* will exert a positive influence at a personal level, second, that *attitudes towards inclusion*, *collective efficacy*, and *mainstreaming experiences* as will be as influential on the level of staff and principals.

METHOD

Participants

The study was conducted in North Rhine-Westphalia, a federal state of Germany. For a better understanding of the present study, it should be noted that Germany has ratified the UN convention on the rights of persons with disabilities (United Nations, 2006) in 2009. Since then, Germany is obliged to ensure inclusive education for students with disabilities. While the percentage of students with disabilities attending regular schools was 18.4% in 2008, this number increased to about 28.2% in 2013 (Klemm, 2013). Nevertheless, Germany still has the second lowest ratio of inclusion compared to other European states (Preuss-Lausitz, 2013).

A questionnaire was administered to a total of 314 primary school teachers and 48 principals from 48 schools. From this sample, data were dropped from schools with less than five teachers. This resulted in a sample of 276 teachers ($M_{age} = 43.5$; $SD_{age} = 10.9$; 96% female) and their principals ($M_{age} = 51.8$; $SD_{age} = 7.3$; 80% female) from 35 schools ($M_{teachers\ per\ school} = 7.9$, $SD_{teachers\ per\ school} = 2.6$). Missing values that arose during the process of data collection were estimated by applying an expectation maximization algorithm based on a bootstrapping model by way of the R package Amelia (Honaker, King, & Blackwell, 2011; R Core Team, 2011).

Material and Procedure

Attitudes towards inclusion. Data were collected on participants' *attitudes towards inclusion* using the German questionnaire "Einstellung zur Integration – Deutsch"¹ (EZI-D, Kunz, Luder, & Moretti, 2010). The EZI is constructed from the two subscales: *remedial education* and *social integration*. The scale *remedial education* consists of seven items and reflects the extent to which it is possible to meet the individual educational needs of students with SEN in integrative classes (example item: "The longer a child with special educational needs is in a normal school setting, the more likely academic development will improve in quality"). The scale *social integration* includes four items and refers to social contacts and acceptance of children with SEN within the regular class structure (example item: "The longer a child with special educational needs is in a normal school setting, the greater is the likelihood that he or she will be treated well by his or her classmates."). All items of the EZI were rated on a five-point scale ranging from "applies completely" to "does not apply at all". The data of the present study revealed that the internal consistency of the scales ranged from satisfactory to good for teachers (Cronbachs $\alpha_{EZIremedial\ education} = .84$; Cronbachs $\alpha_{EZIsocial\ integration} = .76$) and principals (Cronbachs $\alpha_{EZIremedial\ education} = .82$; Cronbachs $\alpha_{EZIsocial\ integration} = .79$).

Self-efficacy and collective efficacy. Two questionnaires developed by Schwarzer and Jerusalem (1999) were administered regarding teachers' *self-efficacy* and *col-*

¹ This is a translation of the questionnaire „Teacher Attitudes Toward Inclusion“ (TATI). (Stanley, Grimbeek, Bryer, & Beamish, 2003; Bryer, Grimbeek, Beamish, & Stanley, 2004). The concept originally employed (inclusion) was rendered here as Integration; strictly speaking, this also corresponds to the language used in the questionnaire, since we are here speaking of children needing special assistance.

lective efficacy. The scale for measuring teachers *self-efficacy* (“Wirksamkeit Lehrer”, WL) was comprised of ten items involving four possible responses (“exactly right” to “not true”). An example item is “I am certain that I can establish good contact with problematical students if I make the effort”. *Collective efficacy* (“Wirksamkeit Kollektiv”, WK) was assessed on the basis of twelve questions using the same scale as the WL. An example item is “I am convinced of the strong potential for innovation in our teaching staff, which allows us to carry out reforms even against unfavorable conditions”. Evaluating the data of the present study, both scales demonstrated satisfactory to very good internal consistencies for teachers (Cronbachs $\alpha_{WL} = .86$; Cronbachs $\alpha_{WK} = .92$) and principals (Cronbachs $\alpha_{WL} = .86$; Cronbachs $\alpha_{WK} = .89$).

Mainstreaming experience. Teachers were asked how many years they had been teaching in mainstreaming education. For the analysis conducted in the present study, results were dichotomized to the categories “no *mainstreaming experience*” and “*mainstreaming experience*”.

In addition, the following data were collected: gender, age, and years of professional experience as a teacher. The questionnaires were filled out and analyzed anonymously.

Design and analyzing strategy

Due to the nested data structure, data were analyzed utilizing multilevel modeling (linear mixed models on the basis of non-restrictive maximum likelihood estimators using the R package „nlme“, Pinheiro, Bates, DebRoy, EISPAC, 2014). This also allowed for estimating attributes at the school level as predictive variables.

The presence of significant level-2 effects were checked with intraclass correlations and agreement indices (Bliese, 2013; Dunlap, Burke, & Smith-Crowe, 2003; James, Demaree, & Wolf, 1984). The actual multilevel analysis occurred in a stepwise regression model in which first the predictive factors on level 1 (individual teachers) and then those on level 2 (teaching staff and principals) were inserted. Changes in model fits of each step were tested according to the likelihood ratio test.

The two aspects of *attitudes towards inclusion (remedial education and social integration)* were analyzed separately, since within current questionnaires these dimensions were also differentiated (e.g. Antonak & Larrivee, 1995; Forlin, Cedillo, Romero-Contreras, Fletcher, & Hernandez, 2010; Kunz et al., 2010; Wilczenski, 1995).

RESULTS

As depicted in Table 1, principals were significantly more optimistic in their *attitudes towards remedial education*, whereas there were no differences in *attitudes towards social integration*. Moreover, principals had a higher average score for *self-efficacy* and *collective efficacy*. The *mainstreaming experience* did not differ significantly between the two groups.

Table 1. Comparison of teachers' and principals' attitudes towards inclusion, efficacy, and mainstreaming experience

Variable	Teachers		Principals		Comparison of teachers and principals			
	<i>n</i>	<i>M(SD)</i>	<i>n</i>	<i>M(SD)</i>	<i>t</i>	<i>df</i>	<i>p</i>	<i>d</i>
Attitudes towards inclusion: Remedial education	261	16(4.8)	35	19.2(4.3)	3.74	294	<.001	0.50
Attitudes towards inclusion: Social integration	261	13.7(2.7)	35	14.4(2.0)	1.39	294	>.16	0.19
Self-efficacy	265	30.5(6.5)	35	36.8(5.1)	5.50	298	<.001	0.76
Collective efficacy	264	26.7(5.1)	35	29.6(3.2)	3.32	297	<.01	0.49
Mainstreaming experience	265	48%	35	32%	-1.52	298	>.12	-0.20

Teaching staff influence

Indices were computed for the influence of membership to a specific staff onto the individual (ICC), the agreement of teachers within a staff, and the amount of distinctiveness in average ratings between staffs (ICC(2)). The ICC and ICC(2) were computed on the basis of univariate ANOVAs (Bartko, 1976).⁹ To test the significance of the ICCs, a model assuming a random effect (teaching staff) was compared with a model lacking this presupposition by means of a likelihood-ratio test. The *within-group agreement* (r_{wg} , James et al., 1984) served to measure the level of common agreement within the teaching staff. A high level of *within-group agreement* ($\geq .70$, Bliese, 2013) shows that the teaching staff of a particular school shared a similar view in respect to the investigated variable.

About 28% of the total variance of the *attitudes towards remedial education* and 17% of the variance of the *attitudes towards social integration* could be attributed to the fact that the teachers belong to different teaching staff (Table 2). Moreover, the membership in a particular teaching staff explained 16% of the total individual variance in *self-efficacy*, 19% with respect to *collective efficacy*, and 28% in *mainstreaming experience*. A high agreement was found for the variables *attitudes towards inclusion* (*remedial education*: $M_{rwg} = .73$; *social integration*: $M_{rwg} = .66$, *self-efficacy*: $M_{rwg} = .84$, as well as *collective efficacy*: $M_{rwg} = .70$).

Table 2. Intraclass correlations and within-group agreement

Variable	$M_{rwg}^{1)}$	rwg threshold 95% CI ²⁾	Proportion > 95%CI ³⁾	ICC	L	p	ICC(2)
Attitudes towards inclusion: Remedial education	.73	.84	.23	.28	36.5	<.001	.74
Attitudes towards inclusion: Social integration	.66	.86	.20	.17	14.9	<.001	.60
Self-efficacy	.84	.85	.57	.16	11.8	<.01	.58
Collective efficacy	.70	.85	.34	.19	17.4	<.001	.62
Mainstreaming experience	.37	1.00	.00	.28	34.5	<.001	.74

Note. ¹⁾ Within-group agreement by James, Demaree, & Wolf (1984); ²⁾ calculated according to Dunlap, Burke, & Smith-Crowe (2003); ³⁾proportion of level 2 groups (teaching staff) with a significant M_{rwg} ; ICC = intraclass correlation coefficient, proportion of the variance that is explained by grouping (ICC(1,1) according to Shrout & Fleiss, 1979); ICC(2) = reliability of the difference between means of staff members (ICC(1,k) according to Shrout, & Fleiss, 1979); L = likelihood-ratio test value of comparison between the model with random effect for school and a model without this assumption.

Reciprocity of principals and teaching staff’s attitudes towards inclusion, self- and collective efficacy, and mainstreaming experience

Next, the relationship between teaching staff and principals were analyzed with respect to *attitudes towards inclusion, efficacy, and mainstreaming experience*. A multilevel analysis was conducted for each variable predicting the values for the individual teachers based on a comparison of a model including the principals’ values as a predictor to a model without this predictor. Effect sizes were calculated separately for level 1 and level 2 of the model (according to the calculation of the proportional reduction of the prediction error as described in Snijders & Bosker, 1994). In line with our hypothesis, it was found that the school principal was an important factor in explaining the variance in *attitudes towards inclusion (remedial education: B = 0.31, p < .01, R²_{L1} = .07, R²_{L2} = .19; social integration: B = 0.26, p < .05, R²_{L1} = .04, R²_{L2} = .13)* as well as the *mainstreaming experience (B = 0.39, p < .001, R²_{L1} = .14, R²_{L2} = .38)* within the teaching staff. Regarding *self-efficacy (B = 0.12, p > .33, R²_{L1} = .01, R²_{L2} = .02)* and *collective efficacy (B = 0.21, p > .13, R²_{L1} = .02, R²_{L2} = .08)* there was no significant effect explaining variance through the school principal (see Table 3).

Table 3. Reciprocity of principals and teaching staff's attitudes towards inclusion, self- and collective efficacy, and mainstreaming experience

Variable	<i>B</i>	<i>SE</i>	<i>df</i>	<i>t</i>	<i>p</i>	R^2_{L1}	R^2_{L2}
Attitudes towards inclusion: Remedial education	0.31	0.11	33	2.88	<.01	.07	.19
Attitudes towards inclusion: Social integration	0.26	0.12	33	2.15	<.05	.04	.13
Self-efficacy	0.12	0.12	33	0.98	>.33	.01	.02
Collective efficacy	0.21	0.13	33	1.54	>.13	.02	.08
Mainstreaming experience	0.39	0.09	33	4.45	<.001	.14	.38

Note. *B* = regression weight; *SE* = standard error; *df* = degrees of freedom; R^2_{L1} = explained variation level 1 (individual teachers); R^2_{L2} = explained variation level 2 (staff)

Factors influencing the attitudes towards remedial education and social integration on individual, teaching staff and school principal level

Next, the assumption that a teachers' attitudes towards inclusion is influenced by factors at the individual level (teacher's self-efficacy; teacher's mainstreaming experience), teaching staff level (staffs mean collective efficacy; staffs mean mainstreaming experience), and principal level (principal's attitudes towards inclusion; principal's collective efficacy; principal's mainstreaming experience) were tested. In agreement with a procedure described by Goddard & Goddard (2001), teachers' estimations of their collective efficacy were averaged in order to estimate the collective efficacy of a specific teaching staff. The overall model that was postulated for attitudes towards inclusion was found to explain a considerable part of the variance (remedial education: R^2_{L1} = 40%, R^2_{L2} = 69% and social integration: R^2_{L1} = 19%, R^2_{L2} = 33%).

With respect to the attitudes towards remedial education, a gradual increase of the explained variance with the addition of each predictor variable was found (Table 4).

A detailed analysis of the overall model revealed a distinct influence for all predictors at the individual level (teachers self-efficacy: $t(215) = 7.69$, $B = 0.4$, $p < .001$, teacher's mainstreaming experience $t(215) = 2.10$, $B = 1.2$, $p < .05$) as well as the collective efficacy at the teaching staff level ($t(29) = 3.60$, $B = 0.3$, $p < .01$). No significant influence was found for the mainstreaming experience on teaching staff level ($t(29) = 1.61$, $B = 2.1$, $p > .11$), attitudes towards remedial education of the principals ($t(29) = 0.43$, $B = 0$, $p > .66$), and principals' mainstreaming experience ($t(29) = 0.67$, $B = 0.5$, $p > .50$). Furthermore, an inverse effect appeared for the influence of the collective efficacy of school principals ($t(29) = -2.74$, $B = -0.2$, $p < .05$).

Table 4. Attitudes towards inclusion: Remedial Education

Variable	<i>df</i>	<i>AIC</i>	<i>BIC</i>	<i>logLik</i>	<i>L</i>	<i>p</i>	R^2_{L1}	R^2_{L2}
Empty model (random intercept only)	3	1479	1490	-736.5				
+ Teachers' self-efficacy	4	1414	1428	-703	67	<.001	.27	.36
+ Teachers' mainstreaming experience	5	1407	1425	-698.7	8.5	<.001	.31	.44
+ Staffs mean collective efficacy	6	1403	1424	-695.4	6.6	<.05	.35	.54
+ Staff's mean mainstreaming experience	7	1401	1426	-693.7	3.5	>.06	.36	.59
+ Principals' attitudes towards inclusion: Remedial education	8	1402	1430	-693	1.3	>.26	.37	.60
+ Principals' collective efficacy	9	1397	1429	-689.4	7.3	<.05	.40	.68
+ Principals' mainstreaming experience	10	1398	1434	-689.2	0.5	>.50	.40	.69

Note. *df* = degrees of freedom; *AIC* = Akaike's quality criteria; *BIC* = Bayesian quality criteria; *L* = likelihood-ratio test value; R^2_{L1} = explained variation level 1 (teachers'); R^2_{L2} = explained variation level 2 (staff).

Table 5. Overall model - Attitudes towards inclusion: Remedial Education

Variable	<i>B</i>	<i>SE</i>	<i>df</i>	<i>t</i>	<i>p</i>
Intercept	-0.6	3.2	215	-0.19	>.85
Teachers' self-efficacy	0.4	0.1	215	7.69	<.001
Teachers' mainstreaming experience	1.2	0.6	215	2.10	<.05
Staff's mean collective efficacy	0.3	0.1	29	3.60	<.01
Staff's mean mainstreaming experience	2.1	1.3	29	1.61	>.11
Principals' attitudes towards inclusion: Remedial education	0	0.1	29	0.43	>.66
Principals' collective efficacy	-0.2	0.1	29	-2.74	<.05
Principals' mainstreaming experience	0.5	0.8	29	0.67	>.50

Note. *B* = regression weight *SE* = standard error; *df* = degrees of freedom

With regard to the *attitudes towards social integration*, only teachers' *self-efficacy* and principals' *mainstreaming experience* contributed to a more significant ratio of explained variance to the model (Table 6).

Table 6. Attitudes towards inclusion: Social Integration

Variable	<i>df</i>	<i>AIC</i>	<i>BIC</i>	<i>logLik</i>	<i>L</i>	<i>p</i>	R^2_{L1}	R^2_{L2}
Empty model (random intercept only)	3	1202	1212	-597.9				
+ Teachers' self- efficacy	4	1169	1184	-580.7	34.3	<.001	.13	.14
+ Teachers' mainstreaming experience	5	1171	1189	-580.7	0.1	>.72	.13	.14
+ Staff's mean collective efficacy	6	1173	1194	-580.6	0.1	>.73	.13	.14
+ Staff's mean mainstreaming experience	7	1175	1200	-580.5	0.2	>.65	.13	.15
+ Principals' attitudes towards inclusion: Social integration	8	1174	1202	-579	3.0	>.08	.15	.22
+ Principals' collective efficacy	9	1175	1207	-578.4	1.2	>.28	.16	.26
+ Principals' mainstreaming experience	10	1173	1208	-576.5	3.8	>.05	.19	.33

Note. *df* = degrees of freedom; *AIC* = Akaike's quality criteria; *BIC* = Bayesian quality criteria; *L* = likelihood-ratio test value; R^2_{L1} = explained variation level 1 (teachers'); R^2_{L2} = explained variation level 2 (staff)

Correspondingly, an examination of the individual predictors of the resulting overall model showed a distinct influence of teachers' *self-efficacy* ($t(215) = 5.53$, $B = 0.2$, $p < .001$), whereas principals' *mainstreaming experience* just missed reaching the level of significance ($t(29) = 1.98$, $B = 1.1$, $p > .05$). All other predictors failed to reach significance.

Table 7 Overall model - Attitudes towards inclusion: Social Integration

Variable	<i>B</i>	<i>SE</i>	<i>df</i>	<i>t</i>	<i>p</i>
Intercept	7.1	2.2	215	3.16	<.01
Teachers' self-efficacy	0.2	0.0	215	5.53	<.001
Teachers' mainstreaming experience	0.1	0.4	215	0.14	>.88
Staff's mean collective efficacy	0.0	0.1	29	0.18	>.85
Staff's mean mainstreaming experience	-0.7	0.9	29	-0.80	>.43
Principals' attitudes towards inclusion: Social Integration	0.2	0.1	29	1.50	>.14
Principals' collective efficacy	0.0	0.0	29	-0.63	>.53
Principals' mainstreaming experience	1.1	0.6	29	1.98	>.05

Note. *B* = regression weight *SE* = standard error; *df* = degrees of freedom

DISCUSSION

This investigation was intended to show how sense of efficacy and experience affect the attitudes teachers have towards inclusion. Thereby, not only interactions on an individual level, but also how teaching staff and the principal influence the individual as well were considered. It became apparent that a complex structure of conditions was being analyzed, creating a focus upon the school as an system of interacting agents.

As far as differences between schools were concerned, the results confirmed our assumption. We found significant differences between teaching staffs, not only in the area of attitudes, but also concerning individual and collective convictions about efficacy. These results were in line with earlier studies (Urton et al., 2014; Urton, Wilbert, & Hennemann, accepted). The interaction between the teaching staff and the individual teacher points to the effects of norms on attitudes and patterns of behavior. These come to bear within the framework of group interaction (Thomas, 1991; Nijstad & von Knippenberg, 2007) and serve as a possible means of control over the actions of a group's members (Coleman, 1987; 1990). Furthermore, the results confirmed that the individual teacher's and the principal's attitudes were significantly connected (Urton et al., 2014). This is particularly important in light of the results found in previous studies suggesting that a principal, in cooperation with his teaching staff, plays a key role in developing a school towards inclusion (Ainscow, 1999; Ainscow et al. 2013; Leo & Barton, 2006). The congruence of the *mainstreaming experience* between school principal and teaching staff can be seen in connection with the individual school's characteristics, since experience is often gained collectively by the school as a whole through an overall school program which foresees the simultaneous teaching of students with and without SEN.

Contrary to our expectations, and possibly because of methodological factors, there was no connection between the principal and the teaching staff as far as *individual* and *collective efficacy* were concerned. *Self-efficacy* was operationalized dif-

ferently for principals and staff as both have differing tasks to conduct. *Collective efficacy*, however, was assessed through the same set of items. However, it is possible that principals and teachers have different expectations concerning the impending problems and thus respond divergently.

Self-efficacy not only had a positive influence on *attitudes towards remedial education* but also it was the sole provable influence on *attitudes towards social integration* and thereby on the willingness to integrate students with SEN into public schools (Brownell & Pajares, 1999; Weisel & Dror, 2006; Urton, et al., accepted).

One important factor in regard to *attitudes towards remedial education* proves to be the individual experience a teacher has gained, above and beyond his or her experience of self-efficacy. This result corresponds with those put forth by de Boer, Pijl, and Minnaert (2011). They confirmed a relationship between a teacher's practical experience and his convictions about inclusive teaching. This is of importance because individual self-efficacy is gained by active experience in managing a situation (through *mastery experience* as well as *vicarious experience*). In this context, collective efficacy also plays a decisive role. Perceived as a specific reference group's competency in responsible decision-making (Schmitz & Schwarzer, 2002), it can have a positive influence on attitudes.

Contrary to the results of a previous study (Urton et al., 2014), the school principal was not found to have significant influence on his or her teaching staff in regard to *attitudes towards inclusion*. This may be due to all explanatory variance being explained by the attitudes of the teaching staff before attitudes of the principals were added into the regression model. Furthermore, the sample size of the present study and the resulting test power may be too low for showing the incremental effects gained by adding variables at the principals' level as predictors. Thus, the regression model was over-specified. Testing the model by utilizing a greater sample size could possibly lead to information about the influence of the factors investigated on the school principal level.

Further limitations arise from the fact that a cross-sectional design was used, which does not allow for analysis determining causal relations between variables. Therefore, correlational and causal connections cannot be differentiated between attributes at the individual, staff, and school principal level. To clarify this question, further longitudinally designed research is necessary. Furthermore, it is possible that factors other than the ones considered may also exercise an influence regarding attitudes towards inclusion.

This study was conducted in Germany at a time when the idea of inclusion was about to be put into practice. Within the framework of this all-encompassing developmental process, it will also be important to focus on further factors leading to success such as the ones investigated here. Ainscow and Miles (2008), who view the inclusive school as a system constantly involved in change and requiring on-going vigilance, share this postulation. It appears worthwhile to consider in particular the interplay between the various levels and their effects on the attitudes towards inclusion. Looking at the key role played by the school principal (Leithwood & Riehl, 2003; Price, 2012) within a school program embracing inclusion, other questions arise for extended research. Of particular interest are the leadership qualities and skills em-

bodied by a principal who leads his or her school successfully and is concerned about its further positive development.

With regard to teaching staff, further research should focus on factors that influence and enhance a collective experience of efficacy and promote the school's practice of appreciation. Currently, it is unclear what experiences in inclusive education, concerning both individuals as well as teaching staffs, promote positive attitudes and feelings of high level of efficacy.

Apart from the further research-questions which can be pinpointed by the present study, it is evident that successful supervision of the processes in inclusive school development always depends on a consideration of the school's overall framework of circumstances, which concern its principal, its teachers as individuals, and its entire staff.

For promoting a better inclusion of students with SEN, it is important to enable individual teachers, principals, and the teaching staff to cope with difficult and new situations. This may be achieved by enhancing efficacy and positive experience in inclusive education by means of counselling as well as training in the fields of social integration, remedial education, and classroom management.

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