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Relationship between group cohesion and social participation of pupils with learning and behavioural difficulties

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ABSTRACT

Current research has established that inclusive schooling alone cannot ensure the social participation of all children – a central goal of inclusive education. Therefore, this study examines whether the participation of students is dependant on the type of difficulty they experience (learning vs. behavioural) and the degree of class cohesion. Psychometric and sociometric instruments were used to operationalise participation (reciprocal relationships, self-perceived acceptance) and cohesion. Standardised achievement data and teacher assessments of behavioural problems are available for each of the second/third-grade respondents (N = 1025, 46 classes). The data was analysed using multi-level regression analyses. Our results indicate that especially children with behavioural problems represent a risk group in regards to social participation. Class cohesion was positively associated with social participation. The results are discussed with regard to implications for school practice.

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1 Introduction

In addition to optimal learning and achievement development, social participation is one of the main goals of inclusive education (e.g. Grosche 2015). The joint education of all children, in particular, pupils with special educational needs (SEN) is an important step on the way to social participation for all. With the signing of the UN Convention on the Rights of Persons with Disabilities (United Nations 2011) many states, including Germany, embarked on a journey towards an inclusive society and have, towards this end, worked to develop inclusive school systems. A particularly high percentage of children with learning and behavioural difficulties attend inclusive primary schools in Germany (Klemm 2015).

Enabling equal social participation for all children is a fundamentally important societal value in and of itself. However, its importance becomes particularly clear when the consequences for each individual child are considered. One of the most significant benefits is that social participation satisfies the children's need to belong. The need to belong can be regarded as one of the most basic human needs (Baumeister and Leary 1995, 497). Social participation is particularly important for school children because

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students spend a significant amount of time in the school environment. Empirical studies and reviews of social participation in the school context reveal that rejection is associated with negative characteristics including less competent behaviour during conflict, increased aggressiveness, lower cognitive abilities and a variety of health problems (e.g. Hawkley et al. 2003; Peters et al. 2011; Rubin et al. 2006). In contrast, greater social participation is associated with desirable qualities including enjoyment in school, classroom well-being, and better academic achievement (e.g. Martin and Dowson 2009; Molloy, Gest, and Rulison 2010; Wentzel, Baker, and Russell 2014).

This study investigates whether children with learning and behavioural difficulties have sufficient social participation in the classroom at regular primary schools. Is a child's level of participation affected by whether they have behavioural or learning difficulties? Furthermore, it is useful to examine factors at a classroom level that might influence social participation? Therefore, we examine whether class cohesion is connected to individual social participation, especially for children exhibiting challenging behaviour or low achievement.

2 Social participation at school

In the school context, the social participation of pupils refers to their integration into the school community and involvement in school activities both inside and outside the classroom (Farrell 2000). Many empirical studies have investigated the social participation of children with special educational needs (SEN) in inclusive classes. The studies have mapped this complex construct in different ways. Koster et al. (2009) identified four indicators for social participation in a literature review, each of which focuses on a slightly different aspect: (1) presence of positive social contact/interaction, (2) acceptance by others/popularity, (3) reciprocal relationships/friendship, and (4) self-perceived acceptance.

The results of international studies agree that children with SEN are less *accepted/popular* than their typically developing classmates. This finding is valid in various European countries and thus also for different school systems (e.g. Avramidis 2013; Grütter, Meyer, and Glenz 2015; Koster et al. 2010; Nepi et al. 2013; Schwab 2015; Henke et al. 2017; Huber and Wilbert 2012). However, when considering *self-perceived acceptance*, the results are somewhat inconsistent. While some studies have reported that children with and without SEN did not differ in the perception of their own social participation (e.g. Krawinkel et al. 2017; Avramidis 2013; Koster et al. 2010), in other studies children with SEN felt less accepted by their peers (e.g. Huber and Wilbert 2012; Schwab 2016). The findings are also ambiguous when considering *friendship/involvement in reciprocal relationships*. Some studies indicated that children with SEN are well integrated into friendships or cliques (e.g. Avramidis 2010; Grütter, Meyer, and Glenz 2015), but they were also more frequently found to have significantly fewer friends than their typically developing peers (e.g. Huber, Gebhardt, and Schwab 2015; Kavale and Forness 1996; Koster et al. 2010; Schwab 2015).

Most of these previous studies used a categorical approach that compared children 'with SEN' to their classmates 'without SEN'. In some cases, this categorisation was not based on a formal diagnosis but on teacher assessments. Many other studies chose a more global categorisation and did not distinguish between the different domains of

support need within the SEN category. However, the studies that did distinguish between those needing support in different areas revealed that children with behavioural problems reported less participation than children with learning difficulties (e.g. Avramidis 2013; Krull, Wilbert, and Hennemann 2014; Mand 2007; Monchy, Pijl, and Zandberg 2004; Zurbriggen and Venetz 2016).

However, why are children with SEN less integrated into the active part of the class community? This question is often answered with reference to their lack of social competence. Accordingly, individual training is thought to be a useful way to increase the social competence of these children (e.g. Camargo et al. 2014; Nowicki 2003). However, meta-analyses have shown that such interventions have only had a small effect on the children's level of social acceptance (Kavale and Forness 1996; Quinn et al. 1999). Successful social participation is not solely dependent on the individual child but also on his or her possible interaction with partners who may be more or less able to deal with their challenging behaviour or achievement difficulties. This is taken into account in interventions that train individual classmates how to interact with children with SEN supportively. The social participation of children with SEN can also be enhanced through such interventions (Garrote, Sermier Dessemontet, and Moser Opitz 2017). However, both forms of intervention (competence-oriented vs. support-oriented) focus on the child with SEN and thus increase their risk of stigmatisation.

This raises the question of whether it is possible to focus on the learning group as a whole rather than on the child with SEN in order to enable the social participation of all children with equal opportunity. Some studies have already demonstrated that some classes integrate children with SEN more successfully than others (e.g. Huber and Wilbert 2012). This prompts the question, is there a group characteristic that is both changeable and associated with individual social participation? We here argue that class cohesion is one such characteristic.

3 Cohesion

Social participation in school classes is based on the interaction between the pupils. These interactions are – so we assume – promoted when the school class forms a cohesive group. There is a long tradition of research into group cohesion. As early as 1950, Festinger defined group cohesion as 'the resultant of all forces acting on members of groups to remain in the group' (Festinger 1950, 274). He attributed an important role to the attraction that the group members and their common task exert over the individual. Van Bergen and Koekebakker (1959, 366) also emphasised that a cohesive group is characterised by 'a closeness among members, a similarity in the perception of events, and [. . .] a bonding together in response to the outside world'. In a more recent model based on sport, Carron, Widmeyer, and Brawley (1985) consider these two facets together, stating that a cohesive team can be described as follows: (1) focusing on the individual group members, cohesion implies that each member feels strongly attracted to the group (attraction to the group = ATG); and, (2) focusing on the group as a whole, cohesion implies that group members are strongly interconnected through firm positive relationships (group integration = GI). Cohesive groups help their members fulfil the basic human need for belonging (Correll and Park 2005; Johnson et al. 2006). So it seems plausible to assume that cohesion, as a characteristic of the group, fosters the social participation of individual group members.

When applied to the classroom context, this would mean that pupils in a cohesive class enjoy being with their classmates and perceive the class as a unit/whole that consists of closely networked pupils. As a consequence, in a cohesive class, the participation of all should be relatively high. In particular, we assume that the tendency of a cohesive class to see itself as a unit contributes to the fact that children with conspicuous behaviour or learning difficulties are integrated better than they are in less cohesive classes.

4 Purpose of this study

There is empirical evidence that working and learning together with children without SEN is a necessary condition for the social participation of children with learning and developmental disabilities, but that it is not the only requirement. However, results remain inconsistent for reciprocal relationships and self-perceived social acceptance in particular. Furthermore, in the different areas of support needs (learning vs. behavioural problems), the chance of successful social participation varies. It seems plausible that class cohesion may be a group level characteristic that promotes individual social participation.

This study expands previous studies which investigated the participation of children with and without SEN in inclusive primary school classes in three ways:

(1) by checking two participation indicators,

(2) by distinguishing between children with learning vs. behavioural difficulties,

(3) by focusing on cohesion as a factor at the level of the school class.

In our study, we address four research questions.

(Q1) Does social participation depend on students` behavioural and/or learning problems?

(Q2) Does social participation succeed better in cohesive classes?

(Q3) Does the benefit of cohesiveness vary depending on the pupils' degree of behavioural or learning problems?

(Q4) Are there differences depending on which indicator of social participation (self-perceived acceptance vs. reciprocal relationships) is used?

5 Method

5.1 Participants

1025 pupils (51.7% girls) from grades two (47.2%) and three from eleven elementary schools in Germany participated in this study (45 classes, mean age = 7.63, SD = 0.74). The average class size was 23.6 children per class (min: 18, max: 28). Children with a migrant background (determined on the basis of a non-German family language) made up nearly half of the sample (47.7%).

5.2 Administration

Data collection took place as part of project SoPaKo (funded by Deutsche Forschungsgemeinschaft: OP 158/4-1, *So*cial *Par*ticipation through *Co*hesion) . Two standardised school achievement tests were administered on two different days and each test was administered to the whole class as a group test according to the given test instructions. On the first day, the children also filled out a standardised questionnaire. The third-graders completed their questionnaires with the class as a whole, while the second-grade children answered it in small groups of three to six students. Trained test leaders administered the survey using standardised test manuals. The items were read aloud by the test leaders while the children read along quietly and ticked their corresponding answers. During the first day of testing, teachers filled out a questionnaire about the behavioural problems of each child in their class.

To ensure anonymity while at the same time assigning the various instruments to an individual child, the data was coded using a special system.

5.3 Variables and operationalisation

5.3.1 Learning difficulties

Two standardised achievement tests were used to measure the learning difficulties of the pupils. The ELFE II reading test (Lenhard, Lenhard, and Schneider 2017) was used to measure reading fluidity, accuracy, and comprehension. The test only takes a short time (13 minutes) and it is suitable for students in grades two to seven. The raw values of the three reading sub-tests were totalled to give a value for 'reading achievement'. The mathematical skills of the second- and third-graders were tested using DEMAT 1+ and 2 + respectively (Krajewski, Küspert, and Schneider 2002; Krajewski, Liehm, and Schneider 2002). Scores from the DEMAT-sub-tests were totalled to give a value for 'mathematical achievement'. A 'total achievement' score was calculated as the mean values of the mathematics and reading achievement.

5.3.2 Behavioural difficulties

The teacher version of the *Strengths and Difficulties Questionnaire* (SDQ, Goodman 1997) was used to assess the behavioural difficulties of each child. The test consists of five scales each with five items that record both the conspicuous and prosocial behaviour of pupils. A total of 25 items are answered on a three-level Likert scale (0 = 'not applicable', 1 = 'partially applicable', 2 = 'clearly applicable'). Cronbach's alpha for all subscales is in the range above .741 (see Table 1). The items of all four 'problem scales' were totalled with high values indicating conspicuous behaviour.

5.3.3 Cohesion

As yet, no concept for measuring cohesion has been developed in the context of school research. Instead, cohesion is assessed as one of the aspects of the broader construct of class climate (e.g. Fraser, Anderson, and Walberg 1982). In particular, no systematic distinction has yet been made between individual and group focus, even though this also seems to be meaningful for cohesion in school classes. In their analysis of a total of 210 articles, Grossman et al. (2015, 155) come to the conclusion that 'assessing both the

Table 1. Scale documentation.

Scale		Example item	Number of items	Cronbach's α	M (SD)
GruKo4 – Cohesion	GI	In my class, we all stick together well.	3	.768	3.33 (0.75)
	ATG	I like the children in my class.	5	.796	3.50 (0.60)
participation	self perception	Other children in my class let me join in when playing in the schoolyard.	6	.829	3.31 (0.70)
SDQ	emotional problems	Has many fears, is easily afraid.	5	.795	0.31 (0.41)
	behavioural problems	Often has rage attacks.	5	.789	0.34 (0.48)
	hyperactivity problems	Constantly fidgety.	5	.874	0.67 (0.58)
	problems with peers	Lonely, mostly plays alone.	5	.741	0.33 (0.38)

Note. The mean values (M) of the SDQ subscales can be between 0 and 2. The higher the value, the higher the problem behaviour. The other mean values are between 1 and 4. Standard deviation (SD)

individual- and the team/class-level matters for cohesion measurement'. Therefore, we measured the two cohesion facets (ATG at individual level and GI at class level) using a sociometric as well as a psychometric measure.

5.3.4 Sociometric assessment

To assess ATG, pupils were asked 'How much do you like playing with the children in your class?' The pupils received a list with the names of their classmates. They rated each child on a five-point rating scale with answers from 'like not at all' to 'like a lot'. The ratings each child gave their classmates as play partners were then combined into a mean score (variable: *Rating-ATG*). The higher the value, the more attractive the classmates are as partners for playing.

After the rating procedure, the pupils were asked to identify as many children as they wanted as their 'most frequent playing partners' by ticking their names on a list. This nomination data was used to compute network density as an indicator of the GI facet of cohesion (variable: *Density-GI*). The density reflects the proportion of realised nominations from all possible nominations in the network. The higher the density value, the more interconnected and thus more cohesive the class is.

5.3.5 Psychometric assessment

Cohesion was measured by two scales of the GruKo4 (Schürer, van Ophuysen, and Behrmann 2021). The *ATG Subscale* consists of five items, the *GI Subscale* consists of three items (variables: *Scale-ATG, Scale-GI*). Each item is addressed using a four-level rating scale ((1) 'not true at all' to (4) 'exactly true'). Cronbach's alpha is satisfactory (*Scale-ATG*: α = .796, *Scale-GI*: α = .768, see Table 1). For the ATG facet, the mean value was calculated at the individual level. For the GI facet, the mean value was aggregated at the class level.

5.3.6 Social participation

5.3.6.1 Sociometric assessment. The nomination data was also used to operationalise reciprocal *playing partnerships* as a facet of participation. The number of mutual nominations was counted and standardised for each child according to class size. Scores could vary between 0 and 1 with higher values representing more reciprocal relationships and thus better social participation.

5.3.6.2 Psychometric assessment. *Self-perception* of social participation was assessed with the subscale 'social integration' of FEESS 1–2 (Rauer and Schuck 2004). This subscale consists of seven items and records how much a child feels accepted by his or her classmates. All items were answered on a four-point rating scale ((1) 'not true at all' to (4) 'exactly true'). Cronbach's alpha is in a good range (α = .829, see Table 1). The scale score for each child was calculated as the mean across these four items. The higher the value, the more accepted the children feel by their classmates.

5.4 Analysis

Taking into account the two-level structure of the data (students clustered into classes), hierarchical linear models were adjusted using the Full Information Maximum Likelihood

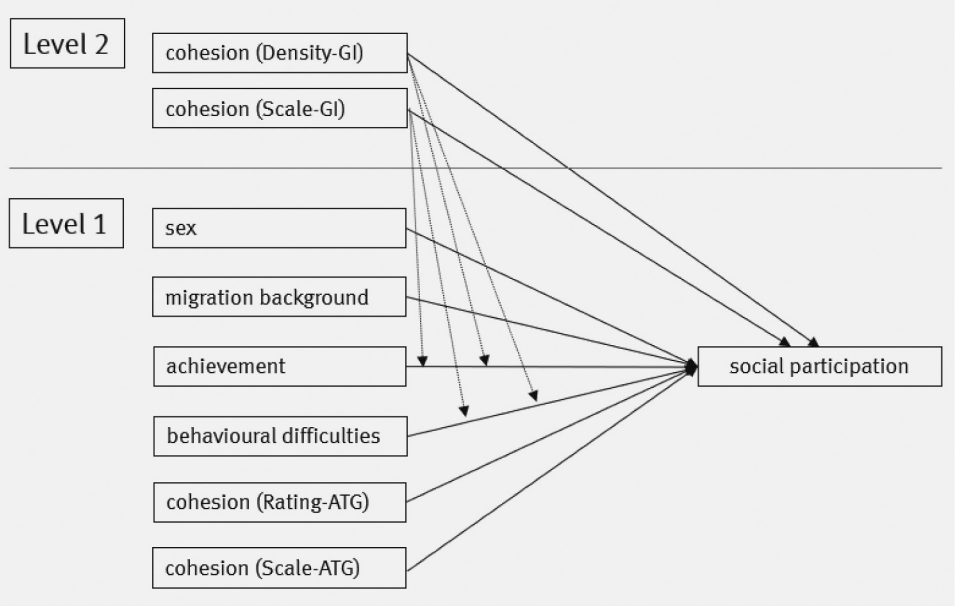

Figure 1. Model for predicting social participation.

(FIML) estimation with robust standard errors with the software Mplus 7 (Muthén and Muthén 1998-2018).

As a first step, an intercept-only model without any predictors was estimated as a zero model for each dependent variable to determine the intraclass correlation coefficient (ICC). These models provide estimates for variance proportions at both the individual level (level 1) and the classroom level (level 2).

In a second step, models with predictors at both level 1 and level 2 were adjusted. Gender and migration background were included as control variables. Both were dummy coded with 'female' and 'no migration background' as reference groups. In order to answer the questions about the effects of behavioural and learning problems on participation (Q1), measures of behavioural problems (SDQ) and school achievement (mean of DEMAT and ELFE) were used as predictors of individual social participation at level 1. With regard to the effect of cohesiveness on social participation (Q2), the two measures of ATG (*Rating-ATG* & *Scale-ATG*) were included at level 1, while measures of GI (*Density-GI* & *Scale-GI*) were included at level 2. All continuous variables at level 1 were z-standardised per classroom while cohesion measures at level 2 were z-standardised with reference to the total sample. The group mean centring of the level 1 variables enables a meaningful interpretation of the values. For example, a pupil with a value of 0 on the class-centred variable 'achievement' has an average achievement in his or her class. Negative values indicate below-average achievement in this class, positive values indicate above-average achievement in this class. Finally, the question of whether the cohesion effect on participation depends on the individual pupil's degree of learning or behavioural problems (Q3) was addressed by cross-level interactions.

Figure 1 shows the model.

As we assumed different effects depending on the operationalisation of participation (Q4), we adjusted models for two dependent variables: *playing partnership* and *self-perception*.

6 Results

Table 2 shows the ICCs of the various dependent variables. The ICC is lower for the self-perception of participation (.036) than for the sociometric measure (.191).

Self-perception (see Table 3): As expected, the self-perception of social participation decreases with increasing behavioural problems (*SDQ*: β = −0.065, p = .001). In contrast, achievement is not significantly associated with the self-perception of social participation (*Achievement*: β = −0.004, p = .842). There is a significant effect on the self-perception of participation for both cohesion variables at the individual level (*Scale-ATG*: β = 0.378, p < .001; *Rating-ATG*: β = 0.083, p < .001). The more attracted children are to their classmates and the better they rate their social interactions with the class, the more positively they perceive their own social participation. At the group level, only *Scale-GI*, not *Density-GI*, predicts the self-perception of social participation (β = 0.142, p < .001). There are no cross-level interactions. The model explains 40% of the variance at the individual level and 53% of the variance at the group level.

Table 2. Estimation of the 'zero models' to determine the level-specific variance shares for the indicators of social participation.

Dependent Variables 'Social Participation'	N	ICC	Variance on	
			Individual level	Group level
Self-perception	1001	.036	0.470	0.017
Playing partnerships	999	.191	0.006	0.001

Note. ICC (Intraclass Correlation Coefficient)

Table 3. Random intercept and slope model – social participation.

	Self-perception		Playing partnerships	
	beta	S.E.	beta	S.E.
Intercept	3.356	0.028	0.102	0.005
Individual level				
Sex	−0.067	0.037	0.012	0.007
Migration	−0.056	0.045	−0.007	0.005
Scale-ATG	0.378***	0.029	<.001	0.003
Rating-ATG	0.083***	0.019	0.015***	0.003
Behaviour (SDQ)	−0.065**	0.020	−0.021***	0.003
Achievement	−0.004	0.019	0.006	0.003
Class level				
Scale-GI	0.142***	0.016	<.001	0.003
Density-GI	0.001	0.018	0.033***	0.003
Cross-level interaction				
Scale-GI×SDQ	0.014	0.025	0.003	0.002
Scale-GI×Achievement	0.003	0.014	0.001	0.002
Density-GI×SDQ	−0.025	0.017	−0.009**	0.003
Density-GI×Achievement	−0.029	0.017	−0.009**	0.003
Variance				
Individual level	0.281	0.021	0.005	<.001
Class level	0.008	0.006	<.001	<.001

Note. ***p < .001, ** p < .01, * p < .05, N = 975.

Playing partnerships (see Table 3): Behavioural problems are significantly predictive of the number of playing partnerships. Higher *SDQ* scores coincide with fewer playing partnerships (*SDQ*: β = −0.021, p < .001). Again, there is no effect on achievement (*Achievement*: β = 0.006, p = .059). In this model, significant effects only occur for the sociometric cohesion variables, not for the psychometric cohesion variables. At the individual level, the average popularity of fellow students is predictive of the playing partnerships (*Rating-ATG*: β = 0.015, p < .001). At the group level, the density of the class network is predictive (*Density-GI*: β = 0.033, p < .001). Furthermore, there are two cross-level interactions. In cohesive classes, the effect of achievement on social participation is reduced (*Density-GI* × *Achievement*: β = −0.009, p < .01). However, it can also be seen that the negative effect of the SDQ on social participation in cohesive classes is intensified (*Density-GI* × *SDQ*: β = −0.009, p < .01). Overall, this model explains almost 17% of the variance of playing partnerships at the individual level. At the group level, the variance was reduced by 70%.

7 Discussion

Our analysis revealed, that students with learning and/or behavioural problems experienced less social participation in comparison to their classmates with better academic achievement and/or better adjusted behaviour (Q1). We also found confirmation of our assumption that the more cohesive the classes were, the higher was – on average – the individual social participation (Q2). However, pupils with learning and/or behavioural difficulties did not benefit more than others from class cohesion. On the contrary, there was initial evidence that in cohesive classes behavioural problems were even associated with less social participation (Q3). Finally, the results were slightly different depending on which indicator of social participation was used (Q4).

7.1 Differentiation between two indicators of social participation and two types of difficulties (learning vs. behaviour)

As in previous studies, our findings confirm that children with behavioural problems belong to a risk group in regard to social participation. They feel less involved and show less reciprocal playing partnerships. However, poorly performing children report feeling just as well integrated into social activities as their classmates. This confirms the findings of Zurbriggen and Venetz (2016) who found a negative correlation of self-perceived social participation with behavioural problems but not with school achievement. These positive results for the self-perception of social participation for children with poor school achievement are confirmed by the sociometric measure. Achievement is not predictive of the number of reciprocal playing partnerships. This corresponds with studies from the international field in which no differences were found between children with and without SEN in relation to reciprocal playing partnerships or friendships (e.g. Avramidis 2010; Grütter, Meyer, and Glenz 2015), but contradicts the findings of other studies (e.g. Henke et al. 2017) that show significant disadvantages for children with SEN. However, due, first, to the different types of relations (playing partner, friend, seat neighbour) and, second, to the different operationalisations of SEN respectively behavioural and learning problems it is difficult to compare these findings directly.

Our results underline that a differentiated consideration of the group of children with different types of SEN respectively different kinds of difficulties, is necessary. The findings clearly show that children with behavioural problems, in particular, have disadvantages regarding social participation. This coincides with findings by Monchy, Pijl, and Zandberg (2004) and Avramidis (2013), who also found disadvantages for children with SEN in the area of behaviour compared to children whose SEN focus on learning. Therefore, teachers should closely monitor the integration of these children into the peer group.

In contrast, our findings are rather encouraging for children with weak school performance. Even though it must not be forgotten that studies about acceptance by peers clearly indicate that these children are less accepted and more often excluded (e.g. Avramidis 2013), inclusion in reciprocal relationships seems to work well for this group of students in primary school and, as a consequence, they feel well accepted by their classmates. However, this effect might not be long lasting and acceptance could decrease as soon as grades and academic achievement become a more important aspect of school life, as they usually do in secondary school. It appears problematic that studies on the social participation of children in secondary school with a differentiated view on the type of difficulties (learning vs. behaviour) are currently still rare (Kröske 2020). For self-perceived social participation, Kröske (2020) shows that the SEN status 'behaviour' is particularly predictive. For the SEN status 'learning', there is a smaller effect that becomes insignificant when other predictors are added to the model (e.g. perceived support). The author concludes that the pupils with impairments have less aspiration to participate in social activities with the result that they report a subjectively comparable self-perception of participation despite fewer interactions. However, given the limited evidence available, more studies need to investigate the development of different participation measures over time for pupils with different types of difficulties.

7.2 Effect of cohesion on social participation

These analysis support our assumption that social participation is higher in cohesive classes, although we cannot yet draw any causal conclusions. Ultimately, both social participation and class cohesion are based on the individual child's relationships and interactions that need to be strengthened. Regarding the benefits of cohesive classes, especially for children with learning or behavioural problems, the findings are ambiguous. For self-perceived participation, there are no particular effects for children with special needs. The results are different when reciprocal relationships are taken into account. While there is a positive relationship between cohesion and the relationship between participation and performance, there is a negative effect on the relationship between participation and problematic behaviour. In cohesive classes, the negative correlation of achievement test scores or SDQ scores with the number of reciprocal relationships – i.e. the effect that children with more problems in learning or behaviour are involved in fewer playing partnerships – is reduced for weak learners but increased for children with problematic behaviour. A plausible explanation for this effect could be that children follow common rules and norms, especially in cohesive classes. In a cohesive class, if a child constantly deviates from the rules and norms, there is a higher risk the child will be excluded.

Although the cross-level effect is small and should not be overemphasised, it is a preliminary indication that class cohesion may also have a 'dark side' – at least for children whose behaviour is challenging for their peers and the class community. Negative effects of cohesion have also been reported in other contexts, for example with regard to group performance in work teams (Wise 2014).

Some initial considerations for school practice can be derived from these findings. The teacher's primary goal should be to integrate all children into the class community in order to avoid the negative consequences associated with not satisfying the children's need to belong: this spiral of negatively influencing consequences must be interrupted. Increasing the number and quality of pupil relationships is central to promoting individual social participation. Measures taken at the class level to foster cohesion, for example, team building activities, may be useful because they focus on the establishment of relationships and, therefore, prevent the stigmatisation of individual children. However, in doing so, teachers should closely monitor children with behavioural difficulties in particular. For children who show serious behavioural problems, there is probably no adequate alternative to individual training to, for example, strengthen social skills.

7.3 Limitations and implications for future directions

Given the cross-sectional study design, no causal conclusions can be drawn. Nevertheless, the results indicate that strong class cohesion implies a high number of positive relationships and is therefore positively associated with social participation. In future studies, a longitudinal waiting-control group design could be used to examine whether positive effects on social participation can be achieved through interventions that improve class cohesion.

The distinction between different support needs in our study was revealing and could be differentiated more deeply in the future. Further studies could examine the situation of children with behavioural problems in more detail as it is a heterogeneous group including children with externalising as well as internalising problem behaviour. For example, Ahn, Garandeau, and Rodkin (2010) showed that the popularity of aggressive compared to victimised primary school students depends on the hierarchical structure (embeddedness) and density of the class.

In contrast to previous studies, we did not categorise children as having vs. not having SEN. Instead, we used the results from standardised school achievement tests and teacher assessments of behaviour as continuous measures that inform about the (weak) performance and (problematic) behaviour of each child. This is compatible with the decategorizing practice of mainstream primary schools that largely dispenses with the formal diagnosis of SEN. However, further analyses would have to clarify the extent to which the assumption of a linear relationship with social participation is tenable or whether threshold models might show a better fit with the data here. Furthermore, the use of the SDQ can be looked at critically. It can be asked whether there is a risk that biases may lead teachers to label students that they find difficult to teach. In order to check for the possibility of such a bias, future studies could use student and parent questionnaires in addition to teacher questionnaires.

In contrast to other studies in the school context, we used a differentiated operationalisation of class cohesion based on a theoretically sound model and the class level

measure of density represents a first attempt to operationalise cohesion using sociometric data. Although the density is a standardised value, the class size must be considered in the interpretation. As each child can only realise a limited number of relationships, the chance of a higher density (i.e. that many of the possible relationships are realised) is greater in smaller groups than in larger groups. With increasing group size, the density inevitably decreases (Jansen 2006). However, as the classes are similar in size in our study, this should not have a strong effect here. Nevertheless, other sociometric indices could be used as alternatives (for example the number of cliques or components, indices for network centralisation, or distance measures, e.g. Jansen 2006). The integration of different cohesion measures into a theoretically sound cohesion model for the school context is particularly important. This is necessary in order to ensure that the research into cohesion within the school context cannot be subject to the same criticism that Mudrack (1989) levelled at earlier handlings of the cohesion concept, which he descriped as 'dominated by confusion, inconsistency, and almost inexcusable sloppiness with regard to defining the construct'.

Our analysis incorporated two important indicators of social participation which have, to date, returned contradictory findings, self-perceived acceptance and reciprocal relationships. Thus, the present study was able to expand the state of research in this area. However, a sophisticated theoretical model for the construct of social participation does not yet exist. Therefore, various indicators stand next to each other but remain unconnected. This complicates the classification and interpretation, as well as the comparison of findings, based on different indicators. When is social participation 'successful'? Is involvement in one or two positive reciprocal relationships enough? Is it necessary to be accepted by all children in the class? Or is it that the child does not experience rejection or bullying that is important?

Despite these outstanding questions, the present study provides initial evidence for the significance of the cohesion construct. In future studies, further attention should be paid to this construct in order to more closely examine the connection between the different measures of cohesion and various indicators of social participation.

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