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## **The impact of a cooperative learning experience on pupils' popularity, non-cooperativeness, and interethnic bias in multiethnic elementary schools**

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In this study we investigated popularity and perceived non-cooperativeness in multiethnic elementary schools. A sample of 94 pupils aged 10–12 years, from five multiethnic elementary schools, were divided into 26 teams and participated in a structured cooperative learning (SCL) curriculum of 11 lessons. Neither teachers nor pupils had prior SCL experience. The results show that SCL time increased popularity and decreased perceived non-cooperativeness across ethnic backgrounds. In addition, experience with SCL enhanced the popularity of immigrant pupils and decreased differences in perceived non-cooperativeness between immigrant and non-immigrant pupils. Importantly, SCL time only raised popularity and decreased perceived non-cooperativeness within ethnically heterogeneous teams. This last result extends the notion that enduring interethnic contact is fruitful for interethnic friendships.

**Keywords:** cooperative learning experience; popularity; perceived non-cooperativeness; interethnic bias; multiethnic elementary schools

### **Introduction**

Research has revealed that the segregation of groups decreases the quality of intergroup relations (Sherif, White, & Harvey, 1955). Bettencourt, Dorr, Charlton, and Hume (2001) and Dembo and McAuliffe (1987) showed that mere perception of distinguishable groups suffices to increase both intragroup cooperation and intergroup competition. Various studies have demonstrated that ethnicity is one of the most powerful facilitators of the perception of distinguishable groups (Garza & Santos, 1991; Kirchmeyer, 1993; Nessdale, Maass, Griffiths, & Durkin, 2003) and is related to social status differences (e.g., Warring, Johnson, Maruyama, & Johnson, 1985). In this study we use the term 'interethnic bias' to refer to situations in which individuals favour people with the same ethnicity over people with a different ethnicity.

Most of the studies of interethnic bias have been carried out among students and adults. These studies have been constructed in such a way that conditions that might decrease interethnic bias can be controlled and manipulated. As such, researchers have investigated the optimal conditions under which interethnic bias is decreased (Dixon, Durrheim, & Tredoux, 2005). Phinney, Ferguson, and Tate (1997) have argued that although studies in this type of setting have provided important insights, the real challenge lies in investigating interethnic bias in everyday educational settings, where the optimal conditions for reducing interethnic bias are usually not attainable.

Following Dixon et al. (2005), we argue that interethnic bias in educational settings like multicultural schools demands more scientific attention. In the Netherlands, interethnic bias occurs on a daily basis in a great number of multiethnic schools, most of which are located in the densely populated western part of the country (Gijsberts, 2004). One of the major challenges

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these schools face is how to promote friendship and cooperation among students with different ethnic backgrounds. Gijsberts (2004) has emphasized that an increase in number of immigrants is accompanied by increased segregation, especially in large cities. Increased segregation in urban areas is a widespread phenomenon in many countries, like the USA (for a recent study, see Shelton & Richeson, 2005) and the UK (Dixon et al., 2005). This phenomenon calls for research into interethnic bias in the multiethnic setting.

A number of researchers have claimed that interethnic exposure time is an effective means of decreasing interethnic bias. For instance, Eller and Abrams (2004) carried out a longitudinal study to investigate the effect of exposure time on interethnic bias among students. They found support for Pettigrew's (1998) prediction that friendship is crucial in the reduction of interethnic bias. McGlothlin and Killen (2005) studied interethnic bias among elementary school children by asking children to rate the similarity and potential for friendship of a number of children who were depicted on cards. The depicted children did not represent real peers. They found that intergroup contact was positively related to perceptions of similarity and friendships.

Our study differs from the McGlothlin and Killen (2005) study in that we investigated interethnic bias in the classroom among real peers. In line with Eller and Abrams (2004), we assessed interethnic bias multiple times. Our study differs from Eller and Abrams in that we used two measures of interethnic bias: interethnic popularity and perceived interethnic non-cooperativeness. Different from both McGlothlin and Killen (2005) and Eller and Abrams (2004), we set up a structured cooperative learning (SCL) curriculum to study the effect of a shared SCL experience on interethnic bias. An SCL setting is defined here as an educational method in which pupils are placed in small groups (typically tetrads), work on assignments that require them to work together, and are trained in how to give and receive verbal help, following Webb and colleagues (Webb & Farivar, 1994; Webb, Troper, & Fall, 1995).

In addition to interethnic bias, we studied how an SCL experience is related to changes in the intragroup social status (as measured by popularity and perceived non-cooperativeness). Several studies have found positive relations between time spent in a SCL setting and intragroup cooperation (Gillies & Ashman, 1997; Johnson & Johnson, 1994) and popularity (Wright, Giammarino, & Parad, 1986).

In the remainder of this Introduction we present the contact hypothesis as our theoretical framework, explore the extent to which this hypothesis is supported by earlier studies in educational settings, and explain how we investigated it in this study.

### ***Theoretical background: the intergroup contact hypothesis***

Allport (1954) proposed the intergroup contact hypothesis to explain interethnic bias. The contact hypothesis states that grouping people with different ethnic backgrounds is not enough to oppose bias. Interethnic bias will only be countered when four criteria are met. These are: cooperation instead of competition, equal status, common goals, and support of authorities and institutions (Allport, 1954; Van Dick et al., 2004). A meta-analysis carried out by Pettigrew and Tropp (2006) provided support for the importance of the four criteria specified by Allport. However, Pettigrew and Tropp also demonstrated that the four criteria are not essential for a reduction in interethnic bias. Rather, their presence facilitates positive interethnic relations. Pettigrew and Tropp asserted that it is not the presence of the four conditions, but the exposure time to ethnically distinct groups that is essential for a decrease in bias. That is, the more people from different ethnic groups get to know each other, the more they are inclined to like each other. As such, the contact hypothesis is interpreted as a longitudinal model, in which a fifth criterion, the opportunity to let people become friends, is the core feature (see also Pettigrew, 1998). This notion has received support from other studies (e.g., Eller & Abrams, 2004).

### ***Operationalizing interethnic bias***

As mentioned, most studies have investigated interethnic bias by asking pupils whether or not they think they can become friends with someone from a different ethnic background in a direct teaching setting (e.g., McGlothlin & Killen, 2005). Few studies have investigated interethnic bias in a multicultural SCL context (e.g., Slavin & Cooper, 1999), although Warring et al. (1985) did show that SCL increased the number of pupils' interethnic activities (school-related activities or activities at home). Johnson, Johnson, and Tiffany (1984) demonstrated that SCL strengthened interethnic acceptance and support. Little is known about the influence of SCL experiences on interethnic perceptions of non-cooperativeness and popularity. This is remarkable, since the perception of cooperative and popular team peers is likely to affect group productivity (Gillies & Ashman, 1997; Johnson & Johnson, 1994).

Popularity is usually measured by asking pupils to nominate those pupils in the classroom that they like most and least. The popularity status of a given student is then calculated by subtracting the standardized unpopular scores from the standardized popular scores. This nomination method has some drawbacks. First, some researchers maintain that the use of nominations gives a distorted impression of pupils' popularity status, since pupils most often only think about who they like most (for a discussion see Maassen & Verschueren, 2005). Second, there is evidence to suggest that what researchers define as popularity is not the same as what pupils understand it to be: that is, the traditional operationalization of popularity is argued to lack ecological validity (for more detailed discussion see Babad, 2001; Košir & Pečjak, 2005). Babad argued that this 'classic' method of inferring popularity is an indirect measure, since only pupils' personal liking and disliking of classroom peers is measured. Babad proposed a more direct and valid measure of popularity status, which he coined 'judgmental sociometry'. In judgmental sociometry, pupils are asked to nominate those classroom peers they perceive to be the most representative of a social construct. Babad's study suggested that assessing the degree to which pupils are seen as well liked by everyone is a more valid operationalization of popularity.

An American study by Coie, Dodge, and Copotelli (1982) suggested that immigrant students in general are less popular than white pupils since they form a minority group (see also Kistner, Metzler, Gatlin, & Risi, 1993). We argue that with prolonged exposure to SCL the popularity of immigrant pupils increases, as compared to that of non-immigrant pupils.

Perceived non-cooperativeness is another way to assess interethnic bias. This is measured by asking pupils to nominate team members they perceive to be non-cooperative during SCL. Research has shown that SCL time is positively related to a rise in pupils' cooperativeness (Gillies & Ashman, 1997; Johnson & Johnson, 1994). An American study by Hallinan and Teixeira (1987) demonstrated that black pupils were more positive towards other pupils in their team than were white pupils. Other studies have revealed that SCL experience can boost the popularity of immigrant pupils and decrease the differences between non-immigrant and immigrant pupils as regards interethnic perceptions of cooperativeness (e.g., Slavin & Cooper, 1999).

### ***Research design and hypotheses***

We test three hypotheses in this paper.

First, we attempt to corroborate the findings of other researchers (e.g., Gillies & Ashman, 1997; Wright et al., 1986) that SCL time is positively related to pupils' perceived popularity and negatively related to pupils' perceived non-cooperativeness. Second, based on Slavin and Cooper's results (1999), we hypothesize that SCL experience augments the popularity of immigrant pupils and decreases the difference in perceived non-cooperativeness between non-immigrant and immigrant pupils. Third, we hypothesize that SCL experience heightens popularity within ethnically heterogeneous teams and lowers perceived non-cooperativeness. In order to do so we contrast

ethnically heterogeneous teams and ethnically homogeneous teams. A difference between these two types of team clarifies whether or not the salience of ethnicity diminishes as a function of SCL time. We hypothesize that popularity increases as a function of SCL time whereas perceived non-cooperativeness decreases as a function of SCL time, and that this will hold true in ethnically heterogeneous teams only.

## Method

### *Sample*

An SCL curriculum of 11 lessons was delivered in the fifth grade of five elementary schools. The classes studied all had a multiethnic composition (i.e., at least 25% of the pupils were immigrants). The first two lessons of this curriculum covered SCL training and pupils were instructed in basic SCL rules and helping behaviour. Then for the rest of the lessons, the pupils worked in teams on maths assignments.

The five classes consisted of 94 pupils (mean age 135.2 months, *SD* 6.9; 43 non-immigrant, 51 immigrant pupils; 51 boys and 43 girls), who were placed in teams of three or four. In total, there were 26 teams. The teachers put the teams together such that pupils had comparable mathematical and linguistic skills (determined on the basis of class grades) and were of roughly the same age. In terms of ethnicity, 18 teams were heterogeneous and eight teams were homogeneous (i.e., either all non-immigrant or all immigrant pupils). The composition of the teams remained fixed throughout. All teachers indicated that their teaching methods were direct. Additionally, both teachers and pupils reported having no prior experience of SCL.

### *Instrumentation*

The social status questionnaire consisted of two scales: popularity and perceived non-cooperativeness.

#### *Popularity*

The popularity scale was filled in twice by all pupils: at the start of the SCL curriculum (Pop1) and at the end (Pop2). Pupils were required to rate their team members as perceived by the whole class on the behavioural characteristic 'is well liked by everyone'. Scores were averaged per pupil (excluding their own scores). Scores ranged from 0 to 40.

Assessment of the psychometric properties of instruments that aim to measure popularity is notoriously difficult (for a discussion see Terry, 2000). A great many studies use multiple measurements of popularity, as is the case in the present study. A compelling question regarding multiple measurements is whether test-retest stability is satisfactory – that is, whether students' scores at the second measurement of popularity can be accurately predicted on the basis of the scores obtained at the first measurement. An extensive literature review by Cillessen, Bukowski, and Haselager (2000) found that popularity categories showed satisfactory short-term stability. In addition, Jiang and Cillessen (2005) demonstrated in a meta-analysis that continuous popularity inventories also have good test-retest reliability and are more stable than categorical types of popularity classification.

#### *Perceived non-cooperativeness*

From the fourth lesson onwards, pupils filled in a checklist at the end of every lesson about how well they had implemented the basic SCL rules and rules on giving and receiving help (as they had been taught in the SCL training). All pupils completed eight checklists. The pupils were

required on this checklist to nominate team members who did not implement the SCL rules by writing down the name(s) of these team members. We recorded the number of times in every lesson that a pupil was nominated as non-cooperative by his or her team peers. Scores ranged from 0 to 3.

### ***Fidelity check***

All five teachers were videotaped twice during the SCL maths curriculum. Lessons were randomly selected for videotaping, and the teachers were not told in advance which SCL lessons we would videotape. Two scorers rated the videotapes with a coding scheme that consisted of 14 items. One of the scorers was double blind to the experimental manipulation. A principal component analysis with varimax rotation was applied. It explained 62% of the variance and all factor loadings were .50 or higher. Factor 1 (six items, Cronbach's  $\alpha = .71$ ) concerned whole-class reflection on group work (e.g., 'Did the teacher reflect on group performance in the prior lesson?'). Factor 2 (eight items, Cronbach's  $\alpha = .86$ ) concerned the teacher's activities during the group work (e.g., 'Did the teacher encourage group members to ask each other questions?'). The items were rated on three-point Likert-scale (1 = 'little' to 3 = 'often'). Inter-coder reliability (calculated over approximately 15% of the videotapes) was satisfactory: kappas were .73 for Factor 1 and .62 for Factor 2.

### ***Procedure***

The SCL curriculum consisted of 11 lessons, each lasting one hour. The five participating teachers were first instructed by the first author how to teach in a SCL setting, in a mini-workshop lasting two hours. Then the teachers taught their pupils the rules for effective SCL, over the course of two lessons. In the first lesson, the basic rules of SCL were introduced (everyone cooperates, everyone listens to each other, everyone shares their knowledge and opinions, and check whether everyone agrees). These rules were practiced in an exercise, requiring pupils to build a bridge between their tables that could bear a small weight. In the second lesson, pupils were taught rules about giving and receiving help, which were adapted from studies carried out by Webb and colleagues (Webb & Farivar, 1994; Webb et al., 1995). These rules included, for example, ask precise questions and give help when needed. Subsequently, pupils practiced the SCL rules in a cooperative maths assignment.

From the third lesson onwards, pupils completed similar cooperative maths assignments in fixed teams, under teacher supervision. In each lesson two authentic maths assignments with a common theme (e.g., the zoo) had to be solved. Authentic maths assignments are mathematical tasks with a strong narrative structure that are embedded in contexts familiar to the children; multiple solutions are possible. We used these assignments because research has demonstrated that assignments with multiple solutions stimulate pupils' motivation to cooperate (e.g., Chizhik, 2001; Cohen, 1994). Pupils were assured that their job consisted of understanding rather than completing the assignments.

### ***Analytical perspective***

The hypothesis that SCL time is positively related to pupils' popularity and negatively related to pupils' perceived non-cooperativeness was analyzed for each child individually. Nevertheless, since individual scores are not truly independent from each other in an SCL setting, an explorative analysis of the relationship of SCL time with popularity and perceived non-cooperativeness at the group level was also incorporated. We performed analyses at the group level in an attempt to corroborate the findings we found at the individual level.

Due to the small sample size, the relationship of helping behaviour with post-test maths performance could not be evaluated using a multilevel approach. Inspired by earlier studies using a similar approach (Gillies & Ashman, 2000; Webb & Farivar, 1994), we conducted analyses at the group level by aggregating the individual scores for each team.

The hypothesis that SCL time only affects popularity and perceived non-cooperativeness within ethnically heterogeneous teams was analyzed at the group level.

Results

A Pearson’s correlation test revealed that there was no significant correlation between perceived non-cooperativeness and popularity.

A fidelity check was performed to ensure that the CL had been structured. An average score of 1 or lower was considered to represent unstructured CL (i.e., the teacher provided little whole-class reflections on the group work and did little to manage the group work). The coders rated the teachers at significantly above 1 on whole-class reflections on the group work ( $t[13] = 3.48, p < .005$ ) and on actively managing the group work during the CL lesson ( $t[13] = 6.60, p < .001$ ).

**Hypothesis 1: SCL time is positively related to pupils’ popularity and negatively related to pupils’ perceived non-cooperativeness**

*Popularity*

Pupils generally rated their fellow team members as more popular at the end of the SCL curriculum than at the beginning (Wilks’  $F[1,93] = 5.37, p < .03, \eta^2 = .06$ ). See Table 1 for the mean popularity scores of the pupils.

*Perceived non-cooperativeness*

We found that the frequency with which pupils nominated fellow team members as non-cooperative decreased as a function of SCL time (Wilks’  $F[7,87] = 5.63, p < .001, \eta^2 = .31$ ; see Table 1).

*Popularity at the group level*

SCL time positively influenced the popularity scores of teams ( $t[25] = -3.02, p < .007$ ). Thus, team members gave higher scores to each other at the end of the SCL curriculum than at the start of the SCL curriculum.

*Perceived non-cooperativeness at the group level*

To research the relation between SCL time and non-cooperativeness nominations, we combined nominations to create three new variables: T1 (averaged nomination on the first three

Table 1. Sample characteristics and scores on the social status questionnaire.

| Ethnicity         | Gender    | Pop1 (SD)     | Pop2 (SD)     | Perceived                         | Perceived                         |
|-------------------|-----------|---------------|---------------|-----------------------------------|-----------------------------------|
|                   |           |               |               | non-cooperativeness<br>at T1 (SD) | non-cooperativeness<br>at T2 (SD) |
| Non-immigrant: 43 | Boys: 25  | 20.48 (12.51) | 23.65 (11.80) | .49 (.60)                         | .19 (.28)                         |
|                   | Girls: 18 |               |               |                                   |                                   |
| Immigrant: 51     | Boys: 26  | 18.56 (11.54) | 19.75 (11.74) | .19 (.31)                         | .10 (.19)                         |
|                   | Girls: 25 |               |               |                                   |                                   |



measurements), T2 (averaged nomination on the fourth to sixth measurements), and T3 (averaged nomination for the last three measurements). A repeated measures test showed that the non-cooperativeness nominations decreased as a function of time ( $F[2,26] = 6.58, p < .006, \eta^2 = .35$ ). A Friedman test corroborated this finding ( $\chi^2[26] = 10.64, df = 2, p < .006$ ).

***Hypothesis 2: SCL time augments the popularity of immigrant pupils and levels off the difference in perceived non-cooperativeness between non-immigrant and immigrant pupils***

*Popularity*

A repeated measures test revealed an effect for non-immigrant pupils (Wilks'  $F[1,42] = 11.29, p < .003, \eta^2 = .21$ ): they were liked more at the end of the SCL curriculum than at the beginning. No such effect occurred for immigrant pupils.

*Perceived non-cooperativeness*

A repeated measures test was performed with ethnicity as the independent variable and nominations from the perceived non-cooperativeness checklist as the dependent variable. The analysis revealed a significant effect (Wilks'  $F[7,84] = 2.50, p < .03, \eta^2 = .17$ ): the difference in perceived non-cooperativeness between non-immigrant and immigrant pupils decreased as a function of SCL time. The difference between non-immigrant and immigrant pupils was significant at the start of the SCL curriculum ( $t[92] = 2.97, p < .005$ ), with non-immigrant pupils receiving more non-cooperativeness nominations than immigrant pupils. At the end of the curriculum, the difference between non-immigrant pupils and immigrant pupils was no longer significant ( $t[92] = 1.75, p > .08$ ). Non-immigrant and immigrant pupils both became more cooperative in the eyes of their fellow team members, but the perceived non-cooperativeness of non-immigrant pupils decreased more quickly than that of immigrant pupils.

***Hypothesis 3: popularity is heightened by SCL experience and perceived non-cooperativeness is lowered, but only in ethnically heterogeneous teams***

The ethnicity of each team was coded as homogeneous (all pupils non-immigrant or all pupils immigrant) or heterogeneous (one or more immigrant pupils combined with non-immigrant pupils). We analyzed the effect of SCL time on popularity separately for the homogeneous and heterogeneous teams.

*Popularity*

We found that the popularity within ethnically heterogeneous teams was higher at the end of the SCL curriculum than at the start of the CL curriculum ( $F[1,17] = 6.22, p < .03, \eta^2 = .27$ ). No such effect was found within ethnically homogeneous teams. A non-parametric test corroborated this finding ( $Z[18] = -2.28, p < .03$ ).

*Perceived non-cooperativeness*

The ethnically heterogeneous teams perceived less non-cooperativeness in their teams at the end of the SCL curriculum than at the beginning ( $F[2,16] = 7.28, p < .007, \eta^2 = .48$ ). No such effect was found within ethnically homogeneous teams. A Friedman test corroborated this finding ( $\chi^2[18] = 11.29, df = 2, p < .005$ ).



### ***Summary of findings***

In this study we investigated the development of interethnic bias among pupils from multiethnic elementary schools during an SCL curriculum. We hypothesized that the time team members spent working in their teams would be positively related to their popularity and negatively related to their perceived non-cooperativeness. We further hypothesized that SCL time would increase popularity and level off the difference in perceived non-cooperativeness between non-immigrant and immigrant pupils. Lastly, we expected that SCL time would increase popularity and lower perceived non-cooperativeness within ethnically heterogeneous teams, but not within ethnically homogeneous teams.

The results show that SCL time augmented popularity scores and decreased non-cooperativeness nominations both at the individual and the group level. At the individual level we found that the SCL curriculum augmented the popularity of immigrant pupils and decreased the difference in perceived non-cooperativeness between non-immigrant and immigrant pupils. The perceived non-cooperativeness of non-immigrant pupils showed a steeper decrease than that of immigrant pupils. Finally, SCL time lowered perceived non-cooperativeness within ethnically heterogeneous teams and tended to increase popularity.

### **Discussion**

The finding that pupils rated their fellow team members as more popular and cooperative with increasing SCL time is in accordance with earlier findings (Gillies & Ashman, 1997; Johnson & Johnson, 1994; Wright et al., 1986). These findings highlight the positive impact of SCL on pupils' social status. Some research suggests that SCL is a more effective teaching method than direct teaching, not only as regards social skills but also as regards academic performance (for overviews see Qin, Johnson, & Johnson, 1995; Rohrbeck, Ginsburg-Block, Fantuzzo, & Miller, 2003).

SCL was a new experience for both the teachers and the pupils in this study. Nevertheless, this study shows that SCL can decrease interethnic bias in multiethnic teams even with minimal prior knowledge regarding SCL. There was a steady decline in team members' perception of the non-cooperativeness of pupils with a different ethnicity with increasing SCL time. Even more positive effects of SCL on interethnic relations are to be expected with more experience in, and knowledge of, SCL.

We found that non-immigrant pupils were perceived to be more popular at the end of the SCL curriculum than at the beginning. Additionally, the perceived cooperativeness of non-immigrant pupils increased more quickly than that of the immigrant pupils: they were rated as less cooperative than immigrant pupils at the start of the SCL curriculum. This finding relates to Oetzel's (1998) suggestion that non-immigrant pupils have more difficulty working in teams, possibly because they have a more individualistic learning style. This is also in keeping with Hallinan and Teixeira's (1987) finding that black pupils in the USA had a generally friendlier attitude towards other pupils in their team than the non-immigrant pupils did. Our study suggests that SCL experience can counter the tendency of non-immigrant pupils to work alone.

Furthermore, the results show that multiethnic teams are more effective for the reduction of interethnic bias than ethnically homogeneous teams: only in the multiethnic teams did both popularity and perceived cooperativeness increase with more CL experiences. These results confirm the revised contact hypothesis, proposed by Pettigrew (1998), that the development of interethnic friendship reduces interethnic bias. We showed not only that friendship intensifies with increasing exposure to an ethnically heterogeneous group, but also that interethnic popularity and perceived interethnic cooperativeness are boosted with increased exposure time.

This finding needs to be qualified with regard to the term 'ethnicity'. A study by Kistner et al. (1993) asserted that research into interethnic bias in multicultural classrooms should not only

focus on the students' ethnic status in terms of majority or minority per se, but should also focus on the relative majority/minority ratio in a specific classroom. Bellmore, Witkow, Graham, and Juvonen (2004) provided evidence that pupils' relative ethnic status is related to maladjustment: pupils in a majority in their class but in a minority in society generally showed more maladaptive behaviour than pupils who were in a minority both in the classroom and in society generally. Since the number of multiethnic schools where the majority of pupils have an immigrant background is on the rise (Gijsberts, 2004), this assertion is becoming increasingly more important in the educational setting.

### Limitations

These results provide insight into the social skills of pupils working in the classroom. However, our focus on the classroom meant that we did not take into account pupils' social skills outside the classroom. A study by Root and Jenkins (2005) revealed that pupils' development of social skills on the playground and at home might affect social development in the classroom considerably. We did not take into account background variables such as home situation or social behaviour on the playground.

A second limitation is that we did not assess pupils' prior social skills, which earlier studies have found to be related to social skills development in groups (e.g., Gillies & Ashman, 1996). Incorporation of these background characteristics into a research design that assesses the pupils' social skills in the classroom, on the playground, and at home might offer a better prediction of youths' social development, in particular that of immigrant children (cf. Hughes et al., 2006).

### Conclusion

Allport's (1954) contact hypothesis has been criticized as containing too many exceptions to the rule – that is, research has revealed many qualifying conditions that have obscured the originally transparent hypothesis (Dixon et al., 2005; Eller & Abrams, 2004). Also, the contact hypothesis does not explain why and how cooperation, equal status, common goals, and support of authorities and institutions decrease bias; it only describes when it does so (Pettigrew, 1998). In particular, it has been argued that more research is needed into the conditions of interethnic bias in daily classroom life (Dixon et al., 2005). Our study suggests that Pettigrew's (1998) longitudinal interpretation of the contact hypothesis provides a better explanation of interethnic bias in ethnically diverse classrooms. In addition, our findings show that SCL may provide a solution to interethnic problems at multiethnic elementary schools.

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