

Growing Together—Effects of a school-based intervention promoting positive self-beliefs and social integration in recently immigrated children

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We present a school-based intervention geared to foster the social integration of recently immigrated (RI) primary school children by creating repeated positive contact situations with classmates brought up in the receiving society. Coaches encouraged groups of tandems, consisting of one RI and one child brought up in Germany each, to engage in cooperative activities designed to strengthen positive self-beliefs and perception of equal status. In a quasi-experimental control-group design ($N = 318$), we compared the 30 children (12 RI) who participated in our intervention between pre-test and post-test with a reference group. Self-beliefs were measured via self-reports, social integration via sociometric peer-nominations. The reference group ($n = 288$ children) included all children who did not participate in the intervention between pre-test and post-test: (a) 12 children (7 RI) of a waiting control group and (b) all classmates of both the students of the intervention and the waiting control group. Post-test self-beliefs were more positive in children having participated in the intervention. The intervention did not affect social integration: Neither the number of classmates nominating a student nor the number of peers the respective student nominated increased. Possibly, the intervention initiated self-reinforcing processes which support social integration over longer time periods.

Keywords: Refugee and immigrant children; Social integration; School-based intervention; Peer-network; Self-beliefs.

With several countries in the Middle East, North Africa and the Western Balkan suffering from war, political conflict, natural disasters and poor standards of living, many people are presently making their way to Europe. In Germany, where our research was conducted, in the period from January to October 2018 alone, 138,665 people applied for asylum. Of these, 43.9% were less than 16 years old (Bundesamt für Migration und Flüchtlinge, 2018, p. 7). As long as refugees and immigrants are eligible for mandatory schooling, in Berlin, where our intervention was implemented, they are sent to so-called Welcome-classes within 3 months of their arrival. During

the school year 2017–2018, 12,570 children were instructed in 1067 Welcome-classes (Senatsverwaltung für Bildung, Jugend und Familie, 2018). After 1 year of schooling, Welcome-class students transfer to regular classrooms, according to their age. From the very beginning, in certain subjects (e.g. sports, music) students of Welcome-classes join the regular classes they will later transfer to.

The main aim of Welcome-classes is to prepare recently immigrated (RI) students linguistically for regular classes and to introduce them to the German school system. However, no regular measures have yet

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BH and LZ raised the funding for the intervention project from the Robert Bosch Foundation Germany. All authors were involved in implementing and conducting the intervention in Berlin schools and in collecting the data. MK performed the statistical analysis. BH wrote the introduction, JH and MK wrote the method section and LZ wrote the discussion. All authors contributed to manuscript revision, read and approved the submitted versions.

been implemented to support their *social integration* into regular classes. Social integration in peer-networks is decisive for full future participation in the new country of residence: Prosocial peer relationships provide a secure base to explore the new environment of the school, they offer emotional support in times of stress and turmoil, and assistance in coping with the academic tasks at school (e.g. Wentzel, Russell, & Baker, 2016; Zander, Kreutzmann, & Hannover, 2017). Therefore, children strive for friendships and to be socially well embedded within the classroom. RI children face the challenge, however, how to approach and befriend other children, most of whom neither speak their first language nor share important personal life experiences (like for instance having fled one's home country). In our research, we therefore developed an intervention, *Growing Together*, aiming to facilitate the social integration of RI students into their regular classes.

Our intervention targets primary school children for several reasons. First of all, boys and girls in their primary school years have advantages regarding the acquisition of academic skills. Compared to older immigrant students, who often had limited opportunity to enrol in formal education, younger children have less learning content to catch up to. Also, primary school children derive most benefit from being exposed to two different language contexts (Soderman & Oshio, 2008). In Berlin, primary school students are tracked into different types of secondary schools at the end of sixth grade. *Growing Together* therefore addresses fifth graders: We want to ensure that the children can transfer to a regular class at the same school after having participated in the intervention. Compared to younger age groups, more quantitative questionnaire measures are available for fifth graders.

***Growing Together*: A school-based intervention**

Our intervention was developed based on two core theoretical assumptions: social integration is promoted (a) by interpersonal encounters under psychologically optimal conditions and (b) when children are convinced that they can contribute positively to these interpersonal encounters because they hold positive self-views.

Provision of space and structure for interpersonal and intergroup encounters under optimal conditions

The establishment of prosocial peer relationships between RI children and children who have grown up in Germany presupposes positive intergroup attitudes, that is, that children experience themselves and the social groups to which they belong as equal and equally valuable. Personal encounters between members of different social groups typically reduce prejudice and foster positive intergroup

attitudes, however, particularly strongly so if the contact situation is structured equally, that is, when individuals' equal status and shared goals are emphasised (Allport, 1954; Kende, Phalet, Van den Noortgate, Kara, & Fischer, 2017; Pettigrew & Tropp, 2006). Wright, Aron, and Brody (2008) suggested that the optimal conditions for intergroup contact postulated by Allport (1954) in his contact hypothesis are the same as conditions that facilitate friendship formation: frequent encounters over time, equal status, cooperation and common goals, as well as support for the relationship from peers and authorities. When developing our intervention, we sought to design the sessions in such a way as to produce these optimal conditions. (1) *Frequent encounters over time*: We organised repeated contact situations, with children meeting nine times in a period of 10 weeks. (2) *Equal status*: Each RI student was connected with a peer raised in Germany and already attending the regular class the RI student would join later (tandems). In contrast to the hierarchical form of interactions in mentor-mentee dyads, tandem interactions were designed to facilitate perception "at eye level", with frequently switching expert roles, thus emphasising equal status of the children and social groups involved. (3) *Cooperation and common goals*: Children were provided with multiple opportunities to cooperate and engage in joint activities, emphasising interdependence and common goals. (4) *Support for the relationship from peers and authorities*: Children worked in groups of 4–6 tandems. Coaches were taught how to build positive relationships, encourage children's (equal status) cooperation and their working towards common goals. In this way, children were supposed to learn that their cooperation was appreciated by the peer group and by the coaches.

Positive self-beliefs as the basis of relationship building

Our second central theoretical assumption in developing the intervention was that children contribute positively to the encounters with their tandem partner and the group of tandems, to the extent that they think of themselves as a valuable person and as someone others want to be friends with. While the children who grew up in Germany are typically already involved in friendships within their class, RI children often have not yet established such peer relationships. Further, as a visible minority, RI students may question whether they belong (cf., Walton & Wilson, 2018) and feel that their self-worth is called into question (cf., Sherman et al., 2013). Our intervention capitalised on available resources, rather than focusing on the many challenges RI students in particular have to overcome, to affirm students' self-worth and strengthen their feeling of being valued by others. By encouraging children to talk about sources of strength and about various topics that are meaningful to their age group, we expected them to develop

TABLE 1
Main goals and activities in intervention sessions

| <i>Session no.</i> | <i>Main goals and activities</i> |
|--------------------|--|
| 1 | Welcome, formation of tandems, getting to know each other |
| 2 | Affirm self-worth and feelings of others' social recognition by talking about personally meaningful objects |
| 3 | Increase self-worth and self-efficacy to successfully deal with uncertainty of belonging by listening to stories of other children and giving own advice on how to handle challenging new beginnings |
| 4 | Strengthen self-worth, peer self-concept and encourage friendship formation across group boundaries by reflecting about friendship and the potential of diversity |
| 5 | Increase feelings of self-efficacy and of being perceived by others by trying and reflecting on different body postures and body languages |
| 6 | Protect positive self-beliefs by learning how to cope with and help others to cope with emotionally challenging situations |
| 7 | Secure feelings of being valued by others, irrespective of personal attributes and role expectations and encourage to make friends across group boundaries |
| 8 | Strengthen self-efficacy and the formation of supportive relationships through the experience that one can rely on others when obstacles arise in the pursuit of goals |
| 9 | Farewell, encouragement to continue meeting |

a positive sense of self and positive relationships within and beyond the intervention group. In a self-reinforcing process, the belief that one has the capability to reach goals even in the face of challenges (*self-efficacy*), a positive self-evaluation (*self-worth*), the belief that one can do well at school (*academic self-concept*), as well as the perception that one is important to others (*peer self-concept*) should help students to overcome adverse experiences they may encounter and encourage them to form affective and academic help peer-networks. These assumptions are supported by studies showing that positive self-beliefs—such as high self-esteem, academic or peer self-concept—coincide with higher acceptance by peers (e.g. Buhs, 2005; Gruenenfelder-Steiger, Harris, & Fend, 2016; Tetzner, Becker, & Maaz, 2017), and that actual inclusion in peer-networks increases feelings of belonging (Kreutzmann, Zander, & Webster, 2018).

To facilitate students' positive self-views as a resource and encourage the formation of positive peer relationships even under challenging circumstances, the contents of the nine sessions of our intervention were tailored to teach children to reaffirm important personal values (cf., Sherman, 2013), to acquaint them with strategies to overcome belonging uncertainty (cf., Walton & Wilson, 2018), to strengthen self-efficacy by the experience that they can rely on others, can cope with emotionally challenging situations and can ensure that they are perceived by others (cf. Denham, Wyatt, Bassett, Echeverria, & Knox, 2009), and to let them feel socially recognised and valued by others (see Table 1 for a short and Table SS2, Supporting information, in Appendix V for a detailed description of the intervention sessions).

Research hypotheses

We expected both students from Welcome-classes and students raised in Germany who participated

in the intervention to develop more positive self-beliefs (self-efficacy, self-worth, academic and peer self-concept). Further, the intervention should strengthen participants' perceived (self-report) and objective (sociometric measures) social integration into affective and academic help peer-networks of their regular class. Further, we considered it possible that RI students' social integration would profit more strongly from intervention participation as they had had fewer prior opportunities to make friends with classmates than children raised in Germany.

METHOD

Implementation of the intervention *Growing Together*

We sent information letters to 217 primary schools in seven districts of Berlin. Six schools agreed to participate. After approval from the school authorities (Senatsverwaltung für Bildung, Jugend und Familie), we started recruiting children from fifth grade. To build the tandems, for each RI child who wanted to participate we selected a partner who (a) was also interested in taking part, (b) had the same gender, (c) was raised in Germany and (d) attended the regular class into which the RI child would move on to. In case of an uneven number of RI children and children from regular classes wanting to participate we formed tandems of three.

The intervention consisted of nine sessions, each lasting 90–120 minutes. Sessions were conducted in the afternoon following school hours at the respective school over the course of 10 weeks, with intervals of 1 week (April–July 2017). Children participated in groups of 4–6 tandems. The sessions were led by eight volunteer university students (coaches), majoring in psychology or educational science, who had previously received extensive training. The volunteer students were split up in four

| | t 1 | | t 2 | |
|-----------------------|-----|--|-----|--|
| Intervention group | O | X ^{n = 30} (12 Welcome-class children, 18 children raised in Germany) | O | |
| Waiting control group | O | | O | X ^{n = 12} (7 Welcome-class children, 5 children raised in Germany) |

Note: O = Observation, X = Intervention

Figure 1. Quasi-experimental pre-test–post-test control group design

teams of two coaches each, with each team accompanying one group of children through all nine sessions and also collecting their questionnaire data. As the coaches assisted children when in need of help while filling in the questionnaires, they were aware of the measures but not of specific research hypotheses. The coaches clearly separated data collection from the respective previous intervention and did not provide any assistance unless a child had major linguistic comprehension problems. They also clearly verbalised that they would not look at the questionnaires and that these would be treated anonymously. The sessions were conducted based on an intervention manual. In each session, treatment fidelity and the quality of conveying the programme was monitored by an observer (results see Appendix I).

Research design

Three schools were randomly assigned to receive the intervention right away (intervention group) and three schools to receive it at a later date (waiting control group).

In schools of the intervention group, the intervention (X) was carried out between the questionnaire measurements (O) at *t1* (April 2017) and *t2* (July 2017) (see Figure 1). Depending on the school, intervals between pre-test and intervention varied between 1–4 weeks. The post-test was carried out within 1–2 weeks after the last intervention session. In the waiting control group schools, the intervention was carried out *after t2*, with no post-treatment assessment being administered (quasi-experimental pre-test–post-test control group design, Campbell & Stanley, 1963, p. 8).

It is important to note that in order to measure our intervention's effect, we administered our questionnaire to *all* students attending the regular classes of *all* children participating in the intervention between either *t1* and *t2* or after *t2*; see Figure SS1 in Appendix II). This design allowed us to compare on all measures the students who participated in the intervention between *t1* and *t2* (*intervention group*) with all students who did not (*reference group*). Additionally, we were able to compare Welcome-class students (RI children) who participated in the intervention between *t1* and *t2* with Welcome-class students (RI children) of the waiting control group and with children raised in Germany who either participated in the intervention between *t1* and *t2* or did not.

TABLE 2

Numbers of participants included in analyses according to class and intervention participation

| | Participation in intervention between <i>t1</i> and <i>t2</i> (<i>intervention group</i> , <i>n</i> = 30) | No participation in intervention between <i>t1</i> and <i>t2</i> (<i>reference group</i> , <i>n</i> = 288) |
|---|--|---|
| RI-children in Welcome-classes | 12 | 7 |
| Children (raised in Germany) in regular classes | 18 | 281 |

Participants

The initial dataset consisted of 325 fifth graders. Pre-test data were collected from 308 students. Of those, 76 did not participate at post-test. Post-test data were available from 249 students. Of those, 17 students only participated in the post-test. Valid pre-test and post-test measures were available for 232 students (75%).

At the beginning of the interventions that were carried out between *t1* and *t2*, 37 children participated in the intervention. Seven of them (three from Welcome-classes) were excluded from further analysis because they participated in less than five sessions. Intervention dropout was mainly due to RI students moving to another district and school or to students from regular classes who were not committed enough to attend regularly. The remaining 30 intervention participants (17 girls; 12 Welcome-class students, 18 students raised in Germany) were compared with the reference group of 288 children (133 girls; 7 Welcome-class students, 281 students raised in Germany; see Table 2). The seven Welcome-class students included in our reference group participated in our intervention after *t2*, together with five (out of the 281) students raised in Germany (waiting control group, *n* = 12). Consequently, the final sample consisted of *N* = 318 children from 16 classes in 6 schools, with 30 students (from 9 of these classes and 3 of these schools) having participated in the intervention between *t1* and *t2*. Model-based missing data methods (FIML) allowed us to retain all cases: children who answered our questionnaire either at *t1*, at *t2*, or at both *t1* and *t2*. Thus, all following analyses are based on a sample of 318 children.

Children were 10.5 years old on average (*M* = 10.6, *SD* = 1.0). Ninety students were born outside of Germany. In this subgroup, age of settlement in

Germany was 7 years on average ($M = 7.3$, $SD = 3.1$, $Min/Max = 0/12$). A relatively high number of children reported their parents were born outside of Germany (mothers: $n = 221$, fathers: $n = 229$ (details see Appendix III and IV).

Measures

Questionnaires (available in German, Farsi, Arabic, Russian, Polish, all translated and back translated by first language speakers of the respective languages) were administered during regular class hours. Welcome-class students were tested within their future regular class with whom they already attended selected subjects. Unless otherwise stated, students responded to all items on Likert scales, with response options described in written language (1 = *not at all true*, 5 = *exactly true*) and in the introductory instruction additionally with illustrations of sad versus smiling faces.

Self-efficacy

Participants responded to three items from a general self-efficacy scale (Jerusalem & Schwarzer, 1999; e.g. "I can usually handle whatever comes my way"; pre-test: $\alpha = .74$, post-test: $\alpha = .86$).

Self-worth

Participants responded to two self-worth items from the Self-Description Questionnaire I (SDQ1, Arens, Trautwein, & Hasselhorn, 2011; e.g. "Many things about me are good"; pre-test: $\alpha = .68$; post-test: $\alpha = .78$).

Academic self-concept

We used three items from the self-perception profile for children (Asendorpf & Van Aken, 1993; e.g. "I am pretty slow in finishing my school work", reverse coded), complemented by the item: "I am very good at school" (pre-test: $\alpha = .61$; post-test: $\alpha = .64$).

Peer self-concept

Students responded to three peer self-concept items from the SDQ1 (Arens et al., 2011; e.g. "I have many friends"; pre-test: $\alpha = .73$, post-test: $\alpha = .77$).

Affective and academic help peer-networks

To assess individual students' social integration, all students ($N = 318$) completed a sociometric assessment. On a roster with cover names, every student was asked to report all classmates they (a) liked (affective

peer-network), and with whom they (b) enjoyed working with (academic help peer-network). The number of outgoing nominations to classmates served as proxy variable for students' active acceptance of others. The number of ingoing nominations from other peers served as proxy for passive acceptance by others.

Perceived peer-support

Students described affective peer-support on the item: "When I am sad, I can always talk to another classmate" and academic peer-support on the item: "If I do not know how to go on at school, I can always ask another classmate."

Data analysis

Controlling for pre-test measures, we conducted multiple regression analyses in Mplus 5.21 (Muthén & Muthén, 2012) to identify intervention effects. Given that effect coding produces reasonable estimates of main and interaction effects, rather than simple effects of one variable at one level of the other variable, we chose effect coding over other coding procedures. As students were nested within classrooms, we used the type = complex command correcting for underestimated standard errors of all model parameters. Missing values (5–6.3%) were estimated using the full maximum-likelihood procedure.

RESULTS

Preliminary analysis

Students of the intervention ($n = 30$) and reference group ($n = 288$) did not differ in age at pre-test ($B = -0.15$, $SE = 0.18$, $z = -0.83$, $p = .404$). Boys and girls were distributed equally across intervention and reference group, $\chi^2(1) = 1.05$, $p = .340$, phi coefficient = .06; about 48% girls in both groups. The proportion of students born in Germany (yes/no) was higher in the reference group (72.6%) than in the intervention group (58.6%), but *not* significantly so, $\chi^2(1) = 2.53$, $p = .132$, phi coefficient = $-.09$. Percentage of students whose mothers, 30.5%; $\chi^2(1) = 0.95$, $p = .393$, phi coefficient = $-.06$, or fathers, 27.9%; $\chi^2(1) = 0.01$, $p = .999$, phi coefficient = $.00$, were born in Germany was balanced across the two groups. 43% of the intervention group students and 58% of reference group students indicated German as their first language (yes/no; $\chi^2(1) = 2.34$, $p = .175$, phi coefficient = $-.09$).

At pre-test, intervention group students were less liked by their classmates than reference group students (affective network ingoing nominations, $B = -0.11$, $SE = 0.03$,

TABLE 3

Descriptive statistics and p values from regression analyses comparing dependent variables at pre-test between intervention and reference group

| | Total | | Intervention group | | Reference group | | Possible range | p |
|-----------------------------------|-------|------|--------------------|------|-----------------|------|----------------|------------|
| | M | SD | M | SD | M | SD | | |
| Self-efficacy | 3.59 | 0.84 | 3.65 | 0.77 | 3.54 | 0.84 | 1–5 | $p = .455$ |
| Self-worth | 3.81 | 0.74 | 3.75 | 0.73 | 3.81 | 0.74 | 1–5 | $p = .295$ |
| Academic self-concept | 3.34 | 0.89 | 3.54 | 0.89 | 3.31 | 0.86 | 1–5 | $p = .111$ |
| Peer self-concept | 3.98 | 0.93 | 4.03 | 0.84 | 3.98 | 0.93 | 1–5 | $p = .708$ |
| Affective outgoing nominations | 0.33 | 0.23 | 0.25 | 0.24 | 0.34 | 0.23 | 0–1 | $p = .069$ |
| Affective ingoing nominations | 0.33 | 0.03 | 0.23 | 0.13 | 0.34 | 0.17 | 0–1 | $p < .001$ |
| Help related outgoing nominations | 0.22 | 0.23 | 0.17 | 0.22 | 0.23 | 0.23 | 0–1 | $p = .097$ |
| Help related ingoing nominations | 0.25 | 0.16 | 0.18 | 0.14 | 0.24 | 0.16 | 0–1 | $p = .170$ |
| Perc. affective peer-support | 3.84 | 1.28 | 3.73 | 1.39 | 3.85 | 1.27 | 1–5 | $p = .704$ |
| Perc. academic peer-support | 4.01 | 1.15 | 4.13 | 1.08 | 4.05 | 1.15 | 1–5 | $p = .741$ |

TABLE 4

Correlations among dependent variables at pre-test

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
|---------------------------------------|---------|---------|--------|--------|--------|--------|--------|--------|--------|-------|--------|
| (1) Intervention ^a | — | | | | | | | | | | |
| (2) Class-status ^b | .40*** | — | | | | | | | | | |
| (3) Self-efficacy | .03 | .03 | — | | | | | | | | |
| (4) Self-worth | -.02 | .00 | .52*** | — | | | | | | | |
| (5) Academic self-concept | .08† | .00 | .32*** | .42*** | — | | | | | | |
| (6) Peer self-concept | .02 | -.18** | .39*** | .52*** | .22*** | — | | | | | |
| (7) Affective outgoing nominations | -.11† | -.12† | .06 | .12† | .04 | .28*** | — | | | | |
| (8) Affective ingoing nominations | -.19*** | -.26*** | -.01 | .08† | -.00 | .30*** | .34*** | — | | | |
| (9) Help related outgoing nominations | .07† | -.01 | .07† | .17*** | -.01 | .23*** | .45*** | .22*** | — | | |
| (10) Help related ingoing nominations | -.10† | -.24*** | .04 | .11† | .20** | .18** | .25** | .45*** | .12* | — | |
| (11) Perc. affective peer-support | -.05 | -.19** | .32*** | .24*** | .08 | .41*** | .21*** | .24*** | .21*** | .14** | — |
| (12) Perc. academic peer-support | 0.00 | -.16† | .23*** | .21*** | .16** | .33*** | .16*** | .16** | .17** | .06 | .37*** |

^a0.5 = Intervention group, -0.5 = Reference group. ^b0.5 = Welcome-class, -0.5 = Regular class. † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

$z = -3.49$, $p < .001$). No differences were found regarding the other dependent variables (all ps n.s.) (Table 3). Correlations between study variables are presented in Table 4.

Evaluation of intervention effects

For each dependent variable, students' post-test measures were regressed on their corresponding pre-test scores (group-mean centered) and on two effect-coded variables representing intervention participation (Intervention group = 0.5, Reference group = -0.5) and class status (Welcome-class = 0.5, Regular class = -0.5), respectively. Thus, the intercept equals the grand mean of all observations at post-test, adjusted for class mean pre-test scores. To test for potential different effects of our intervention on Welcome-class students and on children raised in Germany, we added an interaction term (intervention participation X class status) to the regression models. Here, the 12 Welcome-class students of the intervention group were compared with the seven Welcome-class students of the waiting control group

and with children raised in Germany who were ($n = 18$) or were *not* ($n = 281$) members of the intervention group.

Self-efficacy

Post-test self-efficacy was higher in the intervention than reference group, accounting for pre-test measures ($d = 0.35$; Model 1 Table 5). Welcome-class students reported higher self-efficacy than students from regular classes ($d = 0.28$). There was no interaction effect between intervention participation and class status on self-efficacy, suggesting that students from Welcome-classes and regular classes benefited equally from the intervention.

Self-worth

Intervention group students reported a more positive self-worth than reference group students ($d = 0.38$; Model 2 Table 5). Class status did not predict students' self-worth at post-test. Likewise, the interaction effect was not significant.

TABLE 5
Results of multi-level regression analyses predicting self-efficacy, self-worth, academic and peer self-concept

| | <i>Model 1 Self-efficacy</i> | | | | | <i>Model 2 Self-worth</i> | | | | | <i>Model 3 Academic self-concept</i> | | | | | <i>Model 4 Peer self-concept</i> | | | | |
|--------------------------------|----------------------------------|-----------|----------|----------|----------|-------------------------------|-----------|----------|----------|----------|--|-----------|----------|----------|----------|--------------------------------------|-----------|----------|----------|----------|
| | <i>B</i> | <i>SE</i> | <i>z</i> | <i>p</i> | <i>d</i> | <i>B</i> | <i>SE</i> | <i>z</i> | <i>p</i> | <i>d</i> | <i>B</i> | <i>SE</i> | <i>z</i> | <i>p</i> | <i>d</i> | <i>B</i> | <i>SE</i> | <i>z</i> | <i>p</i> | <i>d</i> |
| Intercept | 3.92 | 0.09 | 44.38 | .000 | 5.01 | 4.06 | 0.06 | 65.00 | .000 | 7.34 | 3.62 | 0.09 | 41.46 | .000 | 4.68 | 4.12 | 0.12 | 34.93 | .000 | 3.94 |
| Pre-test ^a | 0.56 | 0.07 | 7.99 | .000 | 0.90 | 0.59 | 0.09 | 6.79 | .000 | 0.77 | 0.62 | 0.07 | 8.65 | .000 | 0.98 | 0.61 | 0.09 | 6.71 | .000 | 0.76 |
| Intervention ^b | 0.50 | 0.16 | 3.07 | .002 | 0.35 | 0.41 | 0.12 | 3.33 | .001 | 0.38 | 0.33 | 0.16 | 2.06 | .039 | 0.23 | 0.31 | 0.23 | 1.38 | .168 | 0.16 |
| Class-status ^c | 0.31 | 0.12 | 2.46 | .014 | 0.28 | -0.07 | 0.11 | -0.64 | .522 | -0.07 | 0.05 | 0.18 | 0.30 | .765 | 0.03 | 0.21 | 0.18 | 1.19 | .235 | 0.13 |
| Intervention X Class-status | -0.19 | 0.27 | -0.72 | .472 | -0.08 | -0.24 | 0.21 | -1.14 | .254 | -0.13 | 0.05 | 0.37 | 0.15 | .884 | 0.02 | 0.23 | 0.44 | 0.52 | .602 | 0.06 |

^aGroup mean centred variable. ^b0.5 = Intervention group, -0.5 Reference group. ^c0.5 = Welcome-class, -0.5 = Regular class.

TABLE 6
Results of multi-level regression analyses predicting integration in affective and academic help peer-networks

| | <i>Model 1 Affective network (Outgoing nominations)</i> | | | | | <i>Model 2 Affective network (Ingoing nominations)</i> | | | | | <i>Model 3 Academic help network (Outgoing nominations)</i> | | | | | <i>Model 4 Academic help network (Ingoing nominations)</i> | | | | |
|--------------------------------|---|-----------|----------|----------|----------|--|-----------|----------|----------|----------|---|-----------|----------|----------|----------|--|-----------|----------|----------|----------|
| | <i>B</i> | <i>SE</i> | <i>z</i> | <i>p</i> | <i>d</i> | <i>B</i> | <i>SE</i> | <i>z</i> | <i>p</i> | <i>d</i> | <i>B</i> | <i>SE</i> | <i>z</i> | <i>p</i> | <i>d</i> | <i>B</i> | <i>SE</i> | <i>z</i> | <i>p</i> | <i>d</i> |
| Intercept | 0.31 | 0.02 | 14.97 | .000 | 1.69 | 0.29 | 0.02 | 14.27 | .000 | 1.61 | 0.23 | 0.04 | 6.03 | .000 | 0.68 | 0.23 | 0.02 | 10.94 | .000 | 1.23 |
| Pre-test ^a | 0.60 | 0.11 | 5.73 | .000 | 0.65 | 0.64 | 0.07 | 9.15 | .000 | 1.03 | 0.40 | 0.10 | 4.03 | .000 | 0.45 | 0.67 | 0.08 | 8.72 | .000 | 0.98 |
| Intervention ^b | -0.05 | 0.03 | -1.62 | .106 | -0.18 | 0.00 | 0.04 | 0.01 | .994 | 0.00 | 0.07 | 0.08 | 0.91 | .361 | 0.10 | -0.06 | 0.04 | -1.55 | .122 | -0.17 |
| Class-status ^c | -0.05 | 0.04 | -1.14 | .255 | -0.13 | -0.12 | 0.03 | -3.65 | .000 | -0.41 | -0.02 | 0.07 | -0.32 | .750 | -0.04 | -0.05 | 0.03 | -1.65 | .099 | -0.19 |
| Intervention X Class-status | -0.05 | 0.08 | -0.59 | .554 | -0.07 | 0.03 | 0.05 | 0.51 | .613 | 0.06 | 0.20 | 0.14 | 1.37 | .171 | 0.15 | -0.10 | 0.06 | -1.65 | .099 | -0.19 |

^aGroup mean centred variable. ^b0.5 = Intervention group, -0.5 = Reference group. ^c0.5 = Welcome-class, -0.5 = Regular class.

Academic self-concept

Intervention group students reported higher academic self-concepts than reference-group students ($d = 0.23$, Model 3 Table 5). No effects were found for class status or the interaction.

Peer self-concept

Peer self-concept was unaffected by intervention participation, class status or the interaction.

Affective peer-networks

Neither outgoing ($d = -0.18$) nor ingoing nominations ($d = 0.00$) were affected by intervention participation (Models 1 and 2 Table 6). Welcome-class students obtained fewer peer-nominations than students from regular classes ($d = -0.41$). Neither for outgoing nor for ingoing nominations did we observe an interaction effect.

Academic help peer-networks

Outgoing ($d = 0.10$) and ingoing nominations ($d = -0.17$) were unaffected by intervention participation, class status or the interaction (Models 3 and 4 Table 6).

Perceived peer-support

Intervention group students felt stronger affective ($d = 0.40$; Model 5 Table 7) and academic peer-support than reference group students ($d = 0.21$; Model 6 Table 7). Neither the main effect for class status nor the interaction was significant.

DISCUSSION

We investigated RI children and children raised in Germany participating in an intervention for primary schools: *Growing Together*. We expected that by participating in our intervention they would develop positive self-beliefs and strengthen their perceived and actual social integration, compared to students of an untreated reference group.

Self-beliefs, perceived and actual integration into peer-networks

Accounting for pre-test differences, self-efficacy, self-worth and academic self-concept were higher among students who had participated in the intervention than among students of the reference group. No statistical interaction effects between intervention participation and class status were observed for self-beliefs:

TABLE 7
Results of multi-level regression analyses predicting perceived support from peers

| | <i>Model 5 Perceived affective peer-support</i> | | | | | <i>Model 6 Perceived academic peer-support</i> | | | | |
|-----------------------------|---|-----------|----------|----------|----------|--|-----------|----------|----------|----------|
| | <i>B</i> | <i>SE</i> | <i>z</i> | <i>p</i> | <i>d</i> | <i>B</i> | <i>SE</i> | <i>z</i> | <i>p</i> | <i>d</i> |
| Intercept | 4.12 | 0.11 | 37.39 | .000 | 4.22 | 4.28 | 0.12 | 34.85 | .000 | 3.93 |
| Pre-test ^a | 0.39 | 0.08 | 5.03 | .000 | 0.57 | 0.36 | 0.07 | 5.38 | .000 | 0.61 |
| Intervention ^b | 0.75 | 0.21 | 3.57 | .000 | 0.40 | 0.45 | 0.24 | 1.84 | .066 | 0.21 |
| Class-status ^c | 0.14 | 0.28 | 0.52 | .605 | 0.06 | -0.20 | 0.20 | -1.01 | .314 | -0.11 |
| Intervention X Class-status | 0.12 | 0.47 | 0.25 | .806 | 0.03 | -0.12 | 0.39 | -0.30 | .766 | -0.03 |

^aGroup mean centred variable. ^b0.5 = Intervention group, -0.5 = Reference group. ^c0.5 = Welcome-class, -0.5 = Regular class.

Apparently, both groups of children equally benefited from the intervention. In contrast to our expectations, the intervention did not affect students' actual social integration into peer-networks: Neither the number of classmates who nominated them nor the number of classmates they themselves nominated as friends or academic helpers increased as a result of intervention participation. Further, Welcome-class students' lower integration into the affective peer-network could not be compensated by intervention participation.

We consider the most likely explanation for these findings to be that RI children form friendships and supportive relationships within the network emerging from the intervention group, but not yet to other students that will be part of their future class. It might have been more appropriate to apply the sociometric measure within the intervention group or focus on measures tapping into the quality rather than the quantity of RI students' peer relationships. The observation period was perhaps too short for positive self-beliefs to have had an effect and show itself in new social contacts and friendships within children's future regular classroom. It is conceivable that students' integration into their regular classrooms' social network appeared only after the second data assessment when children had actually transferred to their regular classrooms. This interpretation is supported by our finding that intervention participation did strengthen children's *perception* that they can turn to their peers if in need of help in emotional or academic matters.

Limitations and future directions

Our research design does not allow for the examination of our treatment components responsible for the observed effects. Given the small sample sizes, neither possible mediation effects could be tested, nor could we perform explanatory/confirmatory analyses to prove structural equivalence of our questionnaire measures between groups. Future research should use adequate sample sizes, and conduct in-depth analyses of the intervention effects (e.g. time-series regression) in order to determine which

treatment components were most effective. However, it should be noted that samples of RI students are particularly challenging to recruit and to keep, given that their families often have to move requiring children change schools.

Parts of the intervention were adapted from already existing programmes and then combined into a comprehensive programme, meeting the needs of a highly heterogeneous group of participants with topics relevant for adaptive development of both minority and majority children. The single sessions do not qualify, however, as substitutes for the (combined) original interventions, and, consequently, do not advance existing knowledge regarding the effectiveness of the original interventions.

We would like to acknowledge that one weakness of this research is the lack of a comprehensive unifying theoretical framework. In 2016, when we developed our intervention, no scientifically evaluated intervention programmes nor theoretical models existed targeting the group of refugee students. We carefully selected and adapted intervention elements that, based on existing research on minority students, would be most likely to help students form positive self-views and peer relationships *and* meet the schools' pragmatic requirements. Thus, our programme should be understood as a preliminary attempt to address a pressing situation in a time where teachers were in need of support. As such, it needs further development and scrutiny. Only recently have researchers presented a coherent and unified theoretical framework addressing the specific psychological antecedents of refugee integration (Echterhoff et al., in press) that can inform the advancement and refinement of educational interventions.

Despite these limitations, our findings reported here indicate the potential of *Growing Together* to improve self-beliefs and subjective social integration in children, irrespective of whether they grew up in Germany or abroad. Building on the growing body of empirical evidence and theoretical work on the group of refugee children, efforts need to be intensified to help students

overcome segregation, thus “*Growing Together*” at school.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Data S1 Supporting Information.

Figure S1 Research design and procedure

Table S1 Characteristics of children according to class and intervention participation

Table S2 Overall goals, theoretical background and basis of adaptation of the nine intervention sessions, as well as activities children engaged in

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