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formal und inhaltlich überarbeitete Version der Originalveröffentlichung in:
formally and content revised edition of the original source in:

European journal of psychological assessment 32 (2016) 1, S. 68-74

Accepted manuscript version (after peer review)
of the following article:

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Original Article

Sense of belonging to school in 15-year old students — The role of parental education and students' attitudes toward school

Tamara Marksteiner and Susanne Kruger

Department of Psychology, University of Mannheim, Germany

Tamara Marksteiner

Department of Psychology

University of Mannheim

68131 Mannheim

Germany

Tel. +49 621 181-2210

E-mail t.marksteiner@uni-mannheim.de

Abstract

Worldwide, students' health and subjective well-being increasingly are regarded as important. One central non-cognitive aspect that threatens students' well-being and that is related to students' socioeconomic background is whether they feel they belong to their social context (e.g., school) or instead feel socially ostracized. The present study investigated the relation between parents' education and students' sense of belonging to school and the role of students' and parents' attitudes toward school as mediators across different countries. The results indicate that students whose parents' have a higher education level feel less socially excluded. As expected, students' attitude functions as a mediator: The more educated the students' parents, the more positive the students' attitudes toward school. Likewise, the more positive their attitude, the stronger they indicated a feeling of social belonging and the less they indicated feeling socially excluded. Further, more individualistic countries show a weaker effect.

Key words: social belonging; social ostracism; latent path analysis; cross-cultural research

Worldwide, students' health and subjective well-being are considered to be important issues (OECD, 2013). They have immediate consequences for learning abilities and learning outcomes and also reduce depression. Therefore, subjective well-being can be seen as an important school outcome that, so far, has been investigated minimally in the context of school. This refers to research on subjective well-being as an outcome of education and as a prerequisite or condition of schooling. One central variable that threatens students' well-being (Walton & Cohen, 2011) and is associated with depression (Choenarom, Williams, & Hagerty, 2005) and grade point average (GPA; Walton & Cohen, 2011) is whether one feels a sense of belonging to an immediate social context, like one's school (cf. Willms, 2003), or feels excluded from it. Thus, sense of belonging is a significant determinant of school outcomes, such as subjective well-being and students' performance. However, the feeling of belonging to a social context itself is also an outcome, and is determined by multiple facets. For example, it is influenced by students' socioeconomic background (Ostrove & Long, 2007; Walton & Cohen, 2011). Students with a lower compared to a higher socioeconomic background felt they belonged less to their school (Ostrove & Long, 2007). One possible explanation is that students' socioeconomic background heavily depends on parental education, and parents' education experiences, in turn, shape their opinion about school and, therefore, influence their children's view on school and the feeling of belonging (or not) to an academic context. Thus, sense of belonging is not only an interesting factor when it comes to subjective well-being, but it also helps to understand disparities among students with different socioeconomic backgrounds (e.g., in their GPA).

The present paper focuses on the relationship between students' educational background and sense of belonging to school and possible mediators of this relationship. First, the present study investigates the relation between parents' education leval and students' sense of belonging to school. Second, it aims to gain insight into the mechanism underlying this relation (i.e., mediating variables) on the student level, while taking the broader learning

environment (school and country) into account. This paper is organized into the following

sections: review of literature on sense of belonging and socioeconomic background, possible

mediators for this relation, statistical methods, results on relations and mediation effects, and

discussion with practical implications.

Sense of Belonging and Socioeconomic Background

Sense of belonging can be defined as a feeling of being accepted and valued by peers

and by others at school (Willms, 2003) while ostracism can be described as being excluded

and ignored by individuals or groups (Williams, 2009). Research has shown that students'

social background (e.g., social class or ethnical background) is related to their sense of

belonging at school (Ostrove & Long, 2007; Walton & Cohen, 2011). For example, Ostrove

and Long found that sense of belonging at college was positively related to subjective and

objective class background: The higher a student's social class was, or the more they

identified themselves as belonging to a higher social class, the more they felt connected to

their college. Further, Walton and Cohen found that students perceived their connection to a

college to increase after a brief attitude-change intervention and that after three years,

students' sense of belonging was higher compared to a control group. The results indicate that

enhancing students' sense of belonging by changing their attitudes toward social adversity at

school leads to an increased sense of belonging, subjective well-being, and better health.

Mediating Mechanisms: Students' and Parents' Attitudes toward School

From research on social identity (cf. Tajfel, 2010) we know that one favors the

subjective norms, perceived behaviors, and attitudes of ones in-group (e.g., family). Thus, we

assume that attitudes function as a mediator between family socioeconomic background and

sense of belonging to school. Parents in families with a more favorable socioeconomic

background usually attained higher levels of education. Consequently, students who belong to

a more educated family should have more positive attitudes toward academia and school

compared to students who belong to a less educated family. Students with more positive

attitudes toward school might feel a stronger sense of belonging to school and academic

contexts in general compared to students with less positive attitudes. Moreover, it is assumed

that not only students' attitudes toward school, but also parents' attitudes are related to

students' sense of belonging (Ostrove and Long, 2007).

The Present Study

The study examines both the direct and indirect relations between parents' education

and students' sense of belonging (see Figure 1). First, and as shown in previous studies, we

assume a positive relation between parents' education and students' sense of belonging

(Hypothesis 1). Second, because students favor the attitudes of their in-group, attitudes should

function as a mediator between parental education and sense of belonging. It is assumed that

parents' attitudes toward their children's school mediate the proposed relation. A positive

relation between parental education and parents' attitudes toward school, as well as between

parents' attitudes and students' sense of belonging, is therefore expected (Hypothesis 2).

Third, it is expected that not only parents' attitudes, but also students who belong to a more

educated family, have more positive attitudes toward academia and school compared to

students who belong to a less educated family. These students with more positive attitudes

toward school might feel a stronger sense of belonging to school compared to students with

less positive attitudes. Therefore, students' attitudes toward school are hypothesized to

mediate the relation between parental education and sense of belonging to school (*Hypothesis

3*).
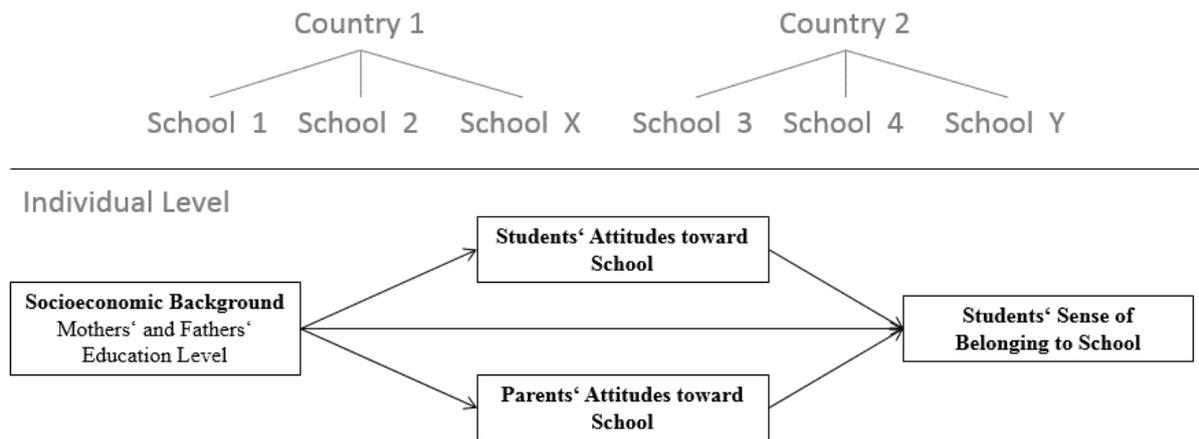
Figure 1. Hypothesized latent multilevel path/mediation model of socioeconomic background, students' and parents' attitudes toward school, and sense of belonging to school.

Students' social environment is considered by taking into account that students' sense of belonging and its function should vary across schools and countries. Country clustering is particularly important in view of Hofstede's dimension of individualism/collectivism (Hofstede, 1991), for example, students who grow up in a more individualized society should have a smaller need to belong (Baumeister & Leary, 1995) to a social group compared to students' from a more collectivistic society. We assume that a smaller need to belong should lead to a weaker evaluation of whether someone belongs to a group or not. Thus, we assume that the effect of parents' education level on sense of belonging should be stronger in rather individualistic societies, like Germany or Belgium (for detail on Hofstede's dimensions of national culture, i.e., individualism score, see http://geert-hofstede.com/national-culture.html). Likewise, the effect of parents' education level on sense of belonging should be weaker in societies with a lower score on Hofstede's individualism score (*Hypothesis 4*).

Method

Data Source

We used data from the Programme of International Student Assessment (PISA) 2012, which is a large and representative sample of students in secondary school from different countries. Because it is assumed that sense of belonging varies across different countries in line with individualism–collectivism (House, Hanges, Javidan, Dorfman, & Gupta, 2004),

sense of belonging was first tested for measurement invariance across countries. Moreover, subjects were also naturally clustered in schools, which therefore constitutes a complex data structure. In the analyses, the complex structure of the data (individual, school, country) has been taken into account by grouping the data by country and clustering the data by school. All analyses were run on the individual level; no variables on the school or country level were included.

Participants

The sample included data for n_{ST} = 103,769 15-year-old students in n_{SC} = 4,153 schools in n_C = 11 countries and was selected based on those students who returned a completed parent questionnaire. The student sample is 50.8% female and has a diverse socioeconomic background. Detailed information about the sampling, assessment procedures and test materials used in the PISA 2012 study is published in the technical report (OECD, http://www.oecd.org/pisa/pisaproducts/PISA-2012-technical-report-final.pdf).

Measures

Several measures were included in the PISA 2012 study (for more details, see OECD, 2013). All study measures were piloted or already included in previous PISA cycles. The full data can be downloaded at: http://pisa2012.acer.edu.au/downloads.php. The analyses in the present study are based on the following measures (see Table 1 for descriptive statistics).

Table 1
Correlations, Means, and Standard Deviations for the variables of the present study

Variable	1	2	3	4	5
1. Sense of belonging	-				
2. Education level mother	.11***	-			
3. Education level father	.10***	.59***	-		
4. Students' attitudes	.08***	.02***	.01***	-	
5. Parents' attitudes	.05***	.06***	.05***	.16***	-
M	2.39	2.11	2.05	3.43	3.08
SD	0.31	1.86	1.85	0.49	0.48

Notes. Sample size ranges from 62276 to 92269.
*** $p < .001$.

Sense of belonging to school. Sense of belonging was measured on a scale ranging from 1 (= *strongly agree*) to 4 (= *strongly disagree*) by six items: for example, "I feel like I belong at school"; "I feel like an outsider (or left out of things) at school."

Education level of parents. The education level of the father and mother ranged from 0 (= *none*) to 4 (= *ISCED 5A, 6*). The International Standard Classification of Education (ISCED) is maintained by the United Nations Educational, Scientific and Cultural Organization (UNESCO). ISCED is the reference classification for organizing education programs and related qualifications by education levels and fields (UNESCO, 2006).

Students' attitudes toward school. To measure students' attitudes toward school, students assessed 4 items (e.g., "Trying hard at school will help me get a good job.") on a scale ranging from 1 (= *strongly agree*) to 4 (= *strongly disagree*).

Parents' attitudes toward school. Parents' attitudes toward school were measured by seven items ranging from 1 (= *strongly agree*) to 4 (= *strongly disagree*). The items were, for example, "I am happy with the content taught and the instructional methods used in my child's school."

Results

Factor Analysis and Invariance Analyses for Sense of Belonging

A principal axis factor analysis (PAF) was conducted on the six items assessing sense of belonging with orthogonal rotation (varimax) to confirm the theoretically and empirically expected one-factor structure of the construct sense of belonging (cf. Walton & Cohen, 2007) in the subsample used for the present study. PAF was run on the individual student level. An unrestricted analysis extracted two components with eigenvalues greater than 1. They explained 48.27% of the total variance. The two factors simply represent negatively (Factor 1) and positively (Factor 2) worded aspects of the construct *sense of belonging*. Whereas the first factor measures a feeling of being socially ostracized (factor *Social Ostracism*), the second factor focuses on the feeling of social belonging (factor *Social Belonging*). Based on these

results and further results of multiple-group CFAs, the dependent variable *sense of belonging* was split in two latent factors and therefore, two dependent variables were included in all the models tested in the following analysis.

We tested the factorial structure for invariance across the different countries and found scalar invariance for *Social Ostracism* (CFI = 0.981, RMSEA = 0.072, SRMR = 0.045) and only metric invariance for *Social Belonging* (CFI = 0.996, RMSEA = 0.035, SRMR = 0.031). Therefore, the relation between the latent variable *Social Belonging* and its indicators are invariant across countries, but the items' intercepts vary across countries. Thus, all following analyses were run for each country separately.

Direct and Indirect Effects of Parental Education Level on Sense of Belonging

First, we investigated the direct effects of parental education level on students' sense of belonging across the different countries (Hypothesis 1; see Table 2 and Figure 2). The tests of model fit show a marginally good fit for the model with parental education level and students' as well as parents' attitudes toward school (CFI = 0.91/TLI = 0.91; SRMR = .05) as predictors.

The significant standardized regression coefficients for the regression of *social ostracism* on mothers' education level range from -0.03 to -0.07 and on fathers' education level from -0.04 to -0.11. The significant coefficients for the regression of *social belonging* on mothers' education level range from 0.03 to 0.08 and on fathers' education level from 0.06 to 0.09. In more than half of the investigated countries, mothers' and/or fathers' education level had small but significant direct effects on either both factors or only on one of the two factors. Summed up, higher parental education level predicted higher feelings of social belonging and lower feelings of social ostracism.

Table 2. Standardized regression coefficients for direct and indirect effects of parents' education level on sense of belonging

Country	BELNG on		OSTR on		STATT on		PAATT on		BELNG on		OSTR on	
	FED	MED	FED	MED	FED	MED	FED	MED	STATT	PAATT	STATT	PAATT
Belgium	-0.02	**0.08****	0.01	-0.03	**0.05***	0.03	0.01	0.03	**0.29*****	**0.05***	**-0.20*****	**-0.06****
Chile	**0.07****	0.03	**-0.11*****	**-0.07****	0.04	**-0.05***	**-0.06****	-0.01	**0.34*****	**0.14*****	**-0.25*****	**-0.08*****
Croatia	0.03	-0.01	-0.01	-0.01	0.02	0.02	-0.01	**-0.05***	**0.33*****	**0.05****	**-0.25*****	**-0.04***
Germany	0.05	0.03	-0.02	-0.02	0.06	-0.03	-0.04	0.02	**0.38*****	**0.09***	**-0.20*****	**-0.09****
Hong Kong	**0.09****	0.00	**-0.08****	0.04	0.02	0.04	-0.02	-0.04	**0.37*****	**0.11*****	**-0.30*****	**-0.07****
Hungary	0.02	-0.05	-0.01	-0.05	**0.08****	0.03	-0.02	0.03	**0.39*****	**0.06***	**-0.21*****	**-0.09*****
Italy	0.00	**0.03****	0.01	**-0.03*****	**0.03****	0.01	**-0.02****	**-0.02****	**0.33*****	**0.09*****	**-0.20*****	**-0.06*****
Korea	**0.07****	**0.07****	0.01	-0.4	**0.11*****	0.00	**0.06****	0.02	**0.36*****	**0.09*****	**-0.22*****	-0.02
Macao	0.03	0.04	-0.02	0.04	**0.05***	**0.04***	**0.06****	-0.02	**0.35*****	**0.12*****	**-0.22*****	**-0.08*****
Mexico	0.01	**0.04*****	**-0.04*****	**-0.07*****	**0.05*****	**0.03****	**-0.04*****	-0.01	**0.47*****	**0.06*****	**-0.25*****	**-0.02****
Portugal	**0.06****	-0.01	-0.03	-0.01	**0.12*****	**0.06****	0.04	**-0.05***	**0.31*****	**0.10*****	**-0.29*****	**-0.07****

Notes. BELNG = Sense of Belonging; OSTR = Social Ostracism; FED = Fathers' Education Level; MED = Mothers' Education Level; STATT = Students' Attitudes toward School; PAATT = Parents' Attitudes toward School. *p* < .05, **p* < .01, ***p* < .001

In addition, we tested for indirect (i.e., mediated) effects. We assumed that parents' attitudes toward school would mediate the effect of parental education level on students' sense of belonging (Hypothesis 2). The significant coefficients for the regression of *parents' attitudes toward school* on mothers' education level range from -.02 to -.05 across countries, and on fathers' education level from -.06 to .06 (see Table 2 and Figure 2). This direct effect was significant in more than half of the countries. Thus, the higher the mother's education level was, the more negative was their attitude toward school. For fathers, similar directions were found in some countries, opposite directions were found for others. In all countries, the effect of parents' attitudes was significantly positively associated with *social belonging* and negatively with *social ostracism*. Thus, the more positive parents' attitudes toward school are, the more students feel they belong to school and the less they feel socially excluded. Thus, parents' attitudes toward school seem to mediate the effect of parents' education level on students' feelings of being an outsider and not belonging to school in at least about half of the investigated countries.

Further, we assumed that students' attitudes toward school would mediate the effect of parental education level on social belonging and social ostracism (Hypothesis 3). Fathers' education level had a significant positive effect on *students' attitudes toward school* in more than half of the countries (coefficients range from .03 to .12), whereas mothers' education level had a significant positive effect in only a few countries (coefficients range from -.05 to .06; see Table 2 and Figure 2). In all countries, the negative relation between social ostracism and students' attitudes (coefficients range from -.20 to -.30), as well as the positive relation between social belonging and students' attitudes (coefficients range from .29 to .47), was significant: The higher the parents' education level, the more positive are students' attitudes; the more positive students' attitudes, the lower are their reported levels of social ostracism and the higher their reported social belonging. Moreover, students' attitudes seem to mediate the effect of parents' education level on social ostracism.
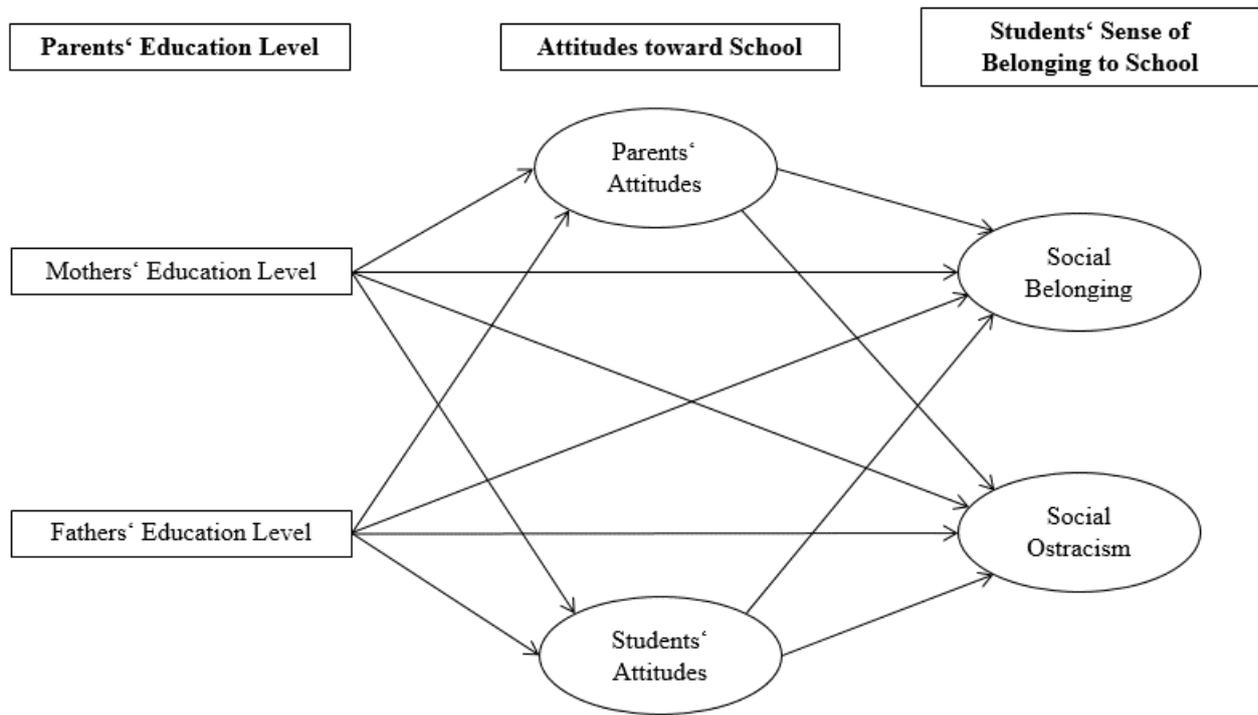
Figure 2. Path model of parental education level, parents' and students' attitudes toward school, and students' sense of belonging.

Last, we compared the effect of parental education in more and in less individualistic countries. This focuses on countries with a Hofstede individualism score < 30 in our sample: Chile, HongKong, (South) Korea, Macao, vs. countries with a score > 60: Belgium, Germany, Hungary, Italy. Although the differences are small they are consistent and in line with the theoretical considerations. The standardized regression coefficients are, on average, smaller in more individualistic countries and higher in less individualistic countries. Yet, this difference along the dimension of individualism is more prevalent for social belonging than for social ostracism. Thus, as expected, more individualistic countries have a weaker relation between parents' education level and sense of belonging, on average, than less individualistic countries that have a stronger relation, especially when it comes to social ostracism (see Table 2 and Figure 1).

Discussion

In the present study, we examined the relation between parental education level and students' sense of belonging at school. Moreover, we tested for possible mediators (parents'

and students' attitudes toward school) that were assumed to affect students' sense of belonging.

First, we examined the factor structure of the construct *sense of belonging to school*, which was assumed to be one-factorial. However, the results indicated a two-factorial structure (i.e., one factor that represents items of social ostracism and the other factor indicating social belonging). This finding is not surprising because the items of the factor social ostracism were negatively phrased (e.g., "I feel lonely at school") and the items of the factor social belonging were positively phrased (e.g., "I feel like I belong at school"). This is often found among scales with positively and negatively phrased items and can be modeled in a bi-factor model. We also tested for metric invariance and found scalar invariance for the factor social ostracism and metric invariance for social belonging. These differences were regarded by including both factors as dependent variables and testing the proposed model for each country separately.

After that, the relationship between parental education level and both social belonging and social ostracism was tested. Interestingly, the path coefficients were significant for the regression of *social belonging* on parental education level in almost all countries. Thus, as expected and as demonstrated in previous studies, the higher the parental education level was, the more students felt they belonged at school. A possible mechanism could simply be that students whose parents have a higher education level grew up in an "academic world" (i.e., in a setting that values and promotes academic achievement, as can be indicated by more books in the household, politics are discussed during shared meals etc.) and, therefore, feel more as though they belong to academia, such as school. Further, well-educated parents are more able to support their children if they encounter social ostracism, are more likely to encourage them and overcome possible problems that cause such negative feelings. Further, parents with a high education should have higher self-esteem and higher self-confidence, which should influence their children and buffer their children's feelings of social ostracism.

The effect of parental education on feelings of social ostracism was significant in only a few countries. One explanation for this could be that the items measuring social ostracism focus on students' feelings (e.g., "I feel like an outsider at school"), whereas items measuring social belonging focus more on making friends (e.g., "I make friends easily at school"). Further, making friends depends on how often people meet each other (cf. Zajonc, 1968) and how close people are spatially (Latané, Liu, Nowak, Bonevento, & Zheng, 1995) which often is determined by social background, i.e., people with the same social background living in the same areas. In line with the proximity effect (Latané et al., 1995), people become friends when they find themselves in the same place at the same time.

Next, we investigated possible mediators of the relation between parental education level and students' sense of belonging. We assumed that parents' attitudes would mediate the effect of parental education on students' feelings of belonging. Surprisingly, the effect is negative; thus, the higher their parents' education level is, the more negative are their attitudes. Only in Korea and Macao, the effect is positive and only for fathers' education level. Further, and as expected, parents' attitudes were significantly positively related to social belonging and significantly negatively to social ostracism in all countries. Thus, at least in almost half of the countries, parents' attitudes toward school serve as a mediator. Why mothers' and fathers' attitudes toward school were not significantly related to their education level in all countries can be explained by the fact that the questionnaire was filled out either by the student's mother or father; thus, the measure represents the attitude of only one parent. The worthiness of education and the evaluation of the child's schooling might on the contrary be a family value that cannot be aligned with one parent's educational attainment but results from interaction and exchange between family members. Further, why parents' attitudes were mostly negatively related to their attitudes can be a methodological artefact. The items measuring parents' attitudes about school focus specifically and solely on their child's school and not on school in general, or academia (e.g., "My child's progress is carefully monitored

by the school"; "My child's school does a good job in educating students"). The items can be seen as a summary of the evaluation of their child's school and one can assume that more educated parents hold more critical opinion towards certain issues like monitoring a child's progress.

Further and as expected, the results indicate that students' attitudes serve as a mediator for the relation between parental education and sense of belonging. More precisely, parents' education level is positively related to students' attitudes toward school, and these attitudes seem to reduce feelings of social ostracism. Furthermore they also seem to affect their feelings of social belonging. Surprisingly, the path between mothers' education level and students' attitudes was significant in only a few of the investigated countries. This could indicate that students in a substantial number of countries still value their father's education more than their mother's, and let their attitude toward school be influenced to a greater degree by their father's education than their mother's.

Last, we compared results to see whether parental education is more strongly related to sense of belonging in less individualistic countries (according to Hofstede's individualistic score). As expected, the results indicate that, on average, more individualistic countries have a weaker relation between parents' education level and sense of belonging compared to less individualistic countries, which have a stronger relation. This is true especially when it comes to social ostracism. The stronger relation between parental education and social ostracism compared to social belonging could indicate that—independent of their culture—parents are more concerned about their children being excluded socially than they are about their children's feelings of belonging at school.

Practical and Methodological Implications

As stated above, students' attitudes seem to be a central variable regarding students' sense of belonging, and are directly related to parents' educational background. Thus, students whose parents did not participate in higher education might especially experience a weaker

feeling of belonging to their school because of their negative attitudes toward school. One practical implication that can be derived from the results of the study is that changing students' attitudes toward school in a positive way should directly lead to a stronger sense of belonging at school or to weaker feelings of social ostracism. This weaker feeling of social ostracism should then, in turn, enhance students' subjective well-being and performance at school. Research in the field of stereotypes has shown that it is difficult (but possible) to change attitudes (e.g., Eagly & Chaiken, 1993). Whereas Walton and Cohen's approach lies in enhancing students' sense of belonging by reframing the situation and introducing feelings of awkwardness, and by not belonging, as something that is common and temporary, the implications of our findings focus more on directly changing the students' attitude toward school. The items used in the present study to assess students' attitudes focus on the instrumental value of education (e.g., "Trying hard at school will help me get a good job") and on the purpose of school for education aspiration and career. Thus, the intervention to enhance social belonging should aim to change career aspirations and to introduce school as a means to reach one's career goals. First, students whose parents are less educated should learn to set career goals, and that it is "ok" to have higher goals than their current social background seems to offer. Second, students from a less educated family should be encouraged to try harder to achieve good grades and to get into a good college. It is therefore important to enhance students' self-efficacy.

Furthermore, in the present study, we tested our hypotheses using data from different countries. When conducting self-assessments for sense of belonging by using Likert-type items across countries, culture-specific response styles might bias the assessments, and response scales might be interpreted in different ways (cf. Attitude-Achievement-Paradox, Van de Gaer, Grisay, Schulz, & Gebhardt, 2012). The results of our invariance analyses confirmed this hypothesis and subsequent analyses took this into account. Another way of accounting for response styles and reducing bias in self-assessment is to introduce anchoring

vignettes, where the respondent evaluates several vignettes which describe individuals at different levels of the underlying construct (e.g., sense of belonging). The self-assessment of the respondent on the same construct can then be rescaled on his or her interpretation of the scale (for more information on anchoring vignettes, see King &Wand, 2007).

Conclusion

From the results of the present study, it can be concluded that sense of belonging is a more complex construct than initially presumed. Whereas the construct has been assumed to be one-factorial, it is two factors that are strongly negatively correlated which seem to form the overall construct of sense of belonging (i.e., social belonging and social ostracism). Further research should look more deeply into whether the two-factorial structure is merely a methodological artefact due to items focusing on school versus other students. For example, an item of social ostracism focusing on other students could be "Other students seem to exclude me."

Additionally, the mediating variables should be explored further because they are the key variables when it comes to changing students' sense of belonging. The answer to how to make students feel they belong to their school lies within those mediating variables. According to the present results, sense of belonging—especially of students from less educated families—can be enhanced by changing their attitudes toward school. They should feel that school is important and education opens the opportunity to become and to achieve whatever they want.

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