

Influence of School Factors on Students' Sense of School Belonging

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Abstract

Sense of school belonging is related to school/classroom social membership. Students' sense of school belonging depends on teachers, classmates and parents, and arises from a positive interpersonal relationship based on care and support, which contributes to students' sense of community. The scientific problem analysed in the article is defined by the following question: which factors of school educational environment are significant for the sense of school belonging and social membership to arise? The databases of tests, student and school questionnaires of the OECD PISA worldwide study were used for the survey. 4618 students aged 15 from 216 general and vocational schools of Lithuania participated in the survey. Analysis of data showed that some factors of school educational environment have a positive, while other ones – negative relation to the sense of school belonging.

Keywords: *sense of school belonging, school environment, social membership, school influence*

Introduction

Sense of school belonging is a concept which defines the extent to which students feel personally accepted, respected, involved in common activity and supported by teachers, other community members in the school environment, how much and in what way their individuality is regarded in decision making.

The sense of school belonging shows the extent to which students are involved in school activity, have an opportunity to make decisions, have a valuable relationship with teachers and other students, feel support and assistance (Juvonen, 2006). A deeper sense of school belonging enhances a positive impact of school, empathy, self-respect, optimism, and a subjective sense of happiness (Anderman, 2002; Battistich, et al., 1997, 1995), and encourages students' participation in school life (Freeman, et al., 2007). This sense primarily depends on teachers, then – on the level of acceptance and appraisal by classmates and parents, which is related to the sense of relatedness (Furrer, Skinner, 2003).

Sense of school belonging is related to the student's well-being, self-esteem in organisation, subjective self-assessment related to the sense of respect, acceptance at school and identity, i.e., school/class social membership (Goodenow, 1993). School structural organisation, teachers' assistance, fostering of social values – these are the positive factors which are associated with the sense of school belonging (Anderman, 2002; Freeman, et al., 2007; Battistich, et al., 2010).

The following three factors are important for the sense of school belonging (Albert, 2012): communication, opportunity and participation. Firstly, the student must be provided with proper conditions to study and improve his/her skills. The possibility of the child to adapt to the school environment, get accustomed to it and become a part of it depends on the provided opportunities for education, involvement and encouragement to participate in the educational process, feeling of positive emotional and social relation. The teacher is responsible for ensuring proper student activity, possibility to contribute to class/school activity and feeling recognized for the contribution made (Albert, 2012).

Secondly, the quality of participation in the educational process is very important. The sense of school belonging is fostered only by the student's participation which gives him/her a positive learning experience and makes him/her feel good. The teacher's assignments must help the child to feel able to achieve the set goal, receive help and support (Albert, 2012).

Thirdly, neither proper opportunities nor participation itself will contribute to the sense of school belonging if there is no positive relationship between the teacher and the student. The teacher is a role model for the student. Favourable communication culture between the teacher and the student must be fostered because successful communication results in the achievement of the set goals. The student understands and comprehends only when he/she wants to: "kids don't learn from people they don't like" (Pierson, 2013-TED talks). When there is no positive interpersonal relationship, it is hard to convey information and encourage the child to do something not forcibly but through understanding of benefit.

One of the key roles in fostering the sense of school belonging is attributed to the teacher and school in general. Researchers (Harter, 1996) established that children from families in need and socially disadvantaged families may sometimes have an even unnaturally absolutized sense of school belonging, i.e., teachers may compensate for the lack of parents' support. Lack of an interpersonal relationship and favourable microclimate may have a negative impact on students' self-perception, satisfaction with life and their wish to study. A good relationship of the teacher and the student with school, teachers and peers influences students' inclination to progress, fully-fledged membership in a social group (Green, et al., 2016, Durlak, et al., 2011), creates motivation; the student feels comfort and support when difficulties arise. Moreover, help in dealing with problems develops resilience and self-reliance when facing new problems.

The conclusions of studies and perceptions of various researchers and conceptualization of the sense of school belonging allows for distinguishing the key components of this concept:

- Interpersonal relationship (connection) between students and teachers increases the student's self-confidence, creates a sense of security (Libbey, 2004);
- Educational contribution: teachers must contribute to the provision of proper conditions for students' self-realization (Green, et al., 2016, Zins, et al., 2004);
- Capability: students must and can contribute to school activity, make decisions and feel positively evaluated by teachers and peers (Battistich, et al. 2010; Furrer, Skinner, 2003).

Students' sense of school belonging, also called school connectedness (Resnick 1997), is displayed through a positive interpersonal relationship (Baumeister, Leary, 1995) and identification with school (Finn, 1989). Both subjective evaluation of children and practical factors which contribute to enhancing the student's sense of school community and in which interpersonal relationships are based on care and support allowing the student to make a decision are important (Battistich, et al., 2010). Therefore, the sense of school belonging means that the child is willingly involved in school life, maintains contacts with the community (both teachers and students) and feels supported, assisted, understood and respected.

The purpose of the survey was to determine the school educational environment factors which influence the sense of school belonging of Lithuanian students based on the OECD PISA survey data.

The scientific problem is determined by the following questions: Which factors are significant to the sense of school belonging of Lithuanian students? How

important is the influence of school and teachers for the sense of belonging and social membership to arise?

Research Methodology

The Lithuanian database of student questionnaires of the OECD PISA 2012 worldwide study on 15-year-old students was used for the survey. The variables selected for the analysis were related to the construct of the sense of school belonging, those comprising this construct or influencing it. The results of the OECD PISA 2015 are already available now, yet in 2015, the study on the sense of school belonging was not so wide: the data collection instrument provides fewer features attributed to the construct of the sense of school belonging.

Survey sample. In 2012, 4618 students from 216 general and vocational schools of Lithuania participated in the international survey on 15-year-old students. **School sample type** – a systematic probability sample according to the type of school location, school size and language of study. All the types of schools (lower secondary schools, secondary schools, middle schools, vocational schools) in all the types of locations (capital, cities, towns and villages) with all the predominant languages of study (Lithuanian, Russian and Polish) were selected for the survey. **Student sample type** – a systematic probability sample within the school according to form and language of study. 2–30 students aged 15 (different forms and different languages of study) from each school participated in the survey. Only 15-year-old students participated in the survey, irrespective of the form, starting from the 7th form.

Methods. During the OECD PISA study, the data were collected by means of tests and questionnaires (methodology thereof is described in the *PISA 2012 Technical Report* (OECD, 2014)). Computer technologies were used for filling in the tests and questionnaires. The methods of analysis of the survey data applied in this article are factor analysis, independent samples T-test, linear regression and graphic representation. IBM SPSS 24 software was used for data analysis.

Survey ethics. The schools and students participated in the OECD PISA survey voluntarily according to the requirements set by the OECD. The students were tested by external persons who were not related to the schools participating in the survey. During the survey organization and data analysis students' and schools' anonymity was fully ensured. Data were analysed and results were provided as aggregated countrywide data only.

Calculation of an index of the sense of school belonging. The features used for the sense of school belonging in the OECD PISA are presented in the second

column of Table 1. Questions were provided to the students in the form of a Likert scale. The semantics of some features is positive, while that of other features – negative; therefore, the negative semantics data were recoded conversely. In the table, the recoded estimates are marked (+). A factor analysis method was used for the calculation of an index of the sense of school belonging.

Table 1. Construct of an index of the sense of school belonging

Index of sense of school belonging (Cronbach alpha = 0.81, KMO = 0.82, Barlett's test: $p < 0.0001$)	Component
I feel like an outsider (or left out of things) at school (+)	0.65
I make friends easily at school	0.66
I feel like I belong at school	0.41
I feel awkward and out of place in my school (+)	0.67
Other students seem to like me	0.60
I feel lonely at school (+)	0.68
I feel happy at school	0.70
Things are ideal in my school	0.69
I am satisfied with my school	0.68

The parameters provided in Table 1 show that the features analysed are interdependent and suitable for factor analysis: the values of the parameters of Kaiser-Meyer-Olkin measure and Barlett's sphericity criterion are great (0.82 and $p < 0.0001$ respectively). Compatibility of the features is also high (Cronbach's alpha = 0.81).

Results and Discussion

Which factors related to school, teachers and learning are connected with the sense of school belonging and influence it?

One of the strongest connections with the sense of school belonging was observed in the teacher-student relation factor. In the OECD PISA survey, there are a number of features provided in the student questionnaire which are related to teacher-student relation. Questions for students were formulated in the form of a Likert scale. A factor analysis method was used for the calculation of the teacher-student relation index (cf., Table 2).

The parameters in Table 2 show that the features analysed are interdependent and suitable for factor analysis: the values of the parameters of Kaiser-Mey-

Table 2. Construct of teacher-student relation index

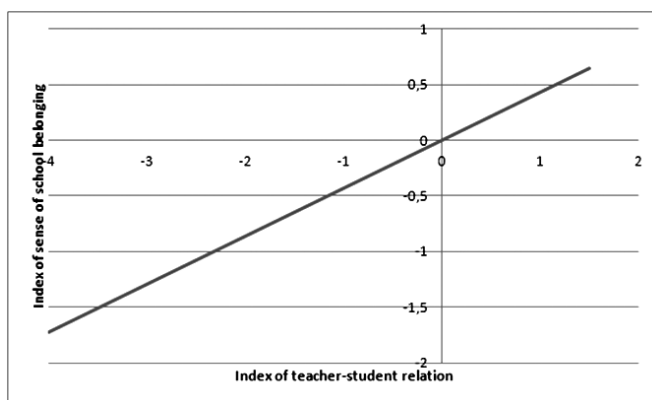
Teacher-student relation index (Cronbach's alpha = 0.82, KMO = 0.83, Barlett's test: $p < 0.0001$)	Component
Students get along well with most teachers	0.73
Most teachers are interested in students' well-being	0.76
Most of my teachers really listen to what I have to say	0.80
If I need extra help, I will receive it from my teachers	0.77
Most of my teachers treat me fairly	0.76

er-Olkin measure and Barlett's sphericity criterion are high (0.83 and $p < 0.0001$ respectively). Factor component coefficients and compatibility of the features are also high (Cronbach's alpha = 0.82).

Regression was calculated to estimate the connection of the teacher-student relation with the sense of school belonging. The regression formula is as follows:

$$\text{sense of school belonging} = 0.001 + 0.431x + e, p < 0.0001; R^2 = 0.19$$

Visual representation of the connection is shown in Figure 1.

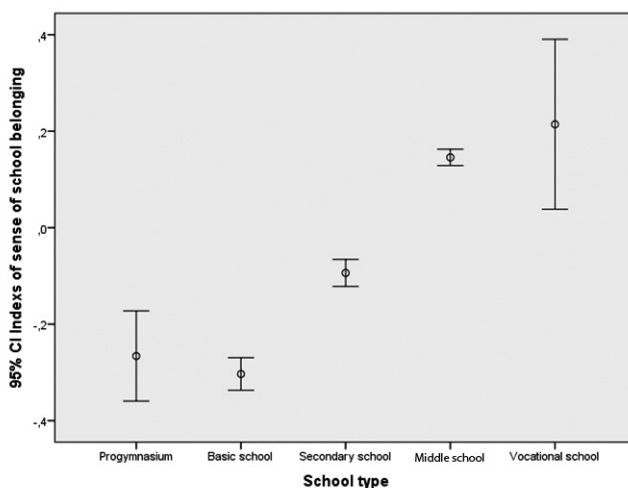
Figure 1. Connection of the sense of school belonging with the teacher-student relation

As shown in Figure 1, the connection between the sense of school belonging and the teacher-student relation is high. This connection corresponds to other researchers' results revealing that the sense of school belonging primarily depends on teachers (Furrer, Skinner, 2003).

Analysis of other school factors showed that the sense of school belonging is connected with school type. Figure 2 shows the averages of the index of the sense of school belonging with confidence intervals according to school type. As can be seen, the average strength of the sense of school belonging of students of different school types differs. The average indices of the sense of school belonging of students of lower secondary schools are similar and are the lowest ones, compared to all the other school types. The average sense of school belonging of the students of secondary school is significantly higher and that of middle school students – even higher (the results of the application of independent samples T-test show that the averages of the index of the sense of school belonging of the students of lower secondary school, secondary school and middle school statistically significantly differ: $p < 0.0001$).

Nothing certain can be said about the average strength of the sense of school belonging of the students of vocational school due to too high confidence interval (students of vocational school accounted for a small proportion in the survey sample). The results show that at the schools which do not have the highest forms (lower secondary school), the students have less feeling of being a part of the school community. It can be assumed that this can be related to the fact that 15-year-old students of lower secondary school are already finishing school, while 15-year-old students attending secondary school or middle school still have several years of

Figure 2. Averages of the index of the sense of school belonging by school type



studies ahead of them at school and thus they associate their future and identify themselves with school more.

It is interesting to note that analysis of the students' academic achievement and connection thereof with various school factors also reveals the connection of the students' achievements with the school type and this connection is statistically significant. The connection of achievements with school type is obtained in the OECD PISA, IEA TIMSS and IEA PIRLS surveys.

Other factors for which a significant connection with the students' sense of school belonging was observed were truancy and being late for school. During the survey, the students were asked how many times over the last two weeks they: had been absent from school for a day without due cause, had skipped several lessons without due cause and had been late for school. The results are presented in Figures 3–5.

Figures 3 and 4 show the obvious relation between school and skipping of lessons without due cause and the sense of school belonging – the more often a student skips lessons or is absent from school the weaker his/her sense of school belonging is (lower index values). All these differences are statistically significant (independent samples T-test $p < 0.0001$ in all the cases, except between skipping of lessons without due cause 1–2 and 3–4 times; independent samples T-test $p < 0.01$ between differences in the averages of skipping of lessons without due cause 1–2

Figure 3. Connection of sense of school belonging with truancy

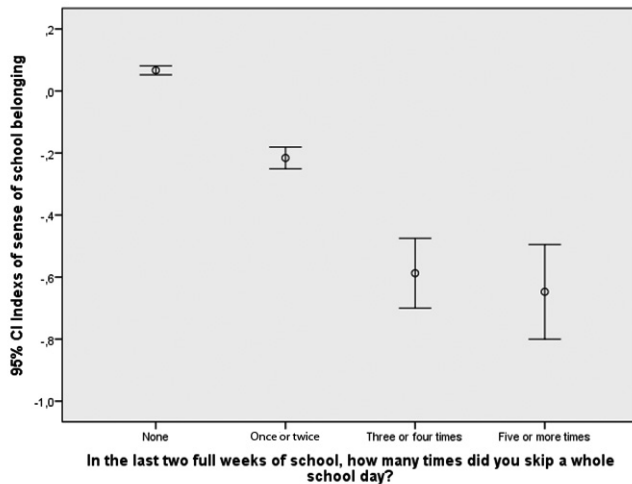


Figure 4. Connection of sense of school belonging with skipping of lessons

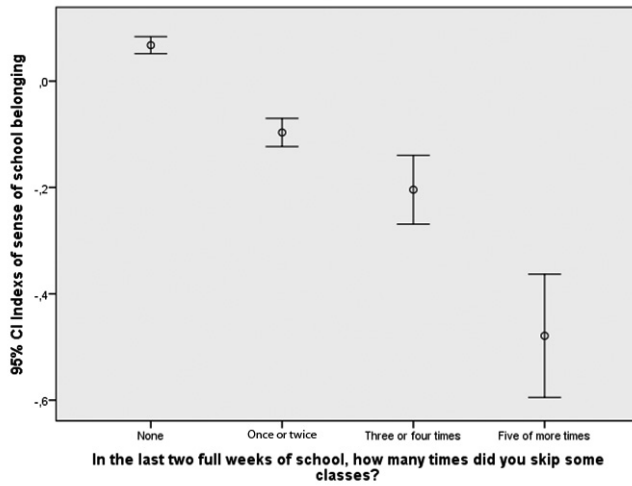
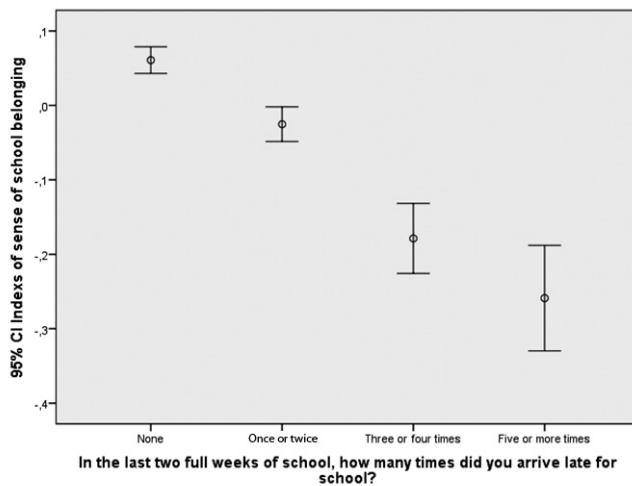


Figure 5. Connection of sense of school belonging with being late for school



and 3–4 times). Figure 5 shows the same trend – the more often a student is late for school the weaker his/her sense of school belonging is (independent samples T-test $p < 0.0001$ between all the differences in averages, except that between being late for school 3–4 and 5 and more times – in this case, there were no statistically significant differences in averages obtained, $p \geq 0.05$).

These results can be interpreted in two ways – being late for school and skipping of lessons have a negative impact on the formation of the student's sense of school belonging, or if the student does not feel good at school and does not have a feeling of being part of it then he/she has no wish to go to school, skips lessons and is late for school. Similar result was obtained in the case when the student must stay in the same form for the second year to repeat the study course – the sense of school belonging of the students who have been left in the same form for another year or longer is significantly weaker than that of the students who have never repeated the study course for the second year (cf., Figures 6–7; independent samples T-test $p < 0.0001$ between all the differences in the averages, except those between the students who have not been left for the second year in the 5th–10th forms and the students who have been left in the same form for the second year in the 5th–10th forms once – in this case the independent samples T-test $p < 0.001$). This result can also be interpreted in two ways: leaving a student in the same form for the second year has a negative impact on the formation of his/her sense of school belonging, or if a student does not feel good at school and does not have a feeling of being part of it then he/she shows no effort and has no motivation to study.

Analysis of various activities organised for students by their schools and the connection of such activities with the sense of school belonging revealed a statistically significant connection only with one activity – the students have a stronger sense of school belonging when school allows the students to engage in voluntary work, serve the poor, the sick and children (cf., Figure 8). A statistically significant connection with the sense of school belonging was not observed for any other activities organised by school, such as music groups, orchestra or choir, plays or musicals, publication of a school yearbook, newspaper or magazine, competitions, school contests, clubs (e.g.: chess, maths, computer), workshops, or sport teams.

Figure 6. Connection of sense of school belonging with staying in the 1st –4th forms for the second year

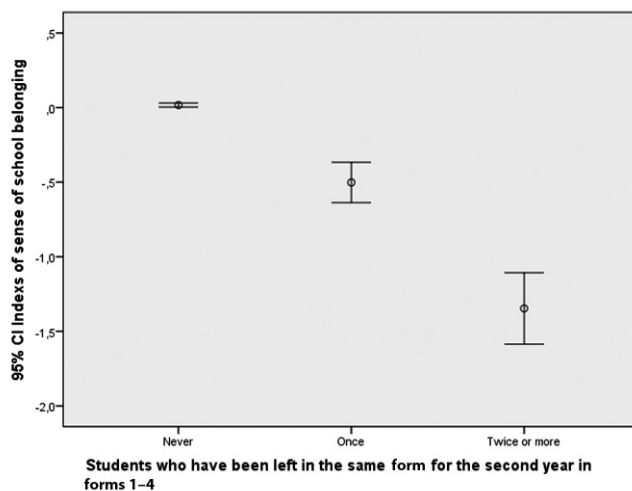


Figure 7. Connection of sense of school belonging with staying in the 5th–10th forms for the second year

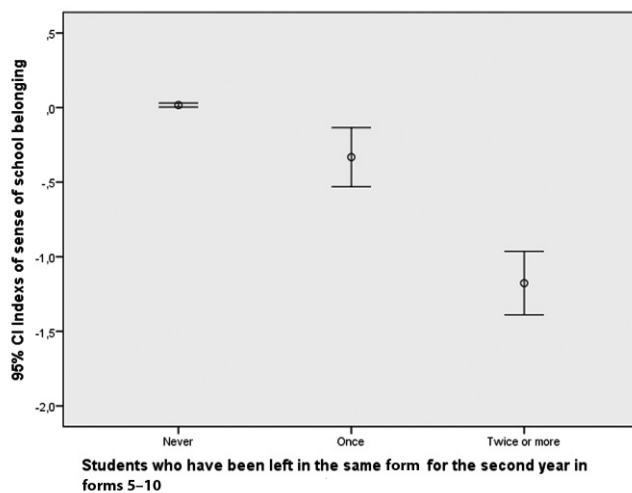


Figure 8. Connection of sense of school belonging with voluntary activity organized by school

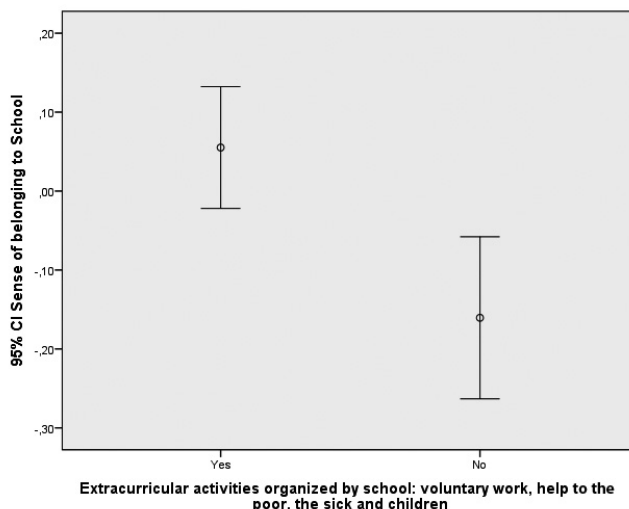


Figure 8 shows that the students of the schools which provide an opportunity to engage in voluntary work feel a stronger connection with school than those of the schools which do not organise voluntary activities or do not allow for engaging in such activities. This difference is statistically significant (independent samples T-test $p < 0.001$).

It is interesting that among various activities organized by schools, a connection with the sense of school belonging was observed only for one activity – organisation of voluntary activities. Compared to other activities offered at schools (workshops, school contests, sports, competitions, etc.), voluntary work is the least competitive activity – perhaps that is why the activity which does not encourage competition allows for seeing the other person most clearly, feeling needed and feeling communion with others.

Analysis of other factors of the school educational environment with the sense of school belonging did not reveal any other statistically significant connections. Connection of the following factors with the sense of school belonging was analysed: school subordination (private or public school), school location (capital, city, town, village), size (according to the number of students), size of classes, teachers' education, lack of teachers of certain subjects, school resources (e.g.: number

of computers), lack of school resources (e.g.: lack of textbooks), convenience of school premises, differentiation of students by their skills, parents involvement in school life, etc.

Conclusions

The concept of sense of school belonging is defined by including several important components: a relation between teachers and students, which enhances self-confidence and creates a sense of security; assistance of teachers, provision of proper conditions for self-realisation to students; opportunity for students to contribute to school activity and feel positively evaluated by teachers and peers.

The following factors of the school educational environment have a statistically significant positive connection with students' sense of school belonging: teacher-student relation, school type, opportunity for students to engage in voluntary work and serve others as extracurricular activities. The following factors of the school educational environment have a statistically significant negative connection with students' sense of school belonging: skipping of lessons without due cause, being late for school, and staying in the same form for the second year.

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