Students' School Engagement and Their Truant Behavior: Do Relationships with Classmates and Teachers Matter?

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Abstract

Research on school dropout suggests that the decision to drop out of school is not a sudden or immediate one, but rather the result of a long-term process of withdrawal from school. While school engagement and truancy are among the most prominent constructs to be associated as precursors of school dropout, the relationship between these two constructs needs further analysis. Our study establishes more comprehensive understanding of school engagement and truancy by focusing on students' individual characteristics and their relationships in school, particularly the student-teacher relationship and relationships with peers. It demonstrates that among the individual characteristics the migration background is crucial for school engagement, while the student age is important for truancy. Furthermore, peer-relationships are positively related to students' school engagement, but not to their truancy. Furthermore, a good student-teacher relationship not only has positive impacts on students' school engagement, but is also negatively associated with truancy, while school engagement mediates this path.

1. Introduction

One of the pressing topics for educational equity in OECD countries is early school leaving or school dropout. Students who do not complete their post-compulsory education are at risk of societal exclusion because the successful completion of secondary education leads to better jobs and healthier lifestyle prospects (OECD, 2012). In line with this, a review study by Lamb and Markussen (2011, p. 5) shows that despite some contextual differences all definitions of school dropout share the understanding that a dropout is 'a person who is no longer at school and does not hold an upper secondary qualification'. In Switzerland, as in other European countries, the term school dropout describes an 18- to 24-year-old person who has not successfully completed post-compulsory education and has not begun another type of training (Lamb & Markussen, 2011). In the European Union, the rate of school dropout varies greatly between different countries with an average rate of 12.7% (European Commission, 2013). However, 'the share of early school leavers among foreign-born is on EU average more than twice as high as for natives (25.4% compared to 11.5%)' (European Commission, 2013, p. 7). Similarly, the dropout rate in Switzerland differs greatly according to students' origins. Among youth who were born in Switzerland the dropout rate is 6%, whereas among students who were born abroad this rate attains 13.8% (Federal Statistical Office (FSO), 2018). The high dropout rate among students with an immigrant background compels researchers to gain a more comprehensive understanding of reasons for school dropout, in order to make the education systems in European countries more inclusive for heterogeneous student populations.

1.1 Research on School Dropout and Its Precursors

Research on school dropout reveals that the decision to drop out of school is not a sudden or immediate one (Stamm, 2012), but rather the result of a long-term process of withdrawal from school (Alexander, Entwisle, & Horsey, 1997). Thus, in order to understand this process, it is much more important to study the *gradual withdrawal from school* than the final step of dropping out (Lamb, 2011). In contemporary research, there are various theoretical approaches to analyze the process of gradual withdrawal from school. The concept of *hidden school dropout* focuses on psychological absenteeism from school and states that students can be physically present at school, but distance themselves mentally from it (Makarova & Herzog, 2013; Sultana, 2006). The approach of *school alienation* focuses on a multidimensional set of negative attitudes towards social and academic domains of school including cognitive and emotional elements (Hascher & Hadjar, 2018; Morinaj,

Scharf, Grecu, Hadjar, Hascher, & Marcin, 2017). Finally, *school engagement* is one of the most prominent constructs associated as precursors of school dropout (Rumberger & Ah Lim, 2008). School engagement is defined as 'the student's psychological investment in and effort directed toward learning, understanding, or mastering the knowledge, skills, or crafts that academic work is intended to promote' (Newmann, Wehlage, & Lamborn, 1992, p. 12).

Research on school engagement is relatively young (Appleton, Christenson, & Furlong, 2008) and therefore 'school engagement as a topic of investigation and educational practice is yet to emerge' (Furlong et al., 2003, p. 100). Despite the ongoing dispute with respect to the theoretical model, definition and assessment of school engagement (Furlong et al., 2003; Fredricks, Blumenfeld, & Paris, 2004; Jimerson, Campos, & Greif, 2003; Reschly & Christenson, 2012), researchers concur that school engagement is a multidimensional construct that combines behavioral, emotional and cognitive aspects (Fredricks et al., 2004; Fredricks, Blumenfeld, Friedel, & Paris, 2005; Wang & Eccles, 2013; Wang, Willet, & Eccles, 2011).

With respect to school dropout, a review study by Rumberger and Ah Lim (2008) reported that over two-thirds of the studies analyzed found a relationship between school engagement and dropout in high school, while higher levels of school engagement reduced the probability of dropping out or increased the probability of graduating. Correspondingly, Henry, Knight and Thornberry (2012) as well as Fall and Roberts (2012) provided empirical evidence that school disengagement predicted later school dropout and/or that school engagement decreased the probability of dropping out.

Research on school engagement refers to truant behavior as the most common specific indicator of engagement (e.g. Markussen, Froseth, Sandberg, Lodding, & Spord Borgen, 2011; Rumberger & Ah Lim, 2008). Other studies have focused on truancy, not as an element of school engagement itself, but as an independent factor which is negatively correlated with students' behavioral engagement (Virtanen, Lerkkanen, Poikkeus, & Kuorelahti, 2014). Linssen and Grewe (2005), furthermore, addressed truancy as the most significant 'European issue'. Truancy is defined as a gradual increase in being absent in school (Stamm, 2007). It usually relates positively to dropping out, i.e. students with a higher truancy rate are more likely to drop out and less likely to graduate (Rumberger & Ah Lim, 2008). Therefore, irregular school attendance may be seen as one of the first steps toward school dropout (Rosenblum, Goldblatt, & Moin, 2008). However, the question of the relationship between the two constructs, school engagement and truancy, remains a subject for further empirical analysis.

1.2 Who Is at Risk of Low School Engagement?

Addressing the question why students quit school, Lamb (2011) summarized several types of effects on multiple levels of analysis, such as individual student effects, family effects, school effects, peer effects, community effects, and nation effects. Focusing on individual and school-related determinants of students' school engagement, a Swiss study by Makarova and Herzog (2013) suggested that those predictors which are important toschool dropout are also crucial to students' school engagement.

Among *students' individual characteristics,* studies consistently showed that age is negatively related to school engagement (Blumenfeld et al., 2005; Damian, Stoeber, Negru-Subtirica, & Băban, 2017; Makarova & Herzog, 2013). With regard to sex, studies consistently reported that boys are less engaged in school than girls (Audas & Willms 2001; Blumenfeld et al., 2005; Fredricks et al. 2005; Makarova & Herzog, 2013; Marks, 2000; Roderick, 2003; Yazzie-Mintz, 2010). In the context of ethnicity, the empirical evidence is heterogeneous. Some studies reported less engagement among minority students (Audas & Willms 2001; Bingham & Okagaki, 2012), whereas others reported no differences or even more engagement among minority students, depending on their ethnicity (Johnson, Crosnoe, & Elder, 2001; Makarova & Herzog, 2013; Shernoff & Schmidt, 2008; Uekawa, Borman, & Lee, 2007). Finally, with respect to family background, empirical evidence showed that a higher socio-economic status was associated with greater school engagement (Marks, 2000; Yazzie-Mintz, 2010).

Among *school-related factors,* students' attitudes to the formal aspects of school, their academic achievement and their relationships with peers and adults at school were found to impact students' school engagement (Audas & Willms, 2001; Furrer & Skinner, 2003; Göbel, Makarova, & Filsecker, 2016; Lamb, 2011; Makarova & Herzog, 2013; Roderick, 2003; Rumberger, 2001, 2004). In a number of studies the *quality of students' relationships in school* has been recognized as one of the prominent factors influencing students' school engagement (e.g. Birch & Ladd, 1997; De Laet et al., 2015; Makarova & Herzog, 2013; Wang & Eccles, 2013), and school-based supportive relationships were shown to have 'a key influence on academic engagement' (Suárez-Orozco, Pimentel, & Martin, 2009, p. 730).

Even if it seems clear that the quality of relationships with peers and teachers are important with regard to engagement, truancy, and dropout, there is only mixed evidence on the detailed nature of the associations

between these constructs. Some studies have stressed that both types of relationships—with teachers and with peers—are equally important and that each type is a necessary, but not a sufficient condition for school engagement (e.g. Rosenfeld, Richman, & Bowen, 2000).

Other studies viewed peer relationships and the student-teacher relationship as correlated aspects, but two unique predictors of school engagement (e.g. De Laet et al., 2015; Furrer & Skinner, 2003). For example, Virtanen et al. (2014) reported that students' perception of teacher support was positively associated with engagement, but that perceived peer support and school engagement were not associated. Wang and Eccles (2013) showed that peer social support predicted adolescents' school identification less strongly than teachers' social support. In contrast, Ladd, Birch and Buhs (1999) found that peer acceptance had the greatest impact on school participation. Finally, some studies showed an effect of one of the relationship sources on the other. For example, Hughes and Kwok (2006) reported a positive effect of teacher support on subsequent peer acceptance, which was fully mediated by school engagement.

With respect to the student-teacher relationship the most recent meta-analysis of 189 studies by Roorda, Jak, Zee, Oort, & Koomen (2017), in line with previous single studies which were not analyzed by the meta-analysis, reported a positive association between a positive student-teacher relationship or teacher support and school engagement (Battistich, Solomon, Watson, & Schaps, 1997; Cadima, Doumen, Verschueren, & Buyse, 2015; Garcia-Reid, Peterson, & Reid, 2015; McNeely & Falci, 2004; Papadopoulou & Gregoriadis, 2017). In addition, a negative association between a conflictual student-teacher relationship and school engagement were confirmed in previous research (Cadima et al., 2015; Papadopoulou & Gregoriadis, 2017). Furthermore, peer relationships and the student-teacher relationship were proven to be important factors not only in predicting school engagement, but also truancy, and school dropout. According to a longitudinal study by De Laet et al. (2015) not only was peer acceptance in Grade 4 associated with a less steep decline in behavioral engagement later on, but also had a significant positive effect on behavioral engagement in Grade 6. Similarly, some studies have not only shown an immediate effect of the student-teacher relationship on school engagement, but also a long term effect of that relationship on school engagement (Cadima et al., 2015; Da Laet et al., 2015; Doumen, Koomen, Buyse, Wouters, & Verschueren, 2012; Hughes & Kwok, 2006).

Few studies analyzed the associations between relationships in school, school engagement, and truancy. A study by Rosenfeld et al. (2000) showed that although the consequences of teacher support were relevant for school engagement as well as for truancy, they appeared to be greatest for affective variables like engagement and less important for school behavior like attendance. Finally, a study by Virtanen et al. (2014) demonstrated that school engagement mediated the negative association between teacher support and truancy. Woolley and Bowen (2007) found that, among other indicators, the quality of the student-teacher relationship played the mediating role in the negative influence of contextual risks on school engagement. These findings underline the important role of school engagement in connection with relationships at school and students' truancy.

Overall, we can state that research findings on the relation between school engagement and school dropout are consistent, suggesting that low school engagement can lead to eventual school dropout and that students' individual characteristics can be positively or negatively related to their school engagement. Moreover, research on school engagement suggests that the quality of student-teacher and student-student relationships in school are among those factors which have a strong and lasting impact on students' school engagement. Although studies on the student-teacher relationship differ in operationalizing the relationship construct, they commonly show that experiences of closeness, support and involvement in student-teacher relationships have a positive impact on students' school engagement. Similarly, students' experiences of peer acceptance and social integration in the school context have a positive impact on students' school attendance.

2. Method

Based on the state of current research, our study aimed to advance knowledge on students' school engagement by establishing a more comprehensive understanding of school engagement and truancy and by focusing on the meaning of students' individual characteristics and on their relationships with teachers and classmates. The following questions guide our empirical analysis:

    a)   Which students are at risk of low school engagement and high truancy?

    b)   How do relationships with peers and teachers impact students' engagement and their truant behavior?

    c)   Does low school engagement lead to more truancy?

The data for our analysis originated from the Swiss cross-sectional study *Latent school absenteeism,* which was conducted as a part of an international collaborative research project. This research project was aimed at

detecting the school-related and individual factors that determine school engagement and school dropout in various European countries (Author et al., 2014).

2.1 Sample

In all, 220 students from seven public schools in a German speaking part of Switzerland participated in the survey (47.9% female and 52.1% male). The students were between the seventh and ninth grade in 13 different classes, which had a high proportion of students with a migration background (on average 71.5%). The study distinguished between three categories of migration background. The category *immigrant* (51.9%) included youth of whom both parents were born abroad. Youth of whom only one parent was born abroad constituted the category *binational* (19.6%). Finally, students whose parents were both born in Switzerland comprised the category, *native youth* (28.5%). On average, the students were 14.7 years old.

2.2 Measures

The participants completed a questionnaire during class time and were instructed and supervised by trained research assistants. Mostly, the teachers left the classroom. In some situations they asked to stay with their class for reasons of classroom dynamics. However, they did not interfere in the conducting of the survey and the responsibility rested with the research assistants. The completion time was set to one lesson and announced to the students. All of the students completed the questionnaire in 37 to 55 minutes. For students who finished early, every teacher had assigned a task in advance of the survey that was to be completed individually and in silence afterwards. After each survey the research assistants completed a report in which they noted on one hand their evaluation of the class (concentration, talking, chuckling, etc.) and, on the other, their overall evaluation of the survey situation. Seven classes were rated as concentrated or highly concentrated. Five classes were rated as concentrated, but a little bit noisy, and one class was rated as difficult to handle. In nine of the 13 classes the overall evaluation was regarded as very easy or easy. The remaining four classes were regarded as average.

School Engagement was operationalized as combined behavioral, cognitive and emotional engagement (Fredricks et al., 2005 modified; 13 items, Likert scale from 1 to 4 (on occasion, some of the time, most of the time, all of the time), Cronbach's α = .80). For example, one item of the behavioral dimension was: 'I follow the rules of my school'.

Truancy was operationalized as the frequency of truancy within the last school year (Sälzer, 2010; seven items, Likert scale from 1 to 3 (never, from time to time, more than 5 times), Cronbach's α = .88) and measured with an item like: 'Did you skip school directly before or after school holidays during the last school year?'.

The scale *student-teacher relationship* (Schönbächler, 2008; five items, Likert scale from 1 to 4 (fully disagree, partly disagree, partly agree, fully agree), Cronbach's α = .89) included items like 'My teacher helps me with problems at school'.

Relationships with peers (Lehmann, Gänsfuss, & Peek, 1999; seven items, Likert scale from 1 to 4 (fully disagree, partly disagree, partly agree, fully agree), Cronbach's α = .79) was operationalized as the feeling of being part of the class and school and was measured with items like 'I have really good friends at school'.

The *students' individual characteristics* were operationalized as age, migration background (three groups: native, binational, immigrant youth) and sex. The *socio-economic background* was reflected by the family's (ISEI from the mother or the father, depending on which was higher) Highest International Socio-Economic Index of Occupational Status (HISEI), which was derived from the International Socio-Economic Index of Occupational Status (ISEI) (Ganzeboom & Treiman, 1996).

Finally, the study controlled for students' *grades* as a mean variable of the following subjects: instructional language (German), mathematics, and foreign language (French).

3. Results

In order to answer the research questions, a bivariate-correlations analysis and partial correlation analysis were first conducted to show existing associations between the included variables and constructs. Afterwards, the impact of students' individual characteristics and school-related factors on their engagement in school as well as on their truant behavior was analyzed. Based on these results, a mediation analysis was performed to investigate the connection between student-teacher relationship, engagement, and truancy.

3.1 Bivariate Correlations Between All Included Variables and Scales

In Table 1 the inter-correlations between the surveyed variables and scales are presented. The table shows that among students' individual characteristics neither migration background nor sex nor HISEI show a significant correlation with any of the target constructs (truancy, engagement, student-teacher relationship, and relationships

with peers). Age correlates significantly positively with truancy (Pearson's r=.24, p≤.01) and significantly negatively with the student-teacher relationship (Pearson's r=-.34, p≤.01). Finally, grades show slightly positive associations with school engagement (Pearson's r=.14, p≤.05).

All target constructs, except truancy and the relationships with peers, correlate significantly with each other. The correlation between truancy and the student-teacher relationship is negative (Pearson's r=-.22, p≤.01). In contrast, school engagement correlates positively with both relationship factors, the student-teacher relationship and relationships with peers. The correlation between engagement and the student-teacher relationship is stronger (Pearson's r=.41, p≤.01) than that between engagement and relationships with peers (Pearson's r=.19, p≤.01). Truancy and school engagement show a relatively strong negative correlation (Pearson's r=-.41, p≤.01). The student-teacher relationship and relationships with peers correlate moderately positively with each other (Pearson's r=.20, p≤ .01). In sum, the student-teacher relationship seems to be more strongly associated with engagement and truancy than relationships with peers. Furthermore, truancy and school engagement indicate different correlation patterns with students' age and grades, suggesting they are two different constructs.

Table 1. Inter-correlations

Variable	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Truancy (1)	-.41**	-.22**	-.04	.07	-.02	.24**	.07	-.04
Engagement (2)		.41**	.19**	.14*	-.08	-.13	.11	-.04
Relationship teacher (3)			.20**	.13	.02	-.34**	.02	.03
Relationships peers (4)				.06	.10	-.13	.10	-.03
Grades (5)					-.14*	-.20**	-.13	.11
Sex (6)						.17*	.03	-.05
Age (7)							.11	-.19**
Migration background (8)								-.31**
HISEI (9)								

Note. *p≤.05, **p≤.01, ***p≤.001; N=193-220.

3.2 Zero-Order and Partial Correlation

Due to the significant results of the correlation analysis, partial correlations were run to determine the relationships between our target constructs engagement, truancy, student-teacher relationship, and relationships with peers (see Table 2).

The results indicate that when sex, migration background, HISEI, age, grades, relationships with peers, and engagement are controlled for, there is no significant correlation between truancy and the student-teacher relationship. In line with this, when sex, migration background, HISEI, age, grades, relationship with teacher and engagement are controlled for, there is no significant association between truancy and relationships with peers. In contrast, students' school engagement shows a moderate to relatively strong positive association with the student-teacher relationship (Pearson's r=.34, p≤.001; control variables: sex, migration background, HISEI, age, grades, relationships peers, and truancy) as well as a weaker, but significant, association with relationships with peers (Pearson's r=.17, p≤.05; control variables: sex, migration background, HISEI, age, grades, relationship teacher, and truancy). The results for engagement and truancy show, even after controlling for sex, migration background, HISEI, age, grades, relationships with peers, and relationship with teacher, a moderate to strong negative correlation which is statistically significant (Pearson's r=-.42, p≤.001). These results support the assumption that the quality of relationships is crucial to school engagement, but at the same time indicate that there are other factors that affect the connection between truancy and relationships in school. Finally, the student-teacher relationship and relationships with peers show no significant correlation after sex, migration background, HISEI, age, grades, engagement and truancy are controlled for.

Table 2. Zero-order and partial correlation between the target constructs

Variable	(1)	(2)	(3)
Truancy (1)			
Engagement (2) [a]	-.41***		
Engagement (2)	-.42***		
Relationship teacher (3) [a]	-.22**	.43***	
Relationship teacher (3)	.00	.35***	
Relationships peers (4) [a]	-.02	.22**	.21**
Relationships peers (4)	.10	.17*	.10

Note. *p≤.05, **p≤.01, ***p≤.001; N=183; [a]Control variable (none).

3.3 Students' Individual Characteristics and School-Related Factors as Predictors of Their Engagement in School

In order to analyze the influence of students' individual characteristics and school-related factors on their engagement in school, a generalized linear model was applied. The covariates relationships with peers, student-teacher relationship and grades were included as school-related factors. The categorical predictors sex and migration background as well as the covariates HISEI and age were entered as students' individual characteristics. The model included 183 cases (83.2%). The fitted model is significant compared to the intercept-only model (Likelihood Ratio χ^2 (8, 183)=51.76, p≤.001). The goodness-of-fit test showed an acceptable fit (Deviance Ratio=.829). The test of model effects indicates that only one school factor (student-teacher relationship) and one individual characteristic (migration background) are significant predictors of students' engagement in school. The factor relationships with peers is not a significant predictor of school engagement (see Table 3).

Table 3. Test of model effect—Engagement

Parameter	Wald Chi-square	df	Sig.
(Intercept)	.00	1	.991
Relationship teacher	29.81	1	.000
Relationships peers	3.15	1	.076
Grades	1.19	1	.275
Sex	.76	1	.384
Age	.57	1	.449
Migration background	6.12	2	.047
HISEI	.06	1	.813

Note. Dependent variable: Engagement (z-score: M=.04, SD=1.03); Model (Intercept): Sex, migration background, HISEI (z-score: M=43.14, SD=13.49), age (z-score: M=-.07, SD=.97), grades (z-score: M=.04, SD=.95), relationships peers (z-score: M=.01, SD = 1.00), relationship teacher (z-score: M=.07, SD = 1.03).

The regression coefficient of the model shows that a positive student-teacher relationship is associated with greater engagement in school. The effect size, based on odds ratios Exp(β), indicates that students' school engagement is higher by a factor of 1.51 for students with a better student-teacher relationship (see Table 4). Additionally, binational students are less engaged in school than immigrant students. The effect size shows lower engagement for binational students by a factor of .63. The post-hoc pairwise comparison for every pair of the factor migration background shows a significant difference only between immigrant and binational students (Mean difference: .47, SE=.19, p≤.05).

Table 4. Students' individual characteristics and school-related factors as predictors of school engagement

Parameter	β	SE	Wald Chi-square	df	Sig.	Exp(β)
(Intercept)	.14	.20	.50	1	.479	1.16
Relationship teacher	.41	.08	29.81	1	.000	1.51
Relationships peers	.13	.08	3.15	1	.076	1.14
Grades	.09	.08	1.19	1	.275	1.10
Male	.12	.13	.76	1	.384	1.12
Female	0ª					1
Age	.05	.07	.57	1	.449	1.06
Native	-.15	.15	.94	1	.333	.86
Binational	-.47	.19	6.10	1	.014	.63
Immigrant	0ª					1
HISEI	-.00	.00	.06	1	.810	1.00

Note. ªSet to 0 because this parameter is redundant.

3.4 Students' Individual Characteristics and School-Related Factors as Predictors of Their Truant Behavior

A second generalized linear model was applied to analyze the influence of students' individual characteristics and school-related factors on their truant behavior. Again, the covariates student-teacher relationship, relationships with peers, and grades were included as school-related factors and the categorical predictors sex and migration background as well as the covariates HISEI and age were entered as students' individual characteristics. The model included 184 cases (83.6%). The fitted model is significant compared to the intercept-only model (Likelihood Ratio χ^2 (8, 183)=26.18, p≤.001). The goodness-of-fit test shows an acceptable fit (Deviance Ratio=.973). The test of model effects shows that among students' individual characteristics only age is a significant predictor of students' truant behavior. Migration background and the student-teacher relationship are not significant, but show a tendency to be so (see Table 5).

Table 5. Test of model effect—Truant behavior

Parameter	Wald Chi-square	df	Sig.
(Intercept)	.07	1	.792
Relationship teacher	3.18	1	.074
Relationships peers	.10	1	.747
Grades	2.25	1	.134
Sex	1.41	1	.235
Age	12.26	1	.000
Migration background	5.14	2	.077
HISEI	.07	1	.795

Note. Dependent variable: Truancy (z-score: M=-.02, SD=1.04); Model (Intercept): Sex, migration background, HISEI (z-score: M=43.18, SD=13.46), age (z-score: M=-.06, SD=.97), grades (z-score: M=.03, SD=.95), relationships peers (z-score: M=.01, SD = 1.00), relationship teacher (z-score: M=.06, SD = 1.01).

The regression coefficient of the model indicates that older students show more truant behavior than younger students. The effect size shows that students' truant behavior is higher by a factor of 1.28 for students who were older (see Table 6).

Table 6. Students' individual characteristics and school-related factors as predictors of students' truant behavior

Parameter	β	SE	Wald Chi-square	df	Sig.	Exp(β)
(Intercept)	-.06	.18	.10	1	.757	.95
Relationship teacher	-.19	.10	3.18	1	.074	.83
Relationships peers	.03	.10	.10	1	.747	1.03
Grades	.15	.10	2.25	1	.134	1.16
Male	.17	.14	1.41	1	.235	1.18
Female	0[a]					1
Age	.24	.07	12.26	1	.000	1.28
Native	-.28	.16	3.13	1	.077	.76
Binational	.04	.23	.03	1	.853	1.04
Immigrant	0[a]					1
HISEI	.00	.00	.07	1	.795	1.00

Note. [a]Set to 0 because this parameter is redundant.

3.5 Mediation

Because the results underline the importance of the student-teacher relationship in connection with truancy and especially students' school engagement, a simple mediation analysis was conducted to analyze the relationship between the student-teacher relationship, engagement, and truancy. Relationships with peers were entered in the model as a covariate. Using ordinary least squares path analysis, the student-teacher relationship was shown to indirectly influence the occurrence of truancy. As presented in Figure 1 and Table 7, students with a positive student-teacher relationship show more engagement in school (a=.42) and more engaged students indicate less truant behavior (b=-.45). A bias-corrected bootstrap confidence interval or the indirect effect (ab=-.18) based on 10'000 bootstrap samples was entirely under zero (-.28 to -.09). There is no evidence that the student-teacher relationship influence the occurrence of truancy directly (c'=.00), which means that the relationship association between the student-teacher relationship and truancy is fully mediated by students' school engagement (ab=-.18).
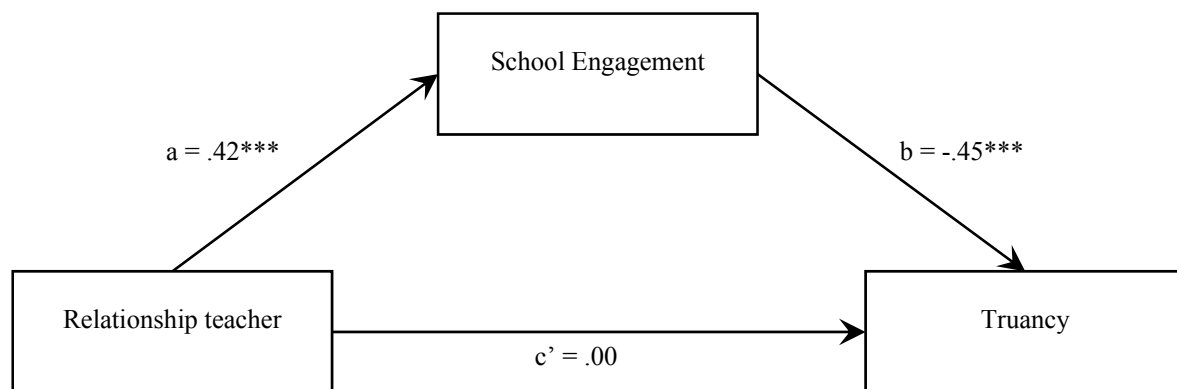

Figure 1. The mediation effect of students' school engagement on the relation between the student-teacher relationship and truancy

Note. ***≤.001.

Table 7. The mediation model

Antecedents		*Engagement*				*Truancy*		
		Coeff.	SE	p		Coeff.	SE	p
Relationship teacher	a	.42	.08	<.001	c'	.00	.10	.991
Engagement		-	-	-	b	-.45	.10	<.001
Constant	i_1	.08	.39	.848	i_2	-.07	.34	.838
		R^2=.223				R^2=.276		
		F(7, 175)=5.90, p≤.001				F(8, 174)=3.65, p≤.001		

Note. Control Variables: Migration background, sex, HISEI, age, grades, relationships peers.

4. Discussion

The aim of this study was to advance knowledge on students' school engagement by investigating more comprehensively the relationship between school engagement and truancy and by focusing on the effect of students' individual characteristics and their relationships with teachers and classmates.

Concerning the question as to *which students are at risk of low school engagement*, our study shows that school-related factors in particular seem to be crucial. This finding stands in contrast with recent research emphasizing individual characteristics like age, sex, and family background as determining (e. g. Blumenfeld et al., 2005; Marks, 2000; Yazzie-Mintz, 2010). In our study none of the students' individual characteristics was associated with an extension of students' school engagement except for binational migration background. Binational students show less engagement than immigrant students but no differences compared to native students. As none of the previous studies on school engagement operationalized this particular category of students' migration background, we cannot directly link this finding to previous research. However, our study supports previous studies' notion that there is a complex relationship between students' origin and their school engagement and other academic outcomes (Shernoff & Schmidt, 2008) which needs to be further analyzed.

On the other hand, our study supports various findings that underline the importance of school-related factors such as academic achievement and relationships at school (e. g. Audas & Willms, 2001; Makarova & Herzog, 2013; Rumberger, 2001, 2004) by indicating a positive association between students' school engagement and grades as well as relationships with peers and the student-teacher relationship. In addition, our findings show that only the student-teacher relationship turned out to be a significant predictor of students' school engagement. This finding is in line with the meta-analysis of Roorda et al. (2017) and previous single studies, which reported a positive association between a positive student-teacher relationship or teacher support and school engagement (e. g. Battistich et al., 1997; Cadima et al., 2015). Therefore, we sum up that, especially binational students and students with a poor student-teacher relationship are at risk of low school engagement.

Concerning the question *which students are at risk of high truancy*, the results show that different factors seem to be important for truancy than those for school engagement. Truant behavior correlates positively with age as a student individual characteristic and negatively with the student-teacher relationship. According to the generalized linear model, only students' increasing age leads to more truancy, which means that older students are more at risk of truancy than younger ones. These results are in line with previous research, which also show a negative relationship between age and school engagement (Blumenfeld et al., 2005; Damian et al. 2017; Makarova & Herzog, 2013).

Some of the results presented above are also important for answering the second question on *how relationships with peers and the teachers impact students' school engagement and their truant behavior*. In our study, the student-teacher relationship is revealed to be the most important factor in connection with school engagement. Even if there is a correlation between school engagement and relationships with peers, this correlation disappeared after further analyses controlling for student-teacher relationship, grades, sex, age, migration background, and family background. These results confirm the findings of other studies reporting that peer relationships and the student-teacher relationship are correlated, but are two unique aspects of students' social integration at school (e.g. De Laet et al., 2015; Furrer & Skinner, 2003; Virtanen et al., 2014). In contrast, the student-teacher relationship and relationships with peers seem to be less important for students' truant behavior and neither of them leads to a lower or higher truancy rate. In accordance to this, our study supports the notion that school engagement and truancy are strongly correlated and that both are highly important with regard to school dropout, but need to be distinguished (e. g. Virtanen et al., 2014). These results are similar to those of Rosenfeld et al. (2000), who showed that the consequences of teacher support appeared to be greatest for affective variables like engagement and less important for school behavior like attendance.

To summarize, it can be stated that on one hand the student-teacher relationship plays a major role in the topic of engagement, truancy, and dropout. On the other, school engagement and truancy share a strong bond, but need to be analyzed as distinctive constructs. Based on this, the question of whether *low school engagement leads to more truancy* was examined. The mediation analysis shows that the student-teacher relationship does not have a direct effect on truancy, but on school engagement. Furthermore, engagement has a strong direct effect on truancy, which means that an increase in school engagement leads to a decrease in the truancy rate and that low school engagement leads to more truancy. Finally, the student-teacher relationship has an indirect effect on truancy, which is fully mediated by school engagement. This signifies that a positive student-teacher relationship only leads to a decrease in the truancy rate in connection with school engagement. These results support the finding of Virtanen et al. (2014), who also detected that school engagement mediated the negative association between teacher support and truancy.

5. Conclusion and Limitations

Our results have important implications for the prevention of school dropout. In particular, they show that teachers can promote their students' school engagement through building and maintaining positive relationships in the classroom. Moreover, by establishing caring and supportive relationships with students and by increasing their school engagement, teachers can prevent students' truant behavior and possibly even their dropping out of school. Taking into account that in our study youth of binational heritage indicated low school engagement and in other studies immigrant youth were associated with a higher risk of dropping out of school, it can be stated that teachers who establish positive relationships with their students can decisively support the school adjustment of students with a migration background. In order to promote educational equality, it is imperative to consider the maintenance of a positive student-teacher relationship as a key competence of pedagogical praxis.

Our study also has some limitations. Firstly, it employed a cross-sectional design and therefore cannot describe the developmental and causal relationships between the constructs included. Hence, a longitudinal study would be needed to analyze the relationship between school engagement, truancy, and school dropout over the long term. Secondly, our analyses are based on the students' self-reported engagement in a standardized questionnaire. Further research should apply a mixed methods design and a combination of assessment instruments, including teacher ratings, interviews, and observation in order to assess social dynamics in classrooms for a more comprehensive picture of school engagement and truancy. Thirdly, our study focused on individual characteristics and social relationships in classrooms. Further research should include additional levels of analysis such as family, friends, school environment, and neighborhood. To achieve this, it would be necessary, to include teachers, parents, and friends, so they would be able to contribute further information about the processes connected to school engagement and truancy. Finally, our results are based on a student sample from one country; more research is needed in other countries in order to gain an international perspective and thus a more comprehensive understanding of school engagement, truancy, and school dropout.

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