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Student engagement, truancy, and cynicism: A longitudinal study from primary school to upper secondary education☆

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ABSTRACT

Truancy in upper secondary education is a widespread problem, which contributes significantly to school dropout risk. However, the underlying mechanisms of truancy have remained unstudied. This longitudinal study of 1853 Finnish students examined how initial levels and changes in student engagement from primary (Grade 6) to lower secondary school (Grades 7 and 9) predicted truancy in upper secondary education, and whether cynicism (losing interest in school) mediated the relationship between engagement and truancy. Growth curve models showed that high engagement levels in primary school and increases in engagement over time predicted less truancy in upper secondary education. Cynicism mediated the effects of student engagement on truancy: high initial levels and increases in student engagement predicted less cynicism, which was related to less truancy. The findings underscored the importance of student engagement (both directly and indirectly through cynicism) in reducing truancy, and such associations can carry over two critical school transitions.

1. Introduction

Truancy is an increasing problem in schools with negative consequences for students' school and post-school outcomes (Lomholt et al., 2020). However, until now, little has been known about the underlying mechanisms of truancy in order to prevent it. To address this gap, this study examines to what extent initial levels and subsequent changes in student engagement (i.e., feelings of belonging with school-relevant others, participating and working hard in school) from Grade 6 in primary school through Grades 7 and 9 in lower secondary school are associated with truancy in the first year of upper secondary education. Moreover, we investigate whether cynicism (i.e., losing interest in school) as a type of disengagement mediated the relationship between engagement and truancy.

1.1. Student engagement

Student engagement is a multidimensional construct often consisting of affective, behavioral, and cognitive dimensions. Affective engagement draws from attachment to school-related others while behavioral engagement is defined in terms of active involvement and effort in academic tasks and participation in school activities. Cognitive engagement refers to self-regulated strategies for learning, such as effort to comprehend learning tasks (Mahatmya, Lohman, Matjasko, & Farb, 2012). Definitions of cognitive engagement overlap with behavioral engagement, as some conceptualizations of cognitive engagement include a behavioral component, namely effort (Fredricks et al., 2016). For conceptual clarity, the present study focuses on affective and behavioral engagement. Consequently, we define students' affective engagement as a sense of belonging with school-related important others (teachers, family, and peers) and behavioral engagement in terms of working hard and coming to classes prepared. Student engagement has recently been conceptualized as not merely the absence of disengagement, but rather a conceptually distinct psychological process from disengagement (e.g., Fredricks et al., 2011; Fredricks, Parr, Amemiya, Wang, & Brauer, 2019; Wang, Chow, Hofkens, & Salmela-Aro, 2015) with unique correlates and contributions to academic outcomes (Authors, 2018; Wang & Degol, 2014). Indicating that student engagement

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and disengagement are related but distinct constructs, Martin (2009) found that no more than 6%–57% of the variance of the adaptive motivation and engagement variables was explained by primary, upper secondary, and university students' disengagement (i.e., feeling like giving up).

According to the seminal participation-identification model (Finn, 1989; Finn & Zimmer, 2012; see also AUTHORS, 2020), students' active participation in school-based activities (i.e., behavioral engagement) improves their academic achievement. This further contributes to identification with school, or affective engagement in terms of experiencing school belonging and valuing school, which, in turn, improves students' participation. Thus, the participation-identification model highlights the dynamic relationship between behavioral and affective engagement with behavioral engagement the driver of effects. This was partially empirically supported by Li and Lerner (2013), who studied the interrelationships of the affective, behavioral, and cognitive aspects of school engagement from Grades 9 to 11. The results showed that participation positively predicted school-related feelings and thoughts from Grade 9 to Grade 10 and, further, from Grade 10 to Grade 11. Affective engagement, however, predicted behavioral engagement only from Grade 9 to Grade 10.

1.1.1. Development of student engagement

Prior studies have shown that adolescents' engagement tends to decrease in secondary education (AUTHORS, 2016; AUTHORS, 2017; Wang et al., 2015; Wang & Eccles, 2012a, 2012b). Empirical evidence about the developmental associations between student engagement and adolescents' long-term outcomes stems primarily from studies focusing on students' academic success and school completion. It has been shown that decreases in school participation (behavioral engagement) are associated with declines in adolescents' grade point averages (Wang, Eccles, 2012a). Moreover, the same study indicated that decreases in school participation and a sense of connectedness to school (affective engagement) were associated with decreases in educational aspirations. Also, Li and Lerner (2011) showed associations between declines in affective and behavioral engagement and declines in students' academic success. Furthermore, Wang and Fredricks (2014) found associations between declines in behavioral and affective engagement and increases in delinquency and substance use from Grade 7 to 11, and low levels of behavioral and affective engagement with increased risks of high school dropout.

Furthermore, a few studies have shown substantial variations in the initial levels and changes in school engagement. Lamote, Speybroeck, Van Den Noortgate, and Van Damme (2013) found two trajectories of affective engagement (i.e., one group starting at a high level of engagement and following a relatively stable pattern and the other group starting at a lower level of engagement and following a decreasing trend) and three trajectories of behavioral engagement (i.e., a high and relatively stable group, a high and decreasing group, and a low and stable group) among students in Grades 7 to 12. Students who remained high in affective and behavioral engagement were less likely to drop out of secondary education than students whose affective and behavioral engagement were characterized by a decreasing trend or whose engagement remained low. Archambault, Janosz, Morizot, and Pagani (2009); (Archambault et al., 2009) found that two-thirds of high school students had stable engagement trajectories with a small decline in behavioral engagement. These students showed the smallest risk of high school dropout. Particularly, students with low engagement or marked decreases in behavioral engagement (attendance at school and school discipline) from the beginning of high school were at risk of later dropout. In the same vein, Janosz, Archambault, Morizot, and Pagani (2008) found that 12- to 16-year-old students who followed nonnormative, unstable engagement trajectories were at risk for subsequent high school dropout.

1.2. Cynicism toward the value of school

Cynicism is an important indicator of disengagement from school, which is defined as questioning the meaning of schoolwork and losing interest in it (Parviainen, Aunola, Torppa, Poikkeus, & Vasalampi, 2020; Salmela-Aro, Kiuru, Leskinen, & Nurmi, 2009; Wang et al., 2015). Cynicism is strongly negatively associated with engagement (Salmela-Aro, Muotka, Alho, Hakkarainen, & Lonka, 2016) and may be a prerequisite for truancy. As suggested by person-environment-fit theory (Eccles, Lord, & Midgley, 1991; Eccles & Roeser, 2011), if the school environment, including school-relevant others such as teachers, family, and peers, fails to meet developing students' basic needs of autonomy, relatedness, and competence, their behavioral and affective engagement may decrease over time. As a result of unfulfilled basic needs and diminishing student engagement over time, students may lose interest in school and adopt cynical, indifferent, and distal attitudes toward schoolwork (see e.g., Salmela-Aro & Tynkkynen, 2012). Consequently, they may gradually withdraw from school (Finn & Zimmer, 2012), which is manifested in truancy. This association was supported by a Malaysian study (Nik et al., 2013) of Grade 10 students, while controlling for several individual, family, and schooling factors. The authors found that cynical students in Grade 10 (i.e., those who did not see the value of schooling) were 2.6 times more likely to be truant than noncynical students. Since truancy correlates with the non-completion of upper secondary school (Keppens & Spruyt, 2018), it is important to identify and explain the mechanisms of truancy.

1.3. Truancy

Truancy, which is defined as unauthorized school absences that students conceal from their parents (Heyne, Gren-Landell, Melvin, & Gentle-Genitty, 2019), is strongly linked to myriad short- and long-term negative consequences. Negative consequences include non-completion of upper secondary school (Keppens & Spruyt, 2018) and later unemployment (Attwood & Croll, 2015). Truancy also correlates with lower academic achievement and lower school engagement (AUTHORS, 2020; Maynard et al., 2017; Maynard, Salas-Wright, Vaughn, & Peters, 2012). Prior research has identified a wide variety of reasons for truancy. Truancy is more common among immigrant youth, compared to native-born youth, youth from low-income families, compared to high-income families (Keppens & Spruyt, 2018; Maynard et al., 2017), and students in upper grades, compared to those in lower grades (Maynard et al., 2012; Maynard et al., 2017). Results concerning gender are mixed, with some studies showing that boys (Keppens & Spruyt, 2018) are more often truant, and other studies showing that girls (AUTHORS, 2014; Maynard et al., 2017) are more often truant.

1.4. The present study

By defining student engagement as a bidimensional construct consisting of affective and behavioral engagement, the present study aims to address the following limitations in previous research on student engagement. First, robust evidence shows that student engagement is positively associated with students' academic success and wellbeing (Fredricks, Blumenfeld, & Paris, 2004; Li & Lerner, 2011; Upadyaya & Salmela-Aro, 2013; Wang, Eccles, 2012b; Wang & Hofkens, 2019). However, the developmental nature of student engagement (Carter, Reschly, Lovelace, Appleton, & Thompson, 2012; Finn, 1989; Finn & Zimmer, 2012; Lamote et al., 2013; Upadyaya & Salmela-Aro, 2013), especially from primary to lower secondary education, and its predictive associations with cynicism and truancy are poorly understood. Second, the amount of student engagement research conducted outside the US is limited (Quin, 2017). Third, although cynicism may be a root cause of truancy (see Keppens & Spruyt, 2020), research combining student engagement, cynicism, and truancy is lacking. Specifically, no prior knowledge exists as to whether cynicism is a mechanism that links

students' initial engagement level and changes in their engagement over time and subsequent truancy from school.

Although, the data and measures overlap to some extent with some prior ANONYMIZED study phase 1 (compulsory education) studies, to our knowledge, this is the first study in the field to focus on the association between changes in students' engagement and truancy. Thus, the posited hypotheses are based on the relationships between student engagement and indicators of negative developmental outcomes. The following research questions and hypotheses were set:

Research question 1. . To what extent does the level of primary school student engagement (Grade 6) predict truancy in upper secondary education? It was hypothesized that higher levels of primary school student engagement would predict lower levels of upper secondary education truancy (Hypothesis 1).

Research question 2. . To what extent does the rate of change from Grade 6 to Grade 9 predict truancy in upper secondary education? We expected that steeper increases in student engagement between Grades 6 and 9 would be related to less truancy in upper secondary education (Hypothesis 2).

Research question 3. . Does cynicism in upper secondary school mediate the associations between student engagement in Grade 6 and its change from Grade 6 to Grade 9 and truancy? We hypothesized that upper secondary education cynicism would mediate the associations between the initial level and change in student engagement and truancy: High levels of Grade 6 student engagement and steeper increases of it from Grade 6 to Grade 9 would predict less cynicism, which, in turn, would be related to less truancy in upper secondary education (Hypothesis 3).

2. Method

2.1. Participants

The participants were followed up in a two-phase ongoing longitudinal ANONYMIZED study. In phase 1, approximately 2000 children from four Finnish municipalities were followed 10 times from kindergarten to the end of lower secondary school (Grade 9). In Grade 6, participants ($N = 1853$; 47.6% females) were from 77 schools and 153 classrooms with a mean age of 12.76 ($SD = 0.34$). In Grade 7, students ($N = 1746$; 47.2% females) were from 34 schools and 150 classrooms with a mean age of 13.75 ($SD = 0.32$). In Grade 9, students ($N = 1691$; 47.5% females) were from 33 schools and 155 classrooms with a mean age of 15.73 ($SD = 0.33$). In phase 2 (ANONYMIZED), participants were followed twice after the transition to upper secondary education. Students ($N = 1649$; 50.3% females) studying in their first year in upper secondary education were from 61 schools with a mean age of 16.68 ($SD = 0.37$). Both phases of the study were approved by the Ethical Committee of the University of ANONYMIZED in 2006 and 2018.

In Finland, compulsory basic education lasts nine years. It is provided in a single structure with two parts: six years of primary and three years of lower secondary school. Lower secondary grades are followed by upper secondary education, which usually takes three years. Upper secondary education is either general upper secondary education (academic track), vocational education and training, or a combination of academic and vocational tracks (dual qualification; Ministry of Education and Culture, 2017). In Finnish upper secondary education, classroom compositions are not necessarily fixed; therefore, the number of classrooms could not be defined. The percentages of students studying in vocational upper secondary education, general upper secondary education (academic track), and a vocational and a general upper secondary school simultaneously (dual qualification) were 29.3%, 62.4%, and 5.0%, respectively. The remaining 3.3% were either not in education or were studying in an alternative school. They were excluded from the analyses. The national statistics (Official Statistics of Finland, 2018) indicate that 41% of students continue their studies in vocational upper secondary and 53% in general upper secondary education. However, in the current sample, students in vocational upper secondary education were underrepresented and students in general upper secondary education were overrepresented.

2.2. Measures

2.2.1. Student engagement

Student engagement was measured via two dimensions: affective and behavioral engagement. Items in both scales were measured in Grades 6, 7, and 9 and rated on a 4-point scale (1 = *strongly disagree*; 4 = *strongly agree*); higher scores indicated higher levels of engagement.

Affective engagement was operationalized as students' overall sense of belonging with teachers, family, and peers, indicated by the mean scores of nine items adapted from Appleton, Christenson, Kim, and Reschly (2006). Example items are: "My teachers are there for me when I need them" (support from teachers; three items), "My family/guardian(s) want me to keep trying when things are tough at school" (support from family; three items), and "Other students here like me the way I am" (support from peers; three items). One mean score for each time point was computed. Cronbach's alphas at Grades 6, 7, and 9 were 0.60, 0.67, and 0.63, respectively.

Behavioral engagement was operationalized as students' participation in school and working hard on schoolwork, and was measured by the mean scores of four items taken from Wellborn and Connell (1987). Example items are: "I work very hard on my schoolwork" and "I often come to class unprepared." Two items were reversed. One mean score for each time point was computed. Cronbach's alphas at Grades 6, 7, and 9 were 0.67, 0.70, and 0.74, respectively.

2.2.2. Cynicism

Cynicism depicted a type of disengagement from school (Parviainen et al., 2020; M. Wang et al., 2015). It was operationalized as a loss of interest and questioning the meaning of schoolwork, and was measured during spring term in the first year of upper secondary education (the first measurement point in upper secondary education). Cynicism was indicated by the mean score of three items adapted from Salmela-Aro et al. (2009). The items were: "I feel that I am losing interest in my schoolwork", "I'm not interested in schoolwork", and "I'm continually wondering whether my schoolwork has any meaning". The 5-point response scale ranged from 1 = *completely disagree* to 5 = *completely agree*. One mean score for each time point was created. Higher scores indicated higher levels of cynicism. Cronbach's alpha was 0.85.

2.2.3. Truancy

Truancy was measured during spring term in the first year of upper secondary education (the first measurement point in upper secondary education). Truancy measured the number of students' unexcused absences from school during the ongoing academic year. The items were: "How many school days have you been absent from school or the workplace during the ongoing academic year due to 1) 'truancy' and 2) 'going to school didn't interest me'?" The response options were 1 = *none*; 2 = *1–2 days*; 3 = *3–5 days*; 4 = *over 5 days*. In total, 23% of the students reported truancy at least 1–2 days, and 12% reported absences due to disinterest in school during the ongoing academic year (response options 2–4). The operationalization of truancy was aligned with the broad definition of truancy, namely skipping school without a valid reason (see Heyne et al., 2019). There is some validity evidence of self-reported truancy. Keppens, Spruyt, and Dockx's (2019) Poisson regression showed that the self-reported and school staff registered absences for students who were truant from school matched more than for students with school refusal. In the current study, truancy was measured in post-compulsory upper secondary education, which may reduce the possible underestimation of the truancy rate due to a need to conceal or a failure to recall their truancy. Truancy was specified as a two-indicator

latent variable in the analysis. The indicators were balanced in magnitude with standardized factor loadings of 0.91 and 0.82. Cronbach's alpha was 0.83.

2.2.4. Covariates

Students' *gender* (0 = girl, 1 = boy), socio-economic status (SES), study track and grade point average (GPA) were included as time-invariant covariates because of their correlations with student engagement (Lamote et al., 2013; Wang, Eccles, 2012b; Wang & Hofkens, 2019) and truancy (AUTHORS, 2014). *SES* reflects parent reports on the highest parental occupation in a family: self-employed persons (entrepreneurs, 8.1%); upper-level employees with administrative, managerial, professional, and related occupations (upper white collar, 45.3%); lower-level employees with administrative and clerical occupations (lower white collar, 38.1%), and manual workers (blue collar, 8.0%). Two categories (students and others, comprising six cases in total) were removed from the analyses. *Study track* was measured based on student reports with three categories: vocational upper secondary education, upper secondary education leading to dual qualification, and general upper secondary education (academic track). Dummy variables were created for SES (reference category is manual workers, three dummies in total) and study track (reference category is general upper secondary education, two dummies in total). Furthermore, students' overall *grade point average* (GPA; range 4–10) in Grade 6 was obtained from school records for all subjects studied in a given academic year.

2.2.5. Analytical strategy

Using Mplus version 8.3 (Muthén & Muthén, 1998-2017), the analyses were conducted in the following order. First, means, standard deviations, correlations between the observed variables, and intraclass correlations (ICC) were examined (Table 1). Second, using three waves of data, a second-order latent growth curve model (SLGCM) with a linear trajectory in growth was estimated (Geiser, Keller, & Lockhart, 2013; Wickrama, Lee, O'Neal, & Lorenz, 2016). Explicitly, the curve-of-factors' model (McArdle, 1988) was used. SLGCM suited the current study because the second-order level and slope factors are measured by first-order time-specific engagement factors in Grades 6, 7, and 9. Thus, they reflect students' error-free true change in engagement over the study period. This helps to avoid specification error, misfit, and biased parameter estimates (Wickrama et al., 2016). Moreover, with multiple indicators, factorial invariance across time points can be tested. In the present study, student engagement was measured by a latent variable comprising affective (belonging) and behavioral (participation and effort) indicators separately at three time points (Grades 6, 7, and 9). Then, two growth factors (i.e., initial level and slope) were utilized to capture the variability between the students' changes of student engagement over the three time points: the level factor captured the variability related to the initial level of the three engagement factors, and the slope factor captured the rate and direction of change over time in engagement factors. Second-order level factor loadings were fixed to one, and zero, one, and three for the slope (see Fig. 1). First-order factor loadings and observed variable intercepts were constrained to equity across time to meet the requirement of strong factorial invariance (Meredith, 1993). Autocorrelations among the observed variable residuals were specified in the model (Wickrama et al., 2016). Intercepts of the first set of observed indicators (behavioral engagement) were fixed to zero to identify the latent means of student engagement. Finally, the effects of initial level of student engagement (research question 1) and slope on truancy (research question 2) were examined using structural equation modeling (SEM) by estimating direct paths from level and slope to the latent variable measuring truancy. To examine whether upper secondary education cynicism mediates the effects from the initial level and change in student engagement to upper secondary truancy (research question 3), an indirect effect was specified in the SEM. Covariates were also added to the models as follows. GPA in Grade 6 was set to explain individual differences in level and slope. Moreover, students' gender and family SES were set to explain variations in time-specific first-order engagement factors (in Grades 6, 7, and 9) and truancy. Paths were also estimated from study track and GPA to truancy. Covariates were standardized and allowed to correlate with each other.

Although classroom-level ICCs were generally small in magnitude (see Table 1), students were clustered within classrooms and schools. The clustered structure of the data was accounted for by adjusting standard errors by COMPLEX type analysis using the Grade 6 classrooms as the clustering variable. The analyses were conducted using maximum likelihood estimation with robust standard errors (MLR), which is robust for non-normal distribution. Little's MCAR test indicated that missingness was not completely random: $\chi^2(729) = 1111.38$, $p < .001$. Grade 6 self-reported control and relevance of schoolwork, prosocial behavior, and self-esteem along with the mean score of students' test results on four reading tests and one spelling and one mathematics test in Grade 7 were controlled for in the analyses as auxiliary variables (Muthén & Muthén, 1998-2017; Widaman, 2006). This corrects for possible selective attrition (e.g., students with poor control and relevance of schoolwork may have lower response rates than students with high control and relevance), thereby improving the plausibility of the missing at random (MAR) assumption, which is essential for the full information maximum likelihood (FIML) estimation (see Enders, 2010). Fit of the estimated models were assessed with the following indices: chi-square (χ^2) test, root mean square error of approximation (RMSEA) with 90% confidence interval, comparative fit index (CFI), Tucker-Lewis index (TLI), and the standardized root mean squared residual (SRMR). Thresholds for acceptable fit were as follows: $p > .05$ for χ^2 test, RMSEA $\leq$0.06, CFI and TLI $\geq$ 0.95, and SRMR $\leq$0.08 (Hu & Bentler, 1999).

Table 1
Descriptive information for the observed study variables.

Variable	n	M	SD	Scale range	Skewness	ICC
Grade 6						
1. Affective engagement	1813	3.17	0.44	1–4	−0.49	0.06
2. Behavioral engagement	1815	3.16	0.46	1–4	−0.53	0.04
Grade 7						
3. Affective engagement	1734	3.19	0.44	1–4	−0.58	0.05
4. Behavioral engagement	1734	3.14	0.50	1–4	−0.44	0.01
Grade 9						
5. Affective engagement	1687	3.13	0.46	1–4	−0.42	0.02
6. Behavioral engagement	1690	3.08	0.55	1–4	−0.56	0.01
Upper secondary education						
7. Cynicism	1353	1.92	0.89	1–5	0.98	–
8. Truancy	1326	1.27	0.62	1–4	2.91	–
Covariates						
9. Study track in upper secondary education[a]	1426	–	–	0–2	–	–
10. Gender[a]	1821	–	–	0–1	–	–
11. SES in Grade 6[a]	1371	–	–	0–3	–	–
12. GPA in Grade 6	1716	8.25	0.69	4–10	−0.43	0.14

Note. ICC = Classroom-level intraclass correlation.
[a] Nominal variable. SES = Family socio-economic status. GPA = Grade point average.

3. Results

3.1. Descriptive statistics

Descriptive statistics of the observed study variables are presented in Table 1, and the correlations between them in Table 2. Affective and behavioral engagement showed moderate to strong (Cohen, 1988) stability across time. Affective and behavioral engagement in primary and lower secondary school showed generally small negative correlations with cynicism toward the value of school and truancy in upper secondary education. The correlation between upper secondary school

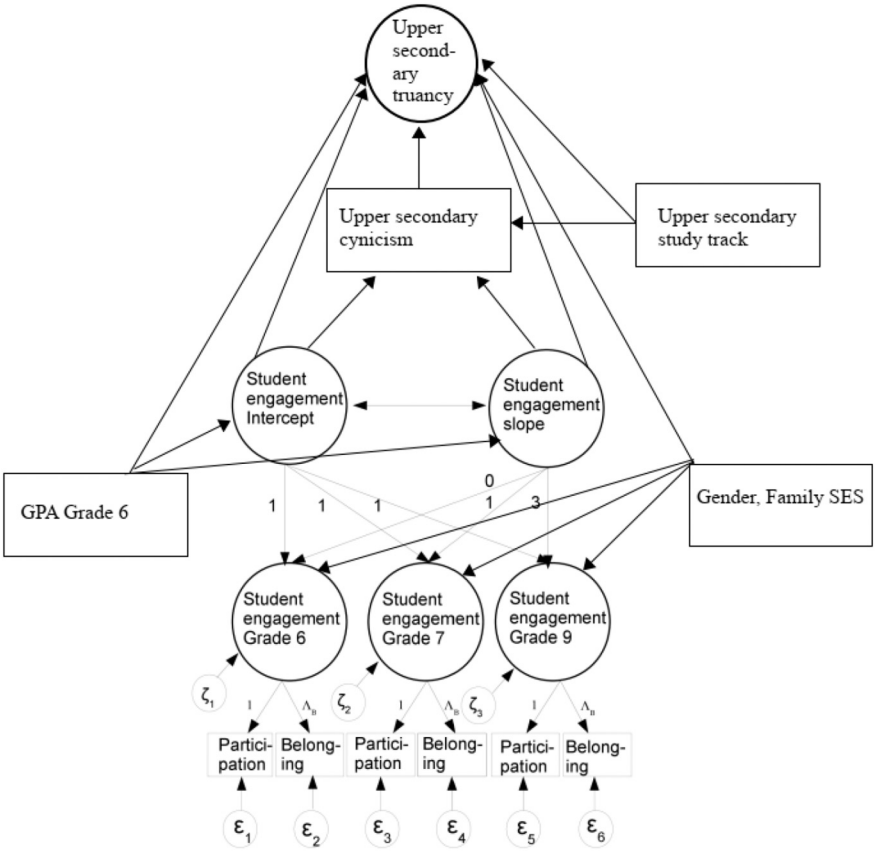


Fig. 1. Conditional linear second-order latent growth curve model of student engagement. Note. Autocorrelated errors (ε) and correlations between covariates are not figured. GPA = Grade point average.

cynicism and truancy was moderate ($r = 0.33$).

3.2. Results of the SEMs

Prior to examining the associations between the intercept (level) and slope (change) of student engagement, cynicism, and truancy, unconditional SLGCM of student engagement was constructed. The model showed good fit to the data: $\chi^2(6) = 17.59$, $p = .007$; RMSEA = 0.03 [0.02, 0.05], CFI = 0.99, TLI = 0.98, and SRMR = 0.02, although the chi-square value was statistically significant. Given the otherwise good fit indices, the most probable reason behind the statistically significant chi-square value is the large sample size ($N = 1853$), as chi-square is overly sensitive to sample size (e.g., Meade, Johnson, & Braddy, 2008). The variances of both intercept (estimate 0.13, $p = .001$) and slope (estimate 0.01, $p = .005$) were statistically significant, showing that there were variations between students in their initial levels and developments of engagement. The means of the intercept and slope were 3.16 ($p < .001$) and -0.03 ($p < .001$), respectively. The correlation between level and slope was −0.32 ($p < .001$). Together, these results indicated that, on average, students' levels of engagement were relatively high in Grade 6. However, this level slightly declined from 3.16 (Grade 6) to 3.13 (Grade 7) and 3.07 (Grade 9). Moreover, students with higher initial levels of engagement tend to decrease faster over time.

Next, upper secondary school cynicism and truancy, as well as the covariates were added to the model (Fig. 1). Due to the high residual correlation between gender and Grade 9 school belonging (estimate = 0.16), this specific residual correlation was also added in the final model. This SEM showed acceptable fit to the data ($\chi^2(59) = 176.27$, $p < .001$; RMSEA = 0.03 [0.03, 0.04], CFI = 0.98, TLI = 0.96, and SRMR = 0.03). The results of this final model are presented in Table 3.

Research questions 1 and 2 concerned the extent to which the initial level and change in student engagement from Grade 6 to Grade 9 predicted upper secondary school truancy. The results (Table 3) indicated that initial levels of student engagement negatively predicted truancy in upper secondary education: the higher the level of student engagement in Grade 6, the lower the level of truancy in upper secondary education (research question 1). In addition, the slope of students' engagement negatively predicted truancy, indicating that the more students' engagement increased, the less students reported truancy from upper secondary school (research question 2).

Research question 3 concerned whether upper secondary education cynicism mediated the associations between the initial level and change in student engagement and truancy. The results showed that higher initial levels of student engagement (estimate = −0.51, $p < .001$) and increases in student engagement (estimate = −0.51, $p < .001$) predicted less cynicism, which, in turn, was associated with less truancy (estimate = 0.18, $p < .001$) in upper secondary education. The indirect effects, indicating partial mediation, were statistically significant with estimates of −0.09 ($p < .001$) and − 0.09 ($p < .01$), respectively. This means that high initial levels and increases in engagement predict less truancy both directly and indirectly through cynicism. Consequently, cynicism is considered a mechanism that partially explains the association between the intercept and slope of student engagement and truancy.

4. Discussion

This study investigated the extent to which the initial level and change in student engagement from primary to lower secondary education are related to truancy in upper secondary education, and whether cynicism mediates these relationships. The results showed, first, that higher initial levels and steeper increases (or less decreases) of student engagement from Grade 6 to Grade 9 predicted less truancy from upper

Table 2
Correlations between the study variables.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
Grade 6																
1. Affective engagement	–															
2. Behavioral engagement	0.43	–														
Grade 7																
3. Affective engagement	0.54	0.31	–													
4.Behavioral engagement	0.33	0.57	0.43	–												
Grade 9																
5. Affective engagement	0.36	0.22	0.45	0.30	–											
6. Behavioral engagement	0.23	0.44	0.29	0.52	0.32											
Upper secondary education																
7. Cynicism	−0.16	−0.15	−0.18	−0.25	−0.26	−0.27	–									
8. Truancy	−.09[a]	−0.21	−0.17	−0.32	−0.22	−0.31	0.33	–								
Covariates																
9. Grade point average	0.24	0.45	0.21	0.42	0.21	0.34	−.02[ns]	−0.24	–							
Study track																
10. Vocational upper secondary education	−.09[a]	−0.23	−0.12	−0.30	−0.17	−0.34	−.08[a]	0.21	−0.61	–						
11. General upper secondary education	0.11	0.23	0.16	0.33	0.17	0.35	.07[a]	−0.22	0.61	−0.89	–					
12. Dual qualification upper secondary education	−.06[b]	−.03[ns]	−0.10	−.08[a]	−.01[ns]	−.05[ns]	.01[ns]	−.04[ns]	−.04	−0.15	−0.32	–				
13. Gender[a]	−0.12	−0.16	−.05[ns]	−0.17	.02[ns]	−0.27	−.07[b]	−.01[ns]	−0.23	0.18	−0.13	−.08[a]	–			
Family socio-economic status																
14. Entrepreneurs	.02[ns]	−.02[ns]	−.02[ns]	−.05[ns]	.00[ns]	−.05[ns]	−.02[ns]	0.06	−0.12	0.12	−0.18	0.15	−.04[ns]	–		
15. Upper white collar	0.03 [ns]	.06[b]	.06[b]	0.11	0.11	0.11	0.02	−0.16	0.29	−0.30	0.31	−.06[b]	.08[a]	−0.27	–	
16. Lower white collar	−.01[ns]	−.01[ns]	−.03[ns]	−.05[ns]	−.08[a]	−.05[ns]	.02[ns]	.08[a]	−0.13	0.16	−0.16	.00[ns]	−.06[b]	−0.23	−0.72	–
17. Workers	−.05[ns]	−.07[a]	−.05[ns]	−.06[b]	−.05[ns]	−.06[b]	−0.04	.08[b]	−0.17	0.15	−0.13	−.03[ns]	.00[ns]	−.09[a]	−0.27	−0.23

Note. [a]Girls = 0. Correlations without superscript are statistically significant at $p < .001$. [a]$p < 0.01$; [b]$p < 0.05$; [ns]$p > 0.05$.

Table 3
Predicting upper secondary education truancy and cynicism with initial level and Changes in student engagement: standardized estimates of the final structural equation model.

Independent variables	Dependent variables						
	Upper secondary education outcome		Second-order growth factors of student engagement		Time-specific first-order factors of student engagement		
	Truancy	Cynicism	Intercept	Slope	Grade 6	Grade 7	Grade 9
Level of student engagement	−0.32***	−0.51***	–	–	–	–	–
Slope of student engagement	−0.30**	−0.51***	–	–	–	–	–
Cynicism in Upper secondary	0.18***	–	–	–	–	–	–
GPA in Grade 6	−0.08ns	–	0.56***	−0.19***	–	–	–
Vocational upper secondary education[a]	0.10*	−0.24***	–	–	–	–	–
Dual qualification[a]	0.03ns	−0.05ns	–	–	–	–	–
Gender[b]	−0.03ns	–	–	–	−0.07*	−0.09**	−0.31***
Entrepreneurs[c]	−0.01ns	–	–	–	0.06ns	0.01ns	0.00ns
Upper white collar[c]	−0.13ns	–	–	–	−0.02ns	0.05ns	0.11ns
Lower white collar[c]	−0.05ns	–	–	–	0.06ns	0.03ns	0.03ns

Note. GPA = Grade point average.
Intercept = initial level. Slope = change.
[a] General upper secondary education (academic track) as the reference category.
[b] Girls as the reference category.
[c] Workers as the reference category.
ns $p > .05$.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

secondary education. Second, cynicism partially mediated the relationship between the initial level and change in student engagement and upper secondary education truancy: higher initial levels and increases in student engagement predicted less cynicism, which was associated with lower levels of truancy.

In accordance with Hypothesis 1, high initial levels of student engagement in primary school predicted less truancy in upper secondary education. Affective and behavioral connections to primary school remained critically important despite the two major changes in school context. High levels of pre-transition student engagement help to soften school transitions that many students consider challenging, as shown in prior studies (e.g., Eccles & Roeser, 2011). It is also possible that behavioral engagement may be particularly more trait-like than state-like, implying that when it becomes a habit for the student, it persists across different educational contexts (see Li & Lerner, 2013; Martin et al., 2015). This highlights the importance of identifying students with low levels of engagement and intervening as early as primary school because low engagement may have far-reaching negative consequences for them. According to the participation-identification model (Finn, 1989; Finn & Zimmer, 2012), student engagement is a developmental process in which participation (behavioral engagement) and identification (affective engagement) build on each other over time. Systematically nurturing each dimension of engagement (Fredricks et al., 2004) is a way to promote students' success in school, as engagement is positively related to learning (Wang & Hofkens, 2019) and negatively related to truancy (AUTHORS, 2020).

Confirming Hypothesis 2, we showed that increases in student engagement from primary to lower secondary school were related to less truancy in upper secondary education. This result aligns with the long-term positive effects of student engagement shown by Janosz et al. (2008), who found that 12- to 16-year-old students who remained moderately or highly engaged were at a lower risk for subsequent high school dropout. In addition, a recent study (Keppens & Spruyt, 2019) showed that occasional truancy tends to escalate into regular truancy, which may result in non-completion of upper secondary school (Keppens & Spruyt, 2018) and, later, unemployment (Attwood & Croll, 2015). Therefore, to keep students on the academic path to studying, the results of this study emphasize the importance of continuously engaging and reengaging students with school (see Martin et al., 2015). High-quality educational contexts offer students behaviorally engaging activities and opportunities to feel accepted and supported (Eccles et al., 1991; Eccles & Roeser, 2011).

This study's results supported Hypothesis 3, indicating that cynicism (i.e., loss of interest and questioning the meaning of schoolwork) is a mechanism that connects students' engagement and subsequent truancy from school. High levels of student engagement in Grade 6 and increases in student engagement from Grade 6 to Grade 9 predicted less cynicism, which, in turn, was associated with less truancy in upper secondary education. This indicates that students who do not feel accepted and supported and who are unable to actively participate in school activities during compulsory education may become disengaged (indifferent and uninterested) and, subsequently, detach themselves from upper secondary education. Disinterest in schooling will, in turn, manifest itself in active opposition toward school in terms of unexcused absenteeism (truancy). Instead, students who remain engaged across various school activities feel more academically competent, are more connected to the institution, and elicit more positive reactions from their teachers and peers (Wang & Fredricks, 2014). Positive responses from teachers, peers, and family are likely to further increase the student's positive attitude toward schoolwork (see Nurmi & Kiuru, 2015). Given that cynicism toward the value of school is actively directed toward the school and, thus, an important predictor of school dropout (Bask & Salmela-Aro, 2013), systematically improving students' affective and behavioral connections with school as early as primary school can prevent adverse outcomes later in the student's schooling career.

4.1. Limitations and strengths

The study has some limitations with respect to data collection and generalizability of the findings. First, our conceptualization of student engagement did not include cognitive engagement. However, as our main aim was to examine the factors that protect students from school disengagement, the study design stemmed from a school dropout prevention paradigm (e.g., Finn, 1989). Accordingly, the main components of student engagement, affective and behavioral, were included in this study. Future studies should include cognitive engagement as an indicator of student engagement to fully capture the multidimensionality of the student engagement construct. Second, most of the measures were based on student-reports, which may be inaccurate, for example, due to social desirability bias (Paulhus, 1991). Also, the association between

student-reported engagement and truancy may be inflated due to shared-method variance (Cole & Maxwell, 2003). Future studies should combine multiple instruments to triangulate students' engagement from school-relevant others, such as teachers and peers (Fredricks et al., 2011), and collect truancy information from school registers, which may be more objective than self-reports (see Keppens et al., 2019). However, particularly affective student engagement and cynicism are subjective processes with highly inferential affective component. Therefore, self-reports are the most feasible method available (Appleton et al., 2006; Finn & Zimmer, 2012). Relatedly, future studies could extend the findings of the current study from proximate institutions (teachers, family, and peers) to the influence of changes by distal institutions, such as ideological stances on education, economic policies, and policy initiatives, to explore the structural drivers of truancy (Farrall, Gray, & Jones, 2020). Third, the initial level of student engagement was measured in Grade 6. Future studies should start the follow-up earlier to capture the development of students' engagement during their entire comprehensive education and the extent to which it predicts truancy in upper secondary education. Nevertheless, the present study was able to cover two important educational transitions. Fourth, this study relied on the average level and change to model the development of student engagement. However, this was the first study to show the association between the development of student engagement and subsequent truancy. Future studies could use group-based trajectory modeling techniques, such as growth mixture modeling (Muthén & Asparouhov, 2009), to extend the present findings by examining various developmental patterns of engagement and how they relate to truancy. Finally, the present study was conducted in one educational context, Finland, where differences between schools in students' academic performance are small (OECD, 2016), and a master's degree is required to teach at all school levels. Therefore, future studies should be conducted in other educational contexts to replicate this study's findings.

Besides these limitations, the study has several strengths. First, it is a longitudinal study that covers two educational transitions. Second, the study is novel in that it tested cynicism as a potential mechanism between the initial level and change in student engagement and subsequent truancy. Third, this study extends research on student engagement in the context of transition to upper secondary education outside the US (Quin, 2017). Finally, it applies a rarely used (Geiser et al., 2013) method, SLGCM, to capture true changes in students' engagement over time.

4.2. Conclusions and implications

This study's findings are needed to inform educational practitioners and researchers about the mechanisms that affect truancy in later school years. In general, our results showed that high initial levels and increases in student engagement were related to lower levels of cynicism, which, in turn, were associated with reduced levels of subsequent truancy from school. The positive effects of student engagement carried over the critical school transitions from primary to lower secondary school and from lower secondary school to upper secondary school. Promoting school completion can be facilitated by systematically strengthening students' affective and behavioral ties with school. The present study indicates that efforts aimed at preventing students from becoming cynical toward the value of education and skipping upper secondary school could include the creation of positive teacher–student and peer relationships as early as primary school. Moreover, school-wide support for students' positive behaviors and parents' active affective involvement in their children's schooling can promote success and prevent students from developing a cynical attitude toward school. More targeted and comprehensive approaches include individualized interventions, such as Check & Connect (Christenson, Stout, & Pohl, 2012), which has been shown to increase school attendance among eighth graders (Powers, Hagans, & Linn, 2017). Aligning with the operationalization of affective engagement in the present study, Check & and Connect is based on long-term relationship building; therefore, a minimum two-year intervention period is needed (see Maynard, Kjellstrand, & Thompson, 2013). This requires persistent efforts from adults whose work involves supporting struggling students.

Declaration of competing interest

None.

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