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Tuomo Virtanen

Student Engagement in Finnish Lower Secondary School

JYVÄSKYLÄN YLIOPISTO

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UNIVERSITY OF JYVÄSKYLÄ

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Markku Leskinen
Department of Education, University of Jyväskylä
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ABSTRACT

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This thesis examined the engagement of students at lower secondary schools in Finland. Two independent cross-sectional data sets collected in 2010 (N = 821) and 2013 (N = 2485) were analyzed using both variable-centered and person-centered methods. The thesis analyzed the associations between teacher–student relationships, family support for students' learning, peer support at school, control and relevance of school work, students' future aspirations and goals, school burnout, behavior at school, and truancy from school. The results offered three main findings. First, the structure of Finnish lower secondary school students' affective and cognitive engagement, as assessed using the Finnish version of the Student Engagement Instrument (SEI-F), approximates the original theoretical structure. Second, three engagement and burnout profiles among the students were identified: high-engagement/low-burnout profile (40.6% of the sample), average-engagement/average-burnout profile (53.9%), and low-engagement/high-burnout profile (5.5%). Third, students' perceptions of whether they receive support from teachers at their school – that is, affective engagement within the teacher–student relationships – were the most consistent correlate of their behavioral and cognitive engagement. Moreover, high support from family, good academic achievement and self-esteem, lack of truancy, female gender, studying at seventh grade as compared to eighth and ninth grades, living with at least one parent, and aiming to continue studying in high school after comprehensive school were other positive and significant correlates of engagement. Overall, the findings of this thesis suggest that the engagement of Finnish lower secondary students can be reliably captured using the SEI-F. The study adds to the understanding of students' achievement and behavior at school and of the factors that associate positively with engagement. The results suggest that variation in students' engagement is associated with at least partly malleable factors, such as academic achievement, which makes fostering of student engagement an important target for school interventions. As a practical implication of the findings, a three-tiered model of promoting student engagement is presented.

Keywords: student engagement, lower secondary school, Student Engagement Instrument

Author's address

Tuomo Erkki Virtanen
Department of Teacher Education
P.O. Box 35
FI-40014 University of Jyväskylä, Finland
tuomo.e.virtanen@jyu.fi

Supervisors

Docent Matti Kuorelahti
Department of Education
University of Jyväskylä, Finland

Professor Marja-Kristiina Lerkkanen
Department of Teacher Education
University of Jyväskylä, Finland

Professor Anna-Maija Poikkeus
Department of Teacher Education
University of Jyväskylä, Finland

Reviewers

Professor Pasi Sahlberg
Graduate School of Education
Harvard University, US

Professor Lars-Erik Malmberg
Department of Education
University of Oxford, UK

Opponent

Professor Pasi Sahlberg
Graduate School of Education
Harvard University, US

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Tuomo Erkki Virtanen
At home in Pesäpolku
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LIST OF PUBLICATIONS

Article 1 Virtanen, T.E., Kiuru, N., Lerkkanen, M-K., Poikkeus, A-M., & Kuorelahti, M. (2016). Assessment of student engagement among junior high school students and associations with self-esteem, burnout and academic achievement. *Journal for Educational Research Online, 8*(2), 136–157.

Article 2 Virtanen, T.E., Lerkkanen, M-K., Poikkeus, A-M., & Kuorelahti, M. (in press). Student Engagement and School Burnout in Finnish Junior High Schools: Latent Profile Analysis. This is an Accepted Manuscript of an article published by Taylor & Francis in Journal of *Scandinavian Journal of Educational Research* on 28/09/2016.

Article 3 Virtanen, T.E., Lerkkanen, M-K., Poikkeus, A-M., & Kuorelahti, M. (2014). Student behavioral engagement as a mediator between teacher, family, and peer support and school truancy. *Learning and Individual Differences, 36*, 201–206.

The research articles (*Studies 1–3*) are reprinted with the kind permission of the publishers. Copies of the articles are appended to this report.

The author of this thesis is the first author of all the three research articles. He reviewed the literature, carried out all the statistical analyses, and prepared the manuscripts for all the individual articles. The author had the main responsibility in collecting the two data sets with the fourth author providing active assistance. In all sub-studies the co-writers had advisory roles in interpreting the results.

FIGURES

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1 INTRODUCTION

Disengagement from school, particularly when it leads to dropping out of school, has negative consequences both for students (for a review see Henry, Knight, & Thornberry, 2012) and society as a whole. Engagement and ways of promoting it are influenced by a student's individual propensities and the quality of his or her interpersonal relationships with significant others at school and home (e.g., You & Sharkey, 2009). School is the primary arena for the manifestation of students' engagement, but factors related to the home environment can facilitate engagement, both directly by providing an adolescent with caring and supportive relationships, and indirectly through increased student wellbeing (for a review, see Bempechat & Shernoff, 2012). As a metaconstruct that aims to capture the many aspects of the student–school–home relationship, student engagement refers to a student's investment in learning, experiences of belonging, and commitment[i] to school norms, goals, and values. By seeking a rich characterization of how students feel (affects), act (behavior), and think (cognition) (Wang & Peck, 2013), engagement addresses central and related facets of human development (Archambault, Janosz, Fallu, & Pagani, 2009).

The literature indicates that student engagement associates positively with students' school and post-school adjustment and general well-being. This includes students' academic outcomes (Wang & Peck 2013), educational resilience (Finn & Rock 1997), school completion (Archambault, Janosz, Morizot, & Pagani, 2009; Lamote, Speybroeck, van Den Noortgate, & van Damme, 2013), and attaining high-status occupations (Abbott-Chapman et al., 2014). Student engagement is also positively associated with socio-emotional indicators including mental and physical health (Antaramian, Huebner, Hills, & Valois, 2010; Archambault, Janosz, Fallu et al., 2009; Conner & Pope, 2013; Pietarinen, Soini, & Pyhältö, 2014), positive emotions (Reschly, Huebner, Appleton, & Antaramian, 2008), peer relations and emotional regulation (Wolters & Taylor 2012), self-concept and self-efficacy (Linnakylä & Malin, 2008), and life satisfaction (Hazel, Vazirabadi, Albanes, & Gallagher, 2014; Lewis, Huebner, Malone, & Valois, 2011). Moreover, student engagement is

related to lack of adjustment problems such as low levels of delinquency involvement, depression, and substance abuse (Conner & Pope, 2013; Li & Lerner, 2011). Student engagement can be seen as both a strategic process that supports learning and an accountability goal or outcome in itself (Parsons & Taylor, 2011). Student engagement can be a protective factor that contributes to students' educational persistence, and it may also moderate the effects of students' risk factors on school failure (Finn & Rock, 1997; Finn & Zimmer, 2012; Furlong et al., 2003). Engagement is assumed to be more malleable than achievement, which means that engagement has the potential to narrow the gap between low- and high-achieving students (Reschly et al., 2008; Woolley & Bowen, 2007) and to lessen socio-economic disparities in education (Abbott-Chapman et al., 2014; Gorard & See, 2011; Parsons & Taylor, 2011).

Taken together, student engagement is not only of educational importance through its links to detrimental outcomes such as school dropout and the related economical costs; it is also a relevant factor that contributes to students' academic and social efficacy across their lifespan (Furlong et al., 2003), and adolescents' overall quality of life (Willms, 2003). Given that student engagement is supposed to be more state-like than trait-like – and therefore partially malleable by manipulating the educational context (Martin, 2012) – it is important to identify low-engaged lower secondary school students and examine the key factors that facilitate adolescents' engagement with school, preventing dropping out of school, and ultimately improving the quality of students' lives.[ii]

Finland has constantly been a high achiever in the international PISA (Programme for International Student Assessment) comparisons, which regularly measure 15-year-old students' scholastic performance in mathematics, science, and reading (OECD, 2013a). However, Finnish PISA results have not been optimal regarding student engagement. First, Finnish students have reported that they cannot work efficiently in literacy lessons because of students' disciplinary problems (OECD, 2011a). Second, Finnish students' sense of school belonging is clearly below the OECD average and decreased notably between 2003 and 2012 (OECD, 2013b). Third, according to the HBSC (Health Behaviour In School-Aged Children) cross-national survey of school students, 13- and 15-year-old Finnish students have indicated poor affective engagement by reporting low levels of liking school and high levels of pressure experiences from schoolwork (Currie et al., 2012; Inchley et al., 2016). Furthermore, 8.5% of the students who completed the nine years of basic education were not accepted into further studies (Official Statistics of Finland, 2014a). Of the Finnish students who did attend post-comprehensive (basic) education leading to a qualification or a degree, 5.6% discontinued their studies and did not resume them in any education that led to a qualification or degree during the 2012/2013 academic year (Official Statistics of Finland, 2014b). Moreover, approximately 5% of Finnish people between 15–29 years of age have completed only nine years of comprehensive education and have failed to continue studies or become employed (Myrskylä, 2012). As noted above,

fostering and maintaining student engagement in the schools has the potential to reduce the short and long-term negative individual and societal consequences of adolescents' adjustment problems.

Although extensive in scope, research on student engagement has several acknowledged shortcomings. First, there is need for student engagement measurement instruments that have a theoretically and psychometrically sound evidence base (Li, 2011). Some theorists have proposed that disengagement is evidenced first at the psychological level and only thereafter in behavior (Archambault, Janosz, Fallu et al., 2009; Eccles, 2004). This theory poses challenges, especially for instruments that aim to capture the psychological subtypes of engagement that are inferential rather than behaviorally manifested; namely, affective and cognitive engagement (for teacher-student differences in perceptions of student cognitive engagement, see Appleton & Lawrenz, 2011). Early identification of the first signs of low engagement among students is necessary for the provision of early support (see Finnish National Board of Education, 2014). The second limitation in the literature is that studies employing person-centered approaches are scarce (Janosz, 2012), although these would be highly relevant for identifying students with different engagement profiles. Third, student engagement has not been studied in relation to school-related burnout in the context of lower secondary schools, despite the fact that lower secondary school years (ages 13 to 16 in Finland) constitute a critical period for early signs of waning engagement and increased risk of dropping out (see Skinner, Furrer, Marchand, & Kindermann, 2008). Fourth, most of the student engagement studies have been conducted in the United States. Gaining culture-specific understanding on the mechanisms that influence student engagement is also important in other cultural contexts. Finally, student engagement has been typically treated as a mediator between individual or contextual factors and student academic outcomes (Connell & Wellborn, 1991; Li, Lerner, & Lerner 2010; Skinner & Pitzer, 2012).[iii] Therefore, it is necessary to have studies that enable modeling of engagement and its correlates from several perspectives, with different indicators of engagement both as a facilitators as well as outcomes (for exceptions, see Finn & Rock, 1997; You & Sharkey, 2009).

The present thesis will address the gaps in the previous student engagement literature through three aims. The first aim is to investigate the structural features of affective and cognitive engagement in data collected using the Finnish version of the Student Engagement Instrument (SEI; Appleton et al., 2006). Through psychometric analysis of lower secondary school students' affective and cognitive engagement in the Finnish school context, the thesis addresses the international demands of developing high-quality student engagement measures (see Fredricks et al., 2011; Li, 2011). The second aim focuses on identifying profiles among lower secondary school students through a person-centered analysis of student engagement and school-related burnout. The third aim is to analyze factors associated with students' behavioral and cognitive engagement. As a whole, the study aims to contribute to the

development of engaging school practices in order to prevent students' disengagement in schools and marginalization from society.

2 THEORETICAL BACKGROUND

2.1 Conceptualization of student engagement

"At its most general level, engagement refers to the quality of a student's connection or involvement with the endeavor of schooling and hence with the people, activities, goals, values, and place that compose it" (Skinner, Kindermann, & Furrer, 2009, 494). Engagement is seen as constituting a reciprocally determined process (Skinner & Belmont, 1993; Wang & Fredricks, 2014) that is sensitive to alterable contextual and individual influences (Finn, 1989). Student engagement evolves as a complex interplay between a student and the school context. Even though some scholars view student disengagement as an independent construct from engagement (Martin, 2007; Skinner et al., 2009), disengagement has typically been treated as low engagement (e.g., Appleton et al., 2006) or the antithesis of engagement (Li, 2011). The latter view implies that disengagement equals low engagement or the absence of engagement, and is therefore integrated into the dimension of engagement, as its other pole. This view is adopted in the present thesis.

The construct of student engagement has typically been introduced as a three-dimensional construct (Fredricks, Blumenfeld, & Paris, 2004). Affective engagement draws from conceptualizations of attachment to school-related others, behavioral engagement from participation in school activities, and cognitive engagement from literature on achievement motivation and educational values. Well-engaged students are positively connected with the academic and social aspects of school life (Conner & Pope, 2013; Kortering & Christenson, 2009). They experience belonging and acceptance from significant others (affective dimension), show on-task behavior (behavioral dimension), are interested in academic content, identify with the school values, and use effective thinking strategies (cognitive dimension). Low-engaged or disengaged students experience a lesser sense of school belonging, do not participate actively in school-related activities, or seek cognitively challenging involvement in learning (Finn & Zimmer, 2012). Some scholars have argued for a fourth

dimension of student engagement, academic engagement, which consists of time spent on task, homework completion, and class grades (Appleton, 2012; Sinclair, Christenson, Lehr, & Anderson, 2003). The multidimensional nature of engagement implies that in order to be *fully* engaged (Conner & Pope, 2013), students' underlying cognitive and psychological needs must be fulfilled (Connell & Wellborn, 1991). In other words, engagement goes beyond behavior and mere participation in school activities (Li, 2011).

Affective engagement. Affective engagement is based on students' attachment to school and members of the school community, which makes it specific to a particular school context (Fredricks et al., 2004). It intersects with constructs such as experiences of warmth (Skinner et al., 2008), bonding, connectedness, attachment, involvement (Jimerson, Campos, & Greif, 2003; Libbey, 2004), sense of school belonging, feelings of being accepted by teachers and classmates (Appleton et al., 2006; Finn, 1989; Finn, 1993; Fredricks et al., 2004), and school membership (Wehlage, 1989). In some definitions, it also taps students' experiences of enjoyment and interest in school learning (Archambault, Janosz, Morizot et al., 2009; Janosz, Archambault, Morizot, & Pagani, 2008).

Affective engagement is seen to relate indirectly to students' academic performance via increased behavioral and cognitive engagement, educational persistence, and resilience (Finn & Zimmer, 2012; Pietarinen et al., 2014; Roorda, Koomen, Spilt, & Oort, 2011; Voelkl, 2012). Changes in students' behavior and cognitions are believed to be preceded by changes in affective engagement (Li et al., 2010; Walker & Greene, 2009). Therefore, affective engagement may set the stage for behavioral and cognitive engagement (Wang & Degol, 2014). Some students can still succeed academically despite waning feelings about school, which suggests that youth may not always need to be affectively engaged in order to attain positive youth outcomes (Wang, Chow, Hofkens, & Salmela-Aro, 2015; Wang & Peck, 2013). This may imply that low affective engagement can be compensated for by other subtypes of engagement, at least with regard to academic performance.

Behavioral engagement. The behavioral subtype of engagement pertains to students' participation in school activities (Willms, 2003), which can be academic or non-academic. It is described in terms of observable indicators (Jimerson et al., 2003), such as sustained behavioral involvement in learning activities (Skinner & Belmont, 1993), attentiveness, and school compliance (Wang & Eccles, 2012a), effort, and persistence with schoolwork (Skinner, Wellborn & Connell, 1990), school attendance (Archambault, Janosz, Morizot et al., 2009), having necessary equipment for active classroom participation (You & Sharkey, 2009), and participation in extra-curricular activities (Fullarton, 2002). Hospel, Galand, and Janosz (2016) argued that behavioral engagement should be seen as a multidimensional construct consisting of five dimensions: participation, following instructions, withdrawal, disruptive behavior, and absenteeism.

The positive impact of behavioral engagement on multiple educational outcomes has been well documented (for a review, see Finn & Zimmer, 2012). O'Farrell, Morrison, and Furlong (2006), for example, argued that persistent behavioral engagement is an important correlate of long-term academic attainment. Fredricks et al. (2004) cautioned that researchers must carefully differentiate behavioral engagement from cognitive engagement with respect to effort. When it comes to behavioral engagement in learning, effort is understood as spending time and working on a topic or a task. Cognitive engagement, on the other hand, can be understood as the reasons for using cognitive strategies or investing the effort in the first place. Therefore, it is possible that a learner is behaviorally "on-task", but simultaneously shows low cognitive engagement by using superficial learning strategies.

Cognitive engagement. The research on cognitive engagement has been guided by three partly overlapping traditions. The first stems from the literature that stresses investment in learning (Fredricks et al., 2004), willingness to learn (Archambault, Janosz, Morizot et al., 2009), setting personal educational goals, and valuing education (Appleton et al., 2006; Finn, 1989). The second tradition involves self-regulation, or being strategic (Christenson & Anderson, 2002; Wolters & Taylor, 2012), while the third tradition focuses on mastery of academic material, as well as the desire for challenge (Corso, Bundick, Quaglia, & Haywood, 2013; Connell & Wellborn, 1991; Klem & Connell, 2004).

Cognitive engagement in terms of a self-regulated or strategic approach to learning (Wang & Peck, 2013) and valuing education (Appleton et al., 2006; Conner & Pope, 2013) has been shown to be positively associated with students' academic performance. Some conceptualizations have viewed student-perceived relevance or utility of school as elements of affective engagement (Finn, 2006), whereas others have associated perceived value, importance, and level of enjoyment with school with cognitive engagement (Wang et al., 2015). This conceptual inconsistency may stem from the process of student engagement becoming increasingly differentiated as more dimensions are incorporated into the construct. Voelkl (2012) saw cognitive engagement as a contemporary extension of the bipartite affective and behavioral student engagement models. Including cognitive engagement into the construct of student engagement has resulted in some overlap between the dimensions. Many aspects of cognitive engagement intersect with both affective and behavioral engagement (Sinatra, Heddy, & Lombardi, 2015), which leads to challenges in measuring and comparing research results.

Recently, some empirical studies have suggested that student engagement is best represented as a mutually shaping process, with each dimension influencing the others cyclically (Wang & Degol, 2014). For example, high affective engagement is likely to foster cognitive and behavioral engagement within the classroom, which may improve performance and elicit positive feedback from classmates and teachers, further increasing enjoyment of learning. Li and Lerner (2013) showed that behavioral and affective engagements were bidirectionally related to each other (that is, each is both a

basis and an outcome of the other). Wang and Fredricks (2014) found that behavioral engagement, affective engagement, and problem behavior influence each other in predicting the likelihood of dropping out of school.

2.2 Differentiation between student engagement and motivation

The differentiation between student engagement and motivation has been a subject of debate (Appleton, Christenson, & Furlong, 2008) as the conceptualizations of motivation and student engagement partially overlap in some accounts (Appleton et al., 2006; Reschly, 2010). Motivation and engagement have even been used as interchangeable concepts (National Research Council, 2004), against which Li (2011), among others, has cautioned. Prior empirical research has shown that, even though engagement and motivation overlap to some extent, they are separate constructs. The original SEI validation study (Appleton et al., 2006) indicated correlations smaller than .30 between measures of motivation (extrinsic motivation reversed) and engagement (affective and cognitive engagements). Wang and Eccles (2013) found small to moderate (Cohen, 1988) correlations (.24–.48) between student motivational beliefs in school (academic self-concept and subjective task value regarding school learning) and students' affective, behavioral, and cognitive engagement. From the socio-cognitive perspective, a chain of mechanism in educational context has been suggested where the context affects motivation, which drives engagement and further learning (for a critique of this chain, see Lawson & Lawson, 2013). According to this view, student engagement is a mechanism through which motivational processes lead to academic achievement (Finn & Zimmer, 2012).

Two remarks are worth paying attention to. First, differentiation between engagement and motivation highlights the division between cause and effect. Motivation is supposed to cause engagement (Connell & Wellborn, 1991), not the other way around. Second, motivation is seen as a necessary but not sufficient prerequisite for learning and achievement (Blumenfeld, Kempler, & Krajcik, 2006). A student can be motivated to learn, but successful learning will not occur without being actively engaged in school life and learning tasks. Some scholars propose that motivation represents the reasons for or sources of engagement (or disengagement), whereas engagement is the "energy in action" (Russell, Ainley, & Frydenberg, 2005). Engagement is also seen as the outward manifestation of motivation (Skinner, Kindermann, Connell, & Wellborn, 2009; Skinner, Kindermann, & Furrer, 2009), i.e., the behavioral dimension of motivation (Martin et al., 2015), while motivation sets the stage for engagement (Blumenfeld et al., 2006). According to Appleton, Christenson and Furlong (2008), motivation is a response to the question "Why am I doing this?" while engagement depicts students' active involvement in school activities or a given behavior. However, other arguments view the relationship between motivation and engagement as a bi-directional loop, rather than unidirectional (see Martin,

2012). A student's initial level of motivation may be low when starting a classroom activity, but engagement with it may lead to a positive circle in which motivation and engagement reciprocally strengthen each other.

Reeve (2012) argued that researchers who have motivation as their starting point are interested in engagement as the outcome of motivational processes. However, those researchers who study engagement regard motivation as an unobservable source of engagement. This division is problematic given the multifaceted nature of student engagement. Affective and cognitive subtypes of engagement are largely internal and therefore not easily regarded as action (Reschly & Christenson, 2012). Moreover, this raises the question of who should be the informant of students' engagement. If motivation is a latent construct and engagement is its public manifestation, should the informant of student engagement then be the teacher, and should self-reports be reserved for motivation? Because student engagement is originally a practical construct with roots in school dropout prevention (Finn, 1989; Parsons & Taylor, 2011), its definitions are general (Li, 2011) and less elaborated than definitions used in the motivational literature. Unlike some definitions of motivation, the definitions and measures of engagement are not typically differentiated by a task-specific domain or activity (Eccles & Wang, 2012; Fredricks et al., 2004; for an exception, see Kong, Wong, & Lam, 2003; Sinatra et al., 2015). Thus, student engagement is regarded more as a stable disposition towards school than a situation-specific experience or attitude.

2.3 Theoretical perspectives explaining student engagement

The roots of research on student engagement lie in studies that focus on preventing student dropout and those that promote academic motivation. In order to provide a comprehensive account of the mechanisms behind student engagement, three perspectives (cf., Christenson, Reschly & Wylie, 2012) that are both complementary to each other and relevant for understanding the process of engagement are introduced next. Each of these views includes both intrapersonal and contextual features highlighting the interplay of person and context in understanding student engagement. The three perspectives are Hirschi's (1969) social control theory, Finn's participation–identification model (Finn, 1989; Finn & Zimmer, 2012), and the person–environment fit perspective proposed by Eccles and colleagues (Eccles, Lord, & Midgley, 1991; Eccles & Roeser 2011). I argue that these three theoretical perspectives comprehensively outline the core of student engagement, namely, affective (i.e., social connectedness), behavioral (i.e., participation), and cognitive (i.e., relevance and valuing) dimensions. Although these theories point out slightly different aspects of engagement, in essence, the subsequent theorizations of student engagement can be reduced back to the foundation level ideas presented in the social control theory, participation-identification model, and the person-environment fit perspective.

The social control theory and the participation–identification model originate from the dropout prevention literature, while the person–environment fit perspective draws from motivational theories.[iv] The main instruments applied in the present thesis are informed by these theoretical perspectives. Student Engagement instrument (SEI) is grounded on the social control theory and the participation–identification perspective. The SEI goes beyond observable indicators of engagement by placing strong emphasis on a student's connectedness with others and personal values. On the other hand, the Rochester Assessment Package for Schools (RAPS), a behavioral engagement scale, draws from the person–environment fit perspective in that participation is supposed to result from the fulfillment of basic needs for autonomy, relatedness, and competence.

Social control theory. The construct of student engagement can be traced back to Hirschi's (1969) social control theory, which strongly emphasizes individual feelings of attachment and belonging (Archambault, Janosz, Fallu et al., 2009). The social control theory posits that humans, by their nature, seek easy and immediate gratification, and must therefore be controlled (Kuhn, 2009). The control mechanism can be located in social bonds (the social control theory is also known as the social bond theory). The closer an individual is to important prosocial others, the more he or she will identify with them and the lower the likelihood of undesirable behavior. Hirschi (1969) identified four interrelated social bonds: attachment, commitment, involvement, and belief. In a school context, the four social bonds can be characterized as follows. A student does not want to disappoint those he/she loves (attachment). By misbehaving, a student jeopardizes the valued social relationship and risks losing the investments in conventional behavior – such as achieving high educational goals (commitment). Involvement in conventional activities such as engaging in schoolwork reduces the opportunities to engage in antisocial activities (involvement). A student's values also play a role, in that believing in the moral validity of the law and rules will constrain him or her from behaving antisocially; for instance, playing truant from school (belief) (see Pratt, Gau, & Franklin, 2011).

A lack of school attachment, commitment, involvement, and belief has been found to be linked to delinquency and school misbehavior (Booth, Farrell, & Varano, 2008; Payne, 2008). According to the social control theory, variation in the strength of social control explains variation in the extent to which people engage in antisocial activities (Lilly, Cullen, & Ball, 2011). Social bonds buffer against risks in a student's life (Hirschi, 1969) and serve as effective control mechanisms against disengagement from school. Importantly, these protective mechanisms do not have to be directly present in a student's life, but they can indirectly control a student's behavior. If nourished on a regular basis (Lilly et al., 2011), they are psychologically present (Pratt et al., 2011) and control an individual's behavior informally (Kuhn, 2009).

Participation-identification model. Early student engagement studies typically applied a bipartite conceptualization of engagement comprising

affective and behavioral dimensions (Goodenow & Grady, 1993; Goodenow, 1993; Voelkl, 1997). Drawing from the social control theory, the participation-identification model (Finn, 1989; Finn & Zimmer, 2012) suggested that a third dimension – cognitive engagement – needed to be included into the construct of student engagement. The participation–identification model views student engagement as a tripartite construct in which participation captures the external dimension of behavioral engagement and identification captures the internal dimensions of school belonging (affective engagement) and valuing (cognitive engagement). Participation can be manifested at hierarchically varying levels, ranging from basic learning behaviors (such as being prepared in classes) to participation in school governance (Appleton et al., 2008; Finn, 1989). The ultimate connection to school in terms of experiencing school belonging and valuing school-related challenges and goals (identification) begins with student behavior; that is, participation. Over the course of time, participation leads to academic success and internalized feelings of identification with school. Identification, in turn, leads back to continued participation, academic success, and strengthened identification (Finn & Zimmer, 2012). In the case of a negative cycle characterized by a pattern of low student participation, academic performance is poor and internalized feelings of positive school identification are unlikely. This may result in alienation, withdrawal, active disengagement, and, ultimately, to school dropout (Finn & Zimmer, 2012).

Person-environment fit perspective. In contrast to the social control theory and participation–identification model, neither of which explicitly include motivation in explaining school misbehavior or dropout from school, the person–environment fit perspective originates from motivational models. The person-environment fit perspective (Eccles et al., 1991; Eccles & Roeser, 2011, rooted in Bronfenbrenner's, 1979, ecological model) draws from the self-determination theory (Deci & Ryan, 2000) in stating that students' inherent needs for autonomy, relatedness, and competence are determinants of their motivation, experiences, and behavior. Optimal school contexts provide students with opportunities to fulfill their fundamental psychological needs through instruction that is defined by warmth (involvement), structure, and autonomy support. As a result, students' motivation is nourished, thereby facilitating their engagement and schooling outcomes.

Person-environment fit depicts the goodness-of-fit between school characteristics and students' fundamental needs (Li, 2011). Students perform best and are likely to be most engaged when there is synchrony across personal characteristics, values, needs, and practices espoused by the school. Having their need for autonomy, relatedness, and competence met at school supports students' participation in school-related activities. It also strengthens their academic performance, their beliefs concerning the meaningfulness of schoolwork, and experiences of school belonging, and mental health (Skinner et al., 2009; Connell & Wellborn, 1991; Deci & Ryan, 2000; Eccles & Roeser, 2011). Conversely, individuals are unlikely to be engaged if they are not provided with emotional and instructional support, a mastery-oriented environment, and

opportunities for autonomy and initiatives (Eccles & Roeser, 2009). Poor fit may result in unfavorable consequences, such as negative behaviors and attitudes, and low valuing of school (Eccles & Midgley, 1989).

Table 1 sets out the core features of the three complementary theoretical perspectives (cf. Christenson, Reschly & Wylie, 2012) described above and aligns them with the conceptualizations of the multidimensional student engagement (see chapter 2.1). Table 1 also highlights the point that students' individual characteristics are interlinked with educational environments that contribute to their psychosocial and academic adjustment. Despite differences in terminology, each of the three perspectives draws attention to intrapersonal affective engagement as an individual's social connectedness to others. When a student identifies with prosocial school-related others, he or she is likely to make an effort to fulfill their own expectations and those of others by engaging in school work and community. Moreover, each of the three theoretical perspectives claims that affective engagement is not sufficient in itself; student's active participation in school activities is also needed for optimal engagement. The participation–identification model posits that active participation is the necessary starting point that promotes positive schooling outcomes and identification with school in a cyclical manner. The theories also recognize the cognitive dimension of valuing school and education. Perceptions of fair school rules and school values that match the student's personal values are antecedents for willingness to engage in school. Finally, the three theories adopt an ecological standpoint, in that the educationally relevant contexts (family members, teachers, and peers) are regarded as influential with regard to student engagement. This is consistent with the view that students' engagement with school ensues from complex and dynamic interactions between individuals' characteristics and contextual influences (e.g., Roorda et al., 2011; You & Sharkey, 2009). An ecological standpoint is also the underlying rationale for the main instrument employed in the present thesis – the Student Engagement Instrument (Appleton et al., 2006) – which reflects the person-in-context orientation in measuring engagement (see Sinatra et al., 2015).

TABLE 1 An outline of interpersonal and contextual components of three theoretical perspectives providing a framework for understanding student engagement

	INTRAPERSONAL COMPONENTS			CONTEXTUAL COMPONENT
	Affective engagement	Behavioral engagement	Cognitive engagement	Contexts
Social control theory (Hirschi, 1969)	**Social bonds with prosocial others protect against disengagement**	Involvement in prosocial activities prevents school misbehavior	Belief in the moral validity of school rules protects against disengagement	Highlights the role of proximal contexts: family members, teachers, and peers
Participation–identification model (Finn, 1989; Finn & Zimmer, 2012)	Sense of belonging reinforces participation	**Consistent participation reinforces identification with school and schooling outcomes**	Valuing school-related challenges and goals reinforces participation and schooling outcomes	In school context, emphasizes quality of instruction
Person–environment fit perspective (Eccles et al., 1991; Eccles & Roeser, 2011)	Fulfilled basic need of relatedness with others supports engagement with school	Participation results from fulfilled basic needs for autonomy, relatedness, and competence	When school values and personal values match, engagement with school is supported	**Highlights the role of proximal contexts: family members, teachers, and peers**

Note. The primary focus of each perspective is marked with bold.

There are also differences between the three perspectives. The first obvious difference relates to scientific traditions and, therefore, main emphases. The social control theory and the participation–identification perspective both originate in student disengagement research, whereas the person–environment fit model is rooted in the motivation–engagement research tradition. Differences in research traditions have led to the variation definitions and measurements of student engagement (O'Farrell et al., 2006). The second difference is that the social control theory focuses on why the majority of students are *not* disengaged. Because it stems from the school dropout prevention framework, the participation–identification model centers on school completion and school dropout processes. The person–environment fit perspective regards student engagement as an outward manifestation of motivation. Third, set against the levels of Bronfenbrenner's (1979) ecological

model, the person–environment fit and participation–identification perspectives can be seen as representing microsystem theories, whereas the social control theory can be regarded as a macrosystem theory. The person–environment fit and participation–identification perspectives pay attention to the relationship between a student and his/her classroom and school contexts, whereas social control theory ultimately analyzes the relationship between the society and an individual. The fourth difference is that the participation–identification model is the only model that explicitly focuses on a developmental process that may begin in the early grades and may eventually lead to a student dropping out of school. This model echoes recent studies showing that various student engagement dimensions mutually influence each other over time (Li & Lerner, 2013; Wang & Fredricks, 2014). Finally, the social control theory places a heavy emphasis on social relationships, while the participation–identification perspective stresses participation as a primary starting point for successful schooling. The person–environment fit is consistent in terms of highlighting the match between an individual and the environment that surrounds the individual.

2.4 Measuring student engagement

Independent of the data collection method, it is important to distinguish between indicators and facilitators of engagement. It is necessary to distinguish between the elements inside and outside of engagement in order to segregate the causes (for example, contextual support) from the effects (such as participation in school-related activities) of engagement. Indicators are markers or descriptors of the engagement construct itself. For instance, they represent the degree or level of connection of an individual with school and with learning. Facilitators are explanatory contextual influences outside the engagement construct that potentially influence engagement (Sinclair et al., 2003; Skinner & Pitzer, 2012).

Two perspectives are worth noting. First, whereas indicators are useful for identifying low-engaged students, facilitators can be used in planning interventions (Reschly, 2010). Second, the different lines of engagement research (preventing students dropping out of school and enhancing students' academic motivation) seem to have a different stance on the division between indicators and facilitators. The dropout prevention tradition does not necessarily explicitly separate student-reported indicators from facilitators; instead, it blends them into the concept of student engagement (e.g., Appleton et al., 2006; Reschly & Christenson, 2012). I would argue that, to ensure optimal conceptual clarity, factors referring to contextual support should be conceptually separate from the concept of student engagement. Thus, the core of affective dimension of student engagement may be seen to center on constructs including students' sense of school belonging (Wang & Eccles, 2012b) or student-perceived enjoyment and interest in school learning (Archambault,

Janosz, Morizot et al., 2009; Janosz, Archambault, Morizot, & Pagani, 2008) rather than their perception of support received from external sources facilitating these experiences. The academic motivation tradition (e.g., Connell & Wellborn, 1991; Eccles & Wang, 2012; Kortering & Christenson, 2009; Lam et al., 2012; Skinner et al., 2008) carefully separates student-reported indicators from facilitators in order to be able to investigate whether, for example, social context influences student engagement (Skinner & Pitzer, 2012). This helps to reveal the mechanisms that lead to student engagement. The present thesis draws mostly from the academic motivation tradition by including support from teachers (in terms of teacher–student relationships), parents, and peers as facilitators of engagement in the analyses. This operationalization is also in line with the three theoretical perspectives introduced in chapter 2.3, which imply that affective engagement is a precursor for behavioral and cognitive engagement.

Five different methods for assessing student engagement can be distinguished: self-reports, experience sampling techniques, teacher ratings, interviews, and observations (Fredricks & McColskey, 2012). Each method has advantages and disadvantages. The self-reporting methodology (used in the present study) places high value on students' own perspective in understanding their engagement in school (Reschly & Christenson, 2012). Self-reports are the most commonly used measures because they are low-cost, practical, and easy to administer, which enables administrations to acquire large samples of students. Self-reports may be particularly applicable for older students, who generally have better literacy skills than younger students (Fredricks & McColskey, 2012). Self-reports are also central in assessing the highly inferential aspects of both affective and cognitive engagement (Appleton et al., 2006). The validity of self-reports can be threatened by an individual's tendency to self-enhance (self-deceptive enhancement) and to seek to make a favorable impression on others (impression management) (Musch, Ostapczuk, & Klaiber, 2012). Self-reports may also be biased if the respondents answer the questionnaire retroactively (Sinatra et al., 2015) or if low-engaged students end up being represented to a lesser degree than highly engaged students due to different returning rates of parental consent (Reschly et al., 2008).

2.5 Factors correlating with student engagement

The literature consistently reports status-related background factors that correlate with student engagement. Girls (e.g., Haapasalo, Välimaa, & Kannas, 2010), students from high-socio-economic-status families (e.g., Linnakylä & Malin, 2008), young students (e.g., Wang & Eccles, 2012a), non-foreign-born students, students from intact families (Willms, 2003), and students without special education status (Reschly, 2006) tend to show higher levels of engagement in all three dimensions when compared with their counterparts. It is noteworthy that status factors are mostly non-alterable. For example, family

economic status cannot be easily influenced in order to promote student engagement. The alterable status factors, such as students' special education status in the present thesis, can be influenced within the educational system. Attending special education or the intensity of such education are based on decisions made between the student, family, and school personnel.

Evidence indicates that supportive relationships in the students' proximal contexts facilitate their engagement with school (Woolley & Bowen, 2007). Emotional support provided by teachers (Voelkl, 2012; Wang & Eccles, 2012a, Wang & Eccles, 2013; You & Sharkey, 2009), parents (Estell & Perdue 2013; Wang & Eccles 2012b), and peers (Estell & Perdue 2013; Li, Doyle Lynch, Kalvin, Liu, & Lerner, 2011; Wang & Eccles, 2013) fosters student engagement. However, in contrast to Hirschi's (1969) conclusion that any type of social attachment is beneficial, some studies have found that social support by unconventional peers contributes negatively to students' behavioral engagement (Wang & Eccles, 2012a). Therefore, it appears that social control theory fails to address the role of deviant peer influences (Erickson, Crosnoe, & Dornbusch, 2000). Taken together, this evidence holds promise for understanding the practical mechanisms of student engagement. It suggests that whereas status-related student background factors are mostly unchangeable, or at least relatively resistant to changes, contextual factors (school-related processes) can be partially manipulated (Martin, 2012) to enhance student engagement. Two studies, conducted in the Finnish school context, have shown relatively stable estimates of student engagement. Salmela-Aro and Upadyaya (2014) demonstrated high stability (stability coefficient: .58) in students' schoolwork engagement (i.e., energy, dedication, and absorption) between the first (at age 16) and second (at age 17) years of students' post-comprehensive education. Wang and colleagues (2015) found correlation coefficients of the same magnitude (.46) in the school transition phase from Grade 9 (last year of lower secondary school) to the first year of upper secondary school in students' experiences of affective engagement (i.e., students' perceived value, importance, and level of enjoyment of school). The correlation coefficient between student engagement during the first and second years of upper secondary school was .63. In the US context, correlation coefficients between Grades 7 and 9 and Grades 9 and 11 for students' affective (school identification), behavioral (school participation), and cognitive engagement (self-regulated learning) have been reported to be somewhat lower, with estimates ranging from .27 to .31 (Wang & Fredricks, 2014). Taken together, these findings suggest that student engagement shows stability. At the same time, to some extent, it is malleable to efforts to enhance students' educational persistence and academic performance.

The developmental–ecological model (You & Sharkey, 2009) posits that students' functioning is best understood as interplay between contextual factors and students' personal propensities. This framework points out that factors such as students' self-esteem are associated with their engagement (see also Finn & Rock, 1997; Ma, 2003). Other factors depicting student characteristics

and aspirations with empirical evidence of correlations with student engagement include academic performance (Haapasalo et al., 2010; Stewart, 2008; Wang & Eccles, 2012b), lack of school truancy (Maynard, Salas-Wright, Vaughn, & Peters, 2012), and educational aspirations (Haapasalo et al., 2010; Stewart, 2008; Wang & Peck, 2013). Notably, educational aspirations and self-esteem lie on the hard-to-change continuum of alterability, and are therefore alterable only to some extent.

With its emphasis on contextual features, the student engagement literature has understated students' well-being (Fredricks et al., 2004). School burnout is a concept that taps students' school-related personal well-being (or the lack thereof) and has often been linked to engagement. Some researchers have viewed school burnout as a form of student disaffection (Skinner & Pitzer, 2012), implying the absence of student affective engagement (see Wang et al., 2015), or emotional disengagement in school (Salmela-Aro, Moeller, Schneider, Spicer, & Lavonen, 2016). School burnout has been defined as a three-dimensional construct that contains the following dimensions: *exhaustion* due to study demands, a *cynical attitude* towards school, and feelings of *inadequacy* as a student (Salmela-Aro, Kiuru, Leskinen, & Nurmi, 2009). School burnout is negatively associated with energy, dedication, and absorption in learning at school (Salmela-Aro et al., 2009; Salmela-Aro & Upadyaya, 2014) and is associated with students dropping out of school (Bask & Salmela-Aro, 2013; Tuominen-Soini & Salmela-Aro, 2014).

2.6 The aims of the thesis

The thesis focuses on students' overall engagement with school rather than engagement at the classroom level, specific academic learning activities or subject domains (for engagement in specific subject domains, see Sinatra et al., 2015).

The aims of the thesis were:

1) To investigate the structure of affective and cognitive engagement among Finnish lower secondary school students;

2) To identify distinct student profiles based on behavioral engagement, cognitive engagement, and school-related burnout;

3) To analyze student background factors, contextual support, and student characteristics and aspirations factors correlating with student engagement.

The three overarching aims of the thesis were addressed in three studies. *Study 1* investigated the structure of affective and cognitive engagement using the

Finnish version of the Student Engagement Instrument (Appleton et al., 2006) in two questionnaire data sets of lower secondary school students (see Aim 1 of the thesis). The associations between affective and cognitive engagement and students' behavioral engagement, self-esteem, burnout, and academic achievement were also examined (see Aim 3 of the thesis). The guiding framework for this study aligns with the conceptualization of student engagement as a multidimensional construct (e.g., Fredricks et al., 2004; Jimerson et al., 2003).

Study 2 identified profiles among Finnish lower secondary students with respect to student behavioral engagement, cognitive engagement, and school-related burnout (see Aim 2 of the thesis). This study also analyzed factors correlating with student membership in the aforementioned profiles (Aim 3). The theoretical framework of this study was drawn from the person-environment fit perspective (Eccles et al., 1991; Eccles & Roeser, 2011).

Study 3 investigated the associations among teacher–student relationships, family support for learning, and peer support at school, student behavioral engagement, and school truancy. The main focus of this study was to examine factors correlating with students' behavioral engagement (see Aim 3 of the thesis). The assumed mechanisms linking behavioral engagement and truancy to the explanatory factors were based on the propositions stated in the social control theory (Hirschi, 1969) and the participation–identification model (Finn, 1989; Finn & Zimmer, 2012).

3 METHOD

3.1 Samples

Data comprising Sample 1 were collected in December 2012 and January 2013. The sample was hierarchically structured, as it included 2485 students, in 158 classrooms, in eight Finnish-speaking, public lower secondary schools. Five of the schools were located in northern Finland and three in western Finland. The sample (which included 52.2% females) comprised 35.9% ninth graders, 32.2% eighth graders, and 31.9% seventh graders, with a mean age for the total sample of 14.7 years (*SD* = 0.92). This sample was used in *Study 1* for examining the a priori hypothesized five-factor structure of the SEI-F, and in *Study 2* for identifying latent student profiles based on engagement and burnout.

Data comprising Sample 2 were collected in November and December 2010 from seven Finnish-speaking public lower secondary schools in western Finland (students nested within 58 classrooms). The sample consisted of 821 students from grades 7, 8, and 9 (mean age for total sample 14.4 years, *SD* = 0.92). The sample (49% females) comprised 32% ninth graders, 31.3% eighth graders, and 36.7% seventh graders. This sample was used in *Study 3.* It was also used in *Studies 1* and *2* as a cross-validation sample for replication of the models constructed with Sample 1.

In Sample 1, 17.6% of the students received some form of special needs education, which slightly exceeds the official national statistics and indicates that, in academic year 2012-2013, 14% of students received intensified or special support in their school (Official Statistics of Finland, 2013). This difference is due to a more stringent criterion used in compiling the official statistics, where special education status is applied only for students with official pedagogical assessments or statements as a requirement for receiving remedial support at school. In our two samples, all students who were documented by the school as receiving support from a special needs teacher were regarded as students with special education needs, regardless of whether support was preceded by formal diagnosis or assessment. In other words, some of the students in the sample

received special needs education as a part of general support, which is not recorded by official statistics. With respect to student background, Sample 1 had a slightly higher proportion of students with foreign background (labeled as family immigrant status in the articles and defined as one or both parents not born in Finland) than the corresponding proportion in the national statistics (7.5% in Sample 1 and 5.5% in the official statistics) (Official Statistics of Finland, 2015).

In Sample 2, as in Sample 1, students with special education status (13.9%) were slightly overrepresented, in comparison to the proportion (10.4%) reported in national statistics for that time period (Official Statistics of Finland, 2011) due to the different defining criteria. In Sample 2, as in Sample 1, the proportion of students with foreign background was somewhat higher (6%) than the 4.4% reported in the national statistics (Official Statistics of Finland, 2015).

Geographical representativeness of the samples, with respect to the whole country, was not fully met, as the samples did not include students from the eastern and southern parts of Finland, nor did they include Swedish-speaking students. However, school-level variation in student outcomes is generally small in Finland (OECD, 2011b). Moreover, school-level intraclass correlations for the study variables in the present data were either zero or small in magnitude (range .00–.05; see descriptive statistics of the samples in Appendixes 7 and 8). Taken together, with the exception of a slight overrepresentation of students with special education status and students with foreign background, the samples can be seen to be representative of Finnish lower secondary schools. As described above, the slight overrepresentation of students in the sample with special needs is likely to be related to a more inclusive definition applied in the study than that used by Statistics Finland. It possibly is also related to the somewhat higher proportion of students with foreign background than in the national statistics.

3.2 Main measures and the assessment procedure

Table 2 shows the main instruments and measures applied in the thesis. The two student-reported engagement measures employed in the present thesis were the Student Engagement Instrument (SEI; Appleton et al., 2006) and the Research Assessment Package for Schools (RAPS; Wellborn & Connell, 1987). Both the SEI and the RAPS have proven valid and reliable self-report instruments for measuring student engagement (Fredricks et al., 2011).

SEI is a four-point Likert scale instrument consisting of 33 items divided into three subscales assessing affective engagement (teacher–student relationships, family support for learning, and peer support at school) and two subscales assessing cognitive engagement (future aspirations and goals, and control and relevance of school work). The affective engagement scales capture student-perceived experiences of support for studying, whereas the cognitive

engagement scales assess students' views of self-regulation, strategy use, future educational goals and value, utility, and relevance of education in general. SEI was developed within the school dropout prevention paradigm (see Christenson et al., 2008). In line with the three theoretical perspectives applied in this thesis (see chapter 2.3), the forms of affective engagement assessed in the SEI (that is, student-reported teacher-student relationships, and support from family and peers) were construed as facilitators of engagement rather than indicators of engagement (see chapter 2.4 for the distinction between facilitators and indicators).

The Research Assessment Package for Schools (RAPS; Wellborn & Connell, 1987) is a part of a larger instrument originally generated for school reform efforts by the Institute for Research and Reform in Education in the United States (see Connell & Klem, 2006). The instrument incorporates two subdomains of student engagement in school: 1) Ongoing engagement with school and 2) Reactions to challenge (i.e., the strategies students use when faced with negative or stressful school events). For the purposes of the present study, to provide a measure of behavioral engagement, a composite mean score, based on four items tapping ongoing engagement (e.g., *I work very hard on my schoolwork, I pay attention in class*), was used in the analyses in *Studies 1* and *3*. The fifth item, *How important is it to you to do the best you can in school?* was used in *Study 2* as an item included in the composite mean score. The items were rated on a four-point Likert scale.

Students' school-related burnout was assessed using the 10-item short form of the Bergen Burnout Inventory (BBI-10; Salmela-Aro & Näätänen, 2005). The BBI-10 measures students' perceptions of school-related cynicism, exhaustion, and inadequacy. BBI-10 consists of 10 items rated on a six-point Likert scale. A composite mean score was computed for the analyses in this thesis. A more detailed description of the psychometric properties of the SEI, RAPS Ongoing Engagement with School Scale, and BBI-10 is found in the original *Studies 1–3*.

In translating the SEI (Appleton et al., 2006) and the RAPS Ongoing Engagement with School Scale (Wellborn & Connell, 1987) into Finnish, a standard back-translation procedure was applied. First, both measures were translated into Finnish, carefully following the expressions of the original instruments. Second, the questionnaires were piloted in May 2010 in an urban lower secondary school. Third, slight modifications to linguistic wording were made based on student feedback from the pilot. Fourth, the Finnish SEI was back-translated into English by an independent certified translator. Finally, this translation was compared with the original English version and a consensus was negotiated. The school burnout measure (BBI-10; Salmela-Aro & Näätänen, 2005) is published in Finnish, which means that a translation procedure was not needed.

TABLE 2 Main instruments, measures, and statistical methods in Studies 1–3

Main instruments and measures	Study 1	Study 2	Study 3
- Student Engagement Instrument (SEI; 33 items, 5 factors, 1–3 of which assess affective engagement and 4–5 of which assess cognitive engagement): (1) teacher–student relationships, (2) family support for learning, (3) peer support at school, (4) future aspirations and goals, (5) control and relevance of school work. The original Likert scale (1 = *strongly agree*; 4 = *strongly disagree)* was reverse-coded so that higher scores indicate a higher level of engagement.	X	X	X
- Research Assessment Package for Schools: Ongoing Engagement with School Scale (RAPS; 4 items): Behavioral engagement. The original Likert scale (1 = *strongly agree*; 4 = *strongly disagree)* was reverse-coded so that higher scores indicate a higher level of engagement. The response options for the fifth item *How important is it to you to do the best you can in school?* were 1 = *very important*, 2 = *sort of important*, 3 = *not very important* and 4 = *not at all important* (item included in the behavioral engagement composite measure in the *Study 2*).	X	X	X
- Bergen Burnout Inventory (BBI-10; 10 items): School burnout (cynicism, exhaustion, inadequacy). The original Likert scale (1 = *completely agree*; 6 = *completely disagree)* was reverse-coded so that higher scores indicate a higher level of school burnout.	X	X	
Main statistical methods	Study 1	Study 2	Study 3
Confirmatory factor analysis; Path analysis	X		X
Latent profile analysis; Multinomial logistic regression analysis		X	

3.3 Statistical methods

Structural equation modeling (SEM) is a methodological approach used for testing theoretically driven hypotheses of a phenomenon of interest (Bollen, 1989) or for exploratory analysis of a problem that has not been clearly defined (Shields & Rangarjan, 2013). The focus is on unobservable latent constructs, which are approached through analyzing the observed variables.

The analyses were carried out using Mplus, versions 6.12–7.11 (Muthén & Muthén, 1998–2012). *Study 1* applied confirmatory factor analysis with the means and variance-adjusted weighted least squares estimator (WLSMV). In *Studies 2* and *3*, the parameters were estimated using the maximum likelihood with robust standard errors (MLR) estimator, along with corrected standard errors for clustering (COMPLEX option in Mplus). According to Brown (2006), WLSMV is the best choice for categorical data modeling in confirmatory factor analysis, as it provides essentially unbiased factor loadings, irrespective of the number of Likert-type scale response categories or sample size (Li, 2015). However, WLSMV may overestimate interfactor correlation estimates when the sample size is relatively small and/or when a latent distribution is moderately nonnormal. MLR, instead, produces generally less biased standard error estimates (Li, 2015). In *Study 1*, because the primary focus was on testing the measurement model of the SEI, unbiased factor loadings representing the strength between the indicators (i.e., observed variables) and the latent variables (i.e., factors) were of specific interest. Thus, the WLSMV estimator was applied in this study. On the other hand, of interest in *Studies 2 and 3* was statistically testing significant paths from independent variables (or exogenous variables, when latent factors are concerned) to dependent variables (i.e., endogenous in the context of latent factors). In order to avoid the overestimation of the correlations between factors, MLR was used as an estimator in *Studies 2* and *3*.

The main methods in *Study 1* were confirmatory factor analysis (CFA) and path analysis (PA). CFA tests a priori hypotheses of the structure of the constructs (Bollen, 1989; Kline, 2013). Because the SEI already has a well-established theoretical and empirical ground (Appleton et al., 2006; Betts, Appleton, Reschly, Christenson, & Huebner, 2010; Carter, Reschly, Lovelace, Appleton, & Thompson, 2012; Grier-Reed, Appleton, Rodriguez, Ganuza, & Reschly, 2012; Lovelace, Reschly, Appleton, & Lutz, 2014; Moreira, Vaz, Dias, & Petracchi, 2009; Reschly, Betts, & Appleton, 2014), CFA was an appropriate method for assessing the structure of the affective and cognitive subtypes of engagement of the SEI in the Finnish school context.

In order to capture the student variability in student behavioral engagement, cognitive engagement, and school-burnout, *Study 2* employed a person-centered method, namely latent profile analysis (LPA; Muthén & Muthén, 1998—2012) to identify profiles of lower secondary school students. LPA is a method for identifying underlying, distinct profiles of students in a

population.[v] In contrast to the traditional cluster analysis, LPA is model-based and provides multiple statistical criteria for determining the number of latent profiles. Latent profiles are extracted based on differences in the mean parameters, rather than in observed variables that contain measurement error. Application of person-centered analytic techniques is particularly relevant for studies of student engagement, because of the assumed multidimensional nature of the construct (Fredricks et al., 2004). Multidimensionality implies that an individual is optimally engaged when he/she experiences high levels of engagement in all dimensions (Conner & Pope, 2013). The multidimensional perspective, on the other hand, acknowledges that multiple combinations of dimensions are possible for achieving high academic outcomes (see Wang & Peck, 2013 for such a result). Variable-centered analysis, such as regression, typically seeks to relate external variables (i.e., those not used to determine cluster membership) separately to each engagement dimension at the population level. Person-centered analysis, such as latent profile analysis, enables the investigation of the associations between external variables within subgroups of students with similar engagement profiles across the various dimensions of student engagement (see Pastor, Barron, Miller, & Davis, 2007). This facilitates analysis of whether student profiles differ from each other, e.g., regarding student-perceived teacher-student relationships. Because the number of profiles applicable for the data exceeded two, the external correlates of the profiles were inspected by means of multinomial logistic regression (students' profile membership as a categorical dependent variable).

Study 3, started by applying confirmatory factor analysis for analyzing the properties of the three-factor measurement model; next, path analysis was applied in order to analyze the covariates correlating with behavioral engagement and truancy.

4 OVERVIEW OF THE STUDIES

4.1 Study 1: Assessment of student engagement among junior high school students and associations with self-esteem, burnout, and academic achievement

The aims of *Study 1* were to investigate the structure of affective and cognitive engagement using the Finnish version of the Student Engagement Instrument, SEI (Appleton et al., 2006) and to examine the associations between the subtypes of engagement and students' behavioral engagement, self-esteem, burnout, and academic achievement. The analyses were conducted using two Finnish lower secondary school samples of students from Grades 7, 8 and 9. Sample 1 consisted of 2485 students and Sample 2 consisted of 821 students. First, the hypothesized latent[vi] structure of the SEI, with three factors forming the affective subtype and two or three factors forming the cognitive subtype, was tested in Sample 1 using CFA (*structural validity*). Several theory-based competing models were specified and tested against each other. The results were then cross-validated in an independent sample (Sample 2) of Finnish lower secondary school students. Next, associations between the SEI affective and cognitive engagement subtypes and the other measures were analyzed (*concurrent validity*). Finally, scale and item reliability information of the SEI was examined.

The confirmatory factor analysis confirmed a five-factor structure that was very similar to what was expected based on the theoretical propositions of the original US scale. The structure held across two independent samples when two items were excluded. The Finnish version of the SEI (SEI-F) was construed along three affective engagement factors (teacher–student relationships, peer support at school, and family support for learning) and two cognitive engagement factors (control and relevance of school work, and future aspirations and goals). With respect to previous studies investigating the structure of the SEI (Appleton et al., 2006; Betts et al., 2010; Carter et al., 2012; Moreira et al., 2009; Reschly et al., 2014), a new finding was the specification of

the control and relevance of school work factor, with three sub-factors: control of school work (three items), relevance of school work (three items), and validity of student assessment (two items). Furthermore, an alternative conceptualization of the factor structure of the SEI-F was also suggested, constituting two highly correlated second-order factors with five first-order factor indicators (affective engagement containing teacher–student relationships, peer support at school, and family support for learning; and cognitive engagement, which contained control and relevance of school work, and future aspirations and goals).

The path analysis revealed expected concurrent associations among affective and cognitive engagement assessed with SEI and students' behavioral engagement, self-esteem, burnout, academic achievement, students' grade level, and gender. Higher levels of behavioral engagement, self-esteem, and academic achievement were associated with students experiencing higher affective and cognitive engagement. A high level of school burnout was negatively associated with affective and cognitive engagement. Girls reported higher levels of affective and cognitive engagement than boys did. Younger students manifested higher affective engagement than older students, but not higher cognitive engagement. The reliability analyses indicated acceptable or good item and scale reliabilities for all other SEI factors except for control and relevance of school work sub-factors. To conclude, the SEI-F affective and cognitive subtypes of engagement approximated the structure expected a priori and had meaningful concurrent relationships with multiple school-relevant variables. Reliabilities were acceptable or good.

It is concluded that the SEI-F has strong potential to be of practical value as a universal school-based risk monitoring instrument for affective and cognitive subtypes of student engagement in Finnish lower secondary schools. Given that evaluation of affective and cognitive engagement is highly inferential and can be best achieved through self-reports, the SEI-F may help identify low-engaged students who have not been detected by teachers based on behavioral signs.

4.2 Study 2: Student engagement and school burnout in Finnish junior high schools: Latent profile analysis

The aim of *Study 2* was to identify latent profiles among lower secondary school students by their level of behavioral and cognitive engagement and school burnout, and to examine the correlates of the profiles. The latent profiles were first extracted using Sample 1 (N = 2485). The number of profiles was then cross-validated with Sample 2 (N = 821). Finally, the profiles were analyzed with respect to their correlates.

The latent profile analysis identified three profiles: a high-engagement, low-burnout profile (40.6% of the sample); an average-engagement and

average-burnout profile (53.9%); and a low-engagement, high-burnout profile (5.5%). The subsequent analysis indicated that high levels of support from teachers (high student-reported teacher–student relationships) and parents, good academic performance, and not playing truant from school were associated to a statistically significant degree with belonging to the first two profile groups, in contrast to the low-engagement, high-burnout profile. The variables correlating with belonging to the high-engagement, low-burnout profile, as compared to belonging to the low-engagement, high-burnout profile, were good self-esteem and intent to continue studies in high school.

This study showed that, for the vast majority of Finnish lower secondary school students, behavioral and cognitive engagement is at an average or high level and the students do not report worrying levels of school burnout. Furthermore, student-reported school burnout covaried with behavioral and cognitive subtypes of engagement. Highly engaged students reported low levels of school burnout, while students with average engagement reported average level of burnout and low-engaged students reported high levels of burnout.

4.3 Study 3: Student behavioral engagement as a mediator between teacher, family, and peer support and school truancy

The third aim of this thesis was to analyze factors associated with students' behavioral and cognitive engagement. *Study 3* examined relationships among student-reported feelings of being cared for, accepted, and supported by their teachers (teacher–student relationships), family (family support for learning), and peers (peer support at school); students' self-reported behavioral engagement; and truancy from school. Educationally relevant covariates – that is, students' background characteristics, educational (school) aspirations after basic education, and self-reported academic achievement – explaining students' (N = 821) behavioral engagement and truancy were adjusted for in the models.

Having established a good measurement model fit, the path analysis indicated that teacher-student relationships and family support for learning (but not peer support at school) were positively associated with student behavioral engagement, which, in turn, was negatively associated with truancy. Behavioral engagement mediated the associations between teacher and family emotional support and truancy. The following covariates were positively associated with student behavioral engagement: high academic achievement, female gender, and family structure (living with one parent and his/her partner, living with one parent, and living with both parents). Covariates that positively associated to truancy were age and female gender.

The results highlight the pivotal role of student-perceived teacher–student relationships and support from family as correlates of students' behavioral engagement and as a means for preventing or reducing lower secondary school students' truancy from school.

5 GENERAL DISCUSSION

Given that student engagement is related to multiple positive school and post-school outcomes (e.g., Abbott-Chapman et al., 2014), one of the core functions of a school should be to engage its students (Parsons & Taylor, 2011). To address this challenge, theoretically sound and empirically valid tools for assessing students' engagement are needed. Furthermore, understanding of factors contributing to student engagement is crucial. The present thesis aimed to address these educational challenges. The first aim was to examine the structure of affective and cognitive engagement using the Student Engagement Instrument (Appleton et al., 2006), Finnish version (SEI-F). The second aim was to identify lower secondary school student profiles by their level of engagement and school burnout. The third aim was to analyze factors correlating with student engagement. The analyses yielded three main findings. First, with some factor structure modifications, SEI-F was demonstrated to have properties supporting its reliability for assessment of student engagement in the Finnish context. Second, three engagement and burnout profiles were identified among lower secondary school students: high-engagement/low-burnout profile, average-engagement/average-burnout profile, and low-engagement/high-burnout profile. Third, aligning with the theoretical perspectives drawn from the social control theory, the participation-identification model, and the person-environment fit perspective applied in this thesis, both individual and contextual support factors were identified as playing a pivotal role in students' engagement.

5.1 Structure of affective and cognitive student engagement

The first aim of this thesis was to investigate the structure of affective and cognitive engagement using the SEI-F. This was the first step in testing the psychometric properties of the Finnish version of the SEI, and one of the first non-US studies to investigate the Student Engagement Instrument (Appleton et

al., 2006). The results of the *Study 1* were consistent with some previous studies (Betts et al., 2010; Carter et al., 2012; Grier-Reed et al,. 2012; Moreira et al., 2009; Reschly et al., 2014) in indicating that the intended SEI five-factor structure (Appleton et al., 2006) can be replicated with some modifications.

First, one item from the affective engagement scale (*I feel safe at school*), which was supposed to load on the teacher-student relationships factor, was omitted because of loadings of almost equal size on both the teacher-student relationships and peer support at school factors. This cross-loading was also evident in the Exploratory Factor Analysis of the original SEI validation study (Appleton et al., 2006). The item is worded in a different way, in comparison with the other items that belong to the teacher-student relationships factor. The other items measure student-perceived care, acceptance, and support from teachers and other adults at school. The remaining item with different wording, *The school rules are fair*, reflected students' experiences of school rules determined to be under the control of adults at school. Instead, *I feel safe at school* is a relatively general statement that does not differentiate with whom a student does or does not feel safe at school. Furthermore, the item does not clarify whether a student response on his/her affects concerns physical (e.g., danger of being beaten up by a gang at school) or emotional (i.e., being accepted and respected by others) safety, or both. In the absence of indicators of possible explicit threat and violence, such as lack of security guards at Finnish schools, this statement may be confusing. As a result, this item appears to represent a mix of students' affects, the variance of which was relatively equally explained by perceived support from peers and teachers. Some scholars have suggested that feeling safe could not be included as an indicator of perceived support, but rather as an item measuring school belonging (e.g., Wang, Willett, & Eccles, 2011).

Second, the item *I feel like I have a say about what happens to me at school* (originally an item measuring control and relevance of schoolwork) did not fit any of the tested models. The poor fit of this item may stem from the differences between the original SEI validation sample (Appleton et al., 2006) and the samples used in the present research. The validation sample by Appleton et al. (2006) consisted of ninth graders from ethnically and economically diverse backgrounds in the US school context. The two Finnish samples (Sample 1: 2485 students; Sample 2: 821 students) used in the present thesis contained a relatively homogenous student body, with respect to ethnic and language background, from schools in both rural and urban neighborhoods, and students in Grades 7 and 8 as well as Grade 9.

There are differences between the Finnish and US school systems with respect to timing of transition to high school. In the US, ninth graders have typically already experienced the transition from middle school to high school (as was the case in the original validation sample) and, thus, were likely to be granted more autonomy and opportunities to control their studies than students in the Finnish samples, who studied in lower secondary school and had not yet experienced the transition to upper secondary school.

Another explanation may involve differences in school cultures between the two countries. In the US, students' opportunities to influence educational practices may be emphasized more than is the case with their Finnish counterparts. Finnish students may, therefore, experience fewer opportunities to exert influence on school-related practices and activities than their American counterparts.

The wording of the item *I feel like I have a say about what happens to me at school* is relatively ambiguous, particularly as it relates to the verb *happen*. We used the literal meaning of *happen* in translating this item to Finnish, yet, many students may have understood the item in an unexpected manner. Instead of a measure of student-perceived locus of control at school, the item could be interpreted to mean what happens to a student in the physical sense (e.g., physical violence at school). As a consequence, this item did not manifest reliable variation in the Finnish sample.

It is noteworthy that the two deleted items were the same two that were removed from the Portuguese version of the SEI (Moreira et al., 2009). This suggests that these items may not be applicable in European school contexts. The finding in the present study that control and relevance of school work was the least valid and reliable of the factors is consistent with the findings of Carter et al. (2012) and Grier-Reed et al. (2012). Based on their analyses, they omitted all items on the control and relevance of school work factor from the final model, which resulted in four-factor solutions for both elementary and college SEIs. Recently, Lovelace et al. (2014) found that control and relevance of school work was rated higher among academically low-achieving middle school students than among their academically high-performing counterparts. Specifying the control and relevance of the schoolwork factor as a three-sub-factor structure, as suggested in the present study, could address this structural validity problem.

This research provides evidence that the structure of affective and cognitive subtypes of engagement among Finnish lower secondary school students is comparable to that found in the US school context (Appleton et al., 2006). Even though there were a few items that did not have similar cultural relevance among Finnish students as they did in the original US sample, the results overall validated the Finnish version of the SEI for measuring lower secondary students' affective and cognitive engagement. The instrument showed generally acceptable validity and reliability properties; the factor correlations were in the expected direction, as were the concurrent associations with self-reported grades, level of school-related burnout, behavioral engagement, and self-esteem. Higher self-esteem and higher academic achievement were associated with students experiencing higher affective and cognitive engagement. A high level of school burnout was negatively associated with affective and cognitive engagement. Moreover, as in previous studies, girls reported higher affective and cognitive engagement than boys. Importantly, affective and cognitive engagement had statistically significant positive relationships with behavioral engagement. However, the dimensions assessing

student-reported control and relevance of school work must be considered with some caution and require further study.

5.2 Identification of student profiles of engagement and school burnout

The second aim of this thesis was to identify student profiles based on student behavioral engagement, cognitive engagement, and school-related burnout. In *Study 2*, three distinct student profiles were identified: high-engagement, low-burnout profile (40.6%); average-engagement and average-burnout profile (53.9%); and low-engagement, high-burnout profile (5.5%). This result indicated that student engagement and school burnout were related to each other, with higher engagement being associated with lower level of school-related burnout. This is consistent with previous findings indicating that student engagement associates positively with students' mental health (Antaramian et al. 2010; Conner & Pope, 2013) and well-being (Archambault, Janosz, Fallu et al., 2009; Pietarinen et al., 2014). This relationship between student engagement and school burnout seems to imply that lower secondary school students experience their school life in a holistic manner by perceiving their school experiences as either highly or moderately positively or negatively. This finding, which suggests that high engagement is related to low burnout, average engagement to average burnout, and low engagement to high burnout is in contrast to some prior findings among Finnish upper secondary school students (16–18-year-olds) (Tuominen-Soini & Salmela-Aro, 2014) and lower-secondary-to-upper-secondary-school students (Salmela-Aro et al., 2016). Those studies indicated greater heterogeneity in the sense that highly engaged students may experience either low or high school burnout. In upper secondary school, the engaged-exhausted profile comprised 28% of students, while in the lower-secondary to upper-secondary school sample, 45.8% of students were identified as engaged-exhausted. One reason for the difference in findings may lie in the different student bodies. Entry into upper secondary school is determined by students' prior academic success, whereas lower secondary school is unselective and compulsory for all students in Finland. Adolescents in the upper secondary school are, in general, more academically oriented than lower secondary school students and at the same time face increasing demands at school. High commitment to school and increased demands place some of the upper secondary school students at risk of emotional distress and exhaustion (Tuominen-Soini, Salmela-Aro, & Niemivirta, 2008). In lower secondary school, academic expectations are somewhat lower than in the upper secondary school and transition to higher education is not yet forthcoming.

In line with prior studies indicating variation in adolescents' adjustment to school (Archambault, Janosz, & Morizot et al., 2009; Li & Lerner, 2011; Wang & Peck, 2013), the analyses in the present study demonstrated variation in Finnish

lower secondary school students' engagement. The majority of students reported high or moderate engagement with school and experienced high or moderate psychological well-being. More than 90% of students reported that they experience either moderate engagement and burnout or high engagement and low burnout (for similar results among Grade 6 students, see Hietajärvi et al., 2014). These students find their relationships with teachers, parents, and peers rewarding and they can utilize these relationships as a resource for participation, learning, and skill development. It is reasonable to expect that a majority of these students will not have major problems during their later school careers and that they will remain engaged over time (Tuominen-Soini & Salmela-Aro, 2014).

However, some lower secondary school students did not seem to value school or consider it relevant, and consequently did not participate actively in school-related activities. Instead, they tended to find school unrewarding, non-relevant for their future goals, and exhausting. The size of this student profile (5.5%) was in line with prior studies conducted in Finland. Those studies have shown that 5% of among elementary school students at age 12 are low-engaged and express high cynicism (Salmela-Aro, Muotka, Alho, Hakkarainen, & Lonka, in press). In the combined sample of lower and upper secondary school students 7.8% belong to the profile characterized by low engagement and high burnout levels (Salmela-Aro et al., 2016). Given that disengagement is a long-term process that begins in the early school years (Finn, 1989), these students are clearly on track for elevated risk of dropping out of secondary education (Lamote et al., 2013; Wang & Peck, 2013), or completing it with very low grades. In the long run, a subgroup of these students may not be capable of joining the labor market (Myrskylä, 2012). Because adolescents' academic and emotional functioning is relatively stable (Roeser & Peck, 2003; Wylie & Hodgen, 2012), low engaged high burnout students need to be identified at an early stage and offered timely and effective support (cf., recommendations of the curriculum guidelines in Finnish National Board of Education, 2014) in order to suspend the cycle of negative feedback and instruction and further alienation (see Sutherland & Oswald, 2005).

Recent statistics have shown that 5.6 % of Finnish students who attended post-comprehensive (basic) education leading to a qualification or degree discontinued their studies and did not resume any education leading to a qualification or degree (Official Statistics of Finland, 2014a). This dropout rate from post-comprehensive schooling is only slightly smaller than the 8.5% of students who complete the nine years of basic education but are not accepted in further studies (Official Statistics of Finland, 2014b). The low engaged high burnout students identified in the present thesis may be at risk of not entering further education or joining the labor market.

In sum, higher behavioral and cognitive engagement among lower secondary school students appears to be associated with a lower level of school-related burnout. Moreover, despite recent studies showing that Finnish lower secondary students' learning results (OECD, 2013a, OECD, 2016) and learning

attitudes (Hautamäki, Kupiainen, Marjanen, Vainikainen, & Hotulainen, 2013) have been declining in international comparisons, the findings of this thesis have shown that a large majority of lower secondary students self-reported moderate or high engagement and did not manifest high levels of school-related burnout. However, a small group (5.5%) of students reported alarmingly low engagement and high burnout. This number of students is in accordance with Finnish statistics and previous empirical studies showing that 5–10% of Finnish adolescents are at elevated risk of school and post-school problems.

5.3 Factors correlating with student engagement

The third aim of the present thesis was to analyze factors correlating with students' behavioral and cognitive engagement. Three kinds of factors were examined in the studies: student background factors, contextual support factors, and factors depicting student characteristics and aspirations.

5.3.1 Student background factors

The results of this thesis show that, of the background factors, student engagement was associated, to a statistically significant degree, with gender, grade level, and family structure. More specifically, the results are in accordance with recent studies (Li & Lerner, 2011; Wang et al., 2011) in indicating that girls are more behaviorally engaged than boys. Further, consistent with other studies (Lam et al., 2012; Li & Lerner, 2011), girls also reported higher levels of family and peer support and future goals than boys. Except for future aspirations and goals, younger students (that is, those studying at lower grades) were more cognitively engaged and experienced more contextual support than students studying in upper grades (see also Wang & Eccles, 2012a, Whitlock, 2006; Woolley & Bowen, 2007). Students living permanently with at least one parent were more engaged than students living in a foster institution or a group home and students living in two households due to joint custody of divorced parents (see similar findings, Willms, 2003). Interestingly, students' self-reported special education status was not related to their level of engagement.

The result that girls were more behaviorally engaged than boys can be explained based on the three theoretical perspectives utilized in this thesis. Girls appear to invest more effort than boys into social relationships by forming positive relationships with their parents and peers, and they have higher educational future aspirations and goals (*Study 1*). This suggests that they have a high extent of social bonds buffering them against low behavioral engagement in school. Consistent with the social control theory (Hirschi, 1969), girls may not be likely to risk their valuable social relationships and high educational aspirations by behaving poorly. From the person-environment fit perspective

(Eccles et al., 1991; Eccles & Roeser, 2011), girls are more likely than boys to adapt to the school culture and adopt its norms. Girls were found to experience high levels of family and peer support, which helps to fulfill the need for relatedness. This supports behavioral participation in school-related activities, which fosters academic performance (Eccles & Roeser, 2011). In the participation identification model (Finn, 1989; Finn & Zimmer, 2012), academic achievement is believed to contribute to students' identification in terms of belonging and participation in a cyclical manner.

The present study has indicated that younger lower secondary students (studying at a lower grade level) experienced higher levels of teacher and family social support and control and relevance of school work than older students. Similar results have been reported in previous studies (Wang & Eccles, 2012a, Whitlock, 2006; Woolley & Bowen, 2007). The present study also provided some (admittedly weak) evidence that seventh-graders receive better grades and experience less school-related burnout than eighth- and ninth-graders. As students progress in their academic career, schooling becomes more academically demanding, which increases the risk of a high level of school burnout (see Salmela-Aro, Kiuru, & Nurmi, 2008). It seems that younger students' psychological needs of relatedness with teachers and parents are better met, and their feelings of academic competence are higher than those of older students. As a result, the younger students report higher experiences of control and relevance of schoolwork than older students. Moreover, students who are approaching the concluding phase of their basic education are likely to become concerned or anxious about their future career plans. Those young people who do not intend to continue on an academic track after basic education may find the theoretical orientation of Finnish lower secondary school unrewarding and, therefore, their interest and engagement in school may start to wane.

Correlational analyses concerning the family structure indicated that living with both parents (intact family) was the most optimal family structure with regard to high student engagement. This finding may be explained through at least two perspectives. First, family structure is related to family socio-economic background (OECD, 2010), which is known to be associated with student engagement (e.g., Linnakylä & Malin, 2008; Willms, 2003). Schoon, Martin, and Ross (2007) showed that parents from advantaged social backgrounds had higher aspirations for their child than parents from disadvantaged backgrounds. Parental education expectations, in turn, were significantly associated with school motivation: the higher the parental educational aspirations for their child, the higher the child's school motivation. Second, extant literature has found parental involvement to have a positive effect on student behavioral engagement (Fan & Williams, 2010; for a review, see Gonzalez-DeHass, Willems, & Holbein, 2005). It can be assumed that adolescents in intact families have access to more resources that support their schoolwork, emotionally, financially, and academically.

Special education status did not associate with student behavioral engagement or latent profiles of behavioral and cognitive engagement and school burnout in the analyses. Bivariate correlations (see Appendixes 7 and 8), however, revealed that, in both samples, students with special education needs were statistically significantly less affectively, behaviorally, and cognitively engaged than students without special education needs. In Sample 2 (N = 821), the associations between affective, behavioral, and cognitive engagement and special education status became non-significant (as indicated by partial correlation analysis) when controlling for students' academic achievement. In Sample 1 (N = 2485), the partial correlations between students' special education needs status and the three subtypes of engagement controlling for academic achievement were statistically significant, but small (Cohen, 1988) in magnitude (range .06–.10). This statistically significant association is most likely due to the fact that the sample size was larger in Sample 1 than in Sample 2. Partial correlation analyses implied that the lower levels of engagement of students with special education needs were, to some extent, explained by their poorer academic achievement.

5.3.2 Contextual support factors

This thesis provided consistent support for teacher–student relationships as the most important support for students' behavioral and cognitive engagement. This is in line with previous studies, which have suggested that emotional support provided by teachers facilitates student engagement and acts as a protective resource against disengagement (Roorda et al., 2011; Voelkl, 2012; Wang & Eccles, 2012a, Wang & Eccles, 2013; Wang & Holcombe, 2010). Emotional support from parents was another positive source or facilitator of student engagement (Estell & Perdue, 2013; Hill & Wang, 2015; Wang & Eccles, 2012b). However, the analyses failed to show any evidence for perceived peer support having an effect on students' behavioral or cognitive engagement. The social control theory posits that when students are attached to significant others, they want to conform to their expectations and accept the social norms they represent (Hirschi, 1969). When teachers provide students with emotional support, students' needs for relatedness and school belonging are likely to be met, as suggested by the person-environment fit and participation-identification models. A supportive student–teacher relationship increases the likelihood that students will accept teachers' authority and the legitimacy of school rules and conform to teachers' expectations by being actively engaged. Social control theory also holds that a student may not want to risk the valued social relationships and educational prospects by deviating from school norms and values. Therefore, it is a rational and beneficial choice for a student to commit to fulfilling teachers' expectations concerning engagement with school. The mechanism through which teachers' support has an impact on students' engagement may also run through motivation. Contextual support by teachers is likely to enhance students' motivation, which again positively contributes to their engagement and ultimately learning (Connell & Wellborn, 1991).

The professional role of a teacher is to engage and motivate the youth (Pianta & Allen, 2007), but this is not necessarily the case with parents (Attwood & Croll, 2006) and peers (Linnakylä & Malin, 2008), who may see their role differently or may have limited ability to support an adolescent's development. For example, it has been shown that family socio-economic status has an influence on student development through parenting beliefs and goals, parenting styles, and parenting practices (Hoff, Laursen, & Tardiff, 2002). Some parents may convey neutral or even negative attitudes towards a student's involvement in school activities. A mismatch between the values of the school and family environments may hinder student engagement at school (Kumar, 2006). Variation in parental attitudes, and consequently their support, is one probable explanation for the present finding that family support has a weaker relation to student engagement than teacher support (in terms of teacher–student relationships).

Although peers constitute an important microsystem (Bronfenbrenner, 1979) that has an effect on adolescents' development and adjustment at school, the present study – in line with some previous findings – failed to document any strong positive associations between peer support and student behavioral engagement (Demanet & Van Houtte, 2012; Wang & Eccles, 2012a). This is in contrast to Hirschi's (1969) proposition, which implies that any type of social attachment is beneficial. The characteristics of the peer with whom a student bonds may be highly important. The view that all types of social attachment bonds are beneficial may originate from the social control theory's (Hirschi, 1969) exclusion of empirically unmeasurable socialization from (Kuhn, 2009). Socialization offers an explanation for the adoption of disruptive behaviors when associating with antisocial or delinquent peer groups (Ryan, 2000).

Linnakylä and Malin's (2008) study of the engagement of 15-year-old Finnish students identified a group of students (14%) who were accepted by peers but also experienced problematic teacher-student relationships, and reported negative attitudes towards school, and low relevance of school for their future endeavors. These students were mostly boys from low socio-economic status families and their cognitive abilities were at a low level. Among these students, peer relationship skills did not seem to be associated with their overall positive adjustment and functioning at school. It has been shown that students' school-related problems tend to cluster at the peer group level (e.g., Kiuru, Aunola, Nurmi, Leskinen, & Salmela-Aro, 2008). Belonging to a peer group that opposes the values represented by school may promote a negative stance towards engagement at school, whereas belonging to peer groups of students with high behavioral and emotional engagement has been shown to be associated with improved academic and psychological functioning (e.g., Li & Lerner, 2011).

5.3.3 Student characteristics and aspirations

In line with previous studies (Haapasalo et al., 2010; Stewart, 2008; Wang & Eccles, 2012b), the present thesis found academic performance to be positively

associated with students' behavioral and cognitive engagement. The participation-identification model (Finn, 1989; Finn & Zimmer, 2012) suggests that academic performance contributes to affective and cognitive engagement, which leads back to active behavioral engagement or disengagement from school. These findings from the present study are also in line with the propositions of the person-environment fit perspective (Eccles et al., 1991; Eccles & Roeser, 2011). The need for competence can be fulfilled in school by performing well academically, which bolsters intrinsic motivation and engagement (Deci & Ryan, 2000).

As expected based on earlier literature, students' self-esteem (Finn & Rock, 1997; Ma, 2003) was found to be positively associated with their behavioral and cognitive engagement: higher self-esteem was associated with higher engagement. It appears that students' self-perceptions align with how they experience school (Ma, 2003). This finding raises questions about the extent to which student engagement reflects personality traits (Janosz, 2012), which would make engagement less context-dependent and therefore more resistant to intervention. The relationship between engagement and personality traits is clearly one direction for future research (see Komarraju, Karau, & Schmeck, 2009; Wang & Degol, 2014).

Students' self-reported educational aspirations (Haapasalo et al., 2010; Stewart, 2008; Wang & Peck 2013) also explained their engagement in other subdomains. Students who wished to continue studies in the upper secondary school academic track tended to be more behaviorally and cognitively engaged (and experienced less school-related burnout) than those who did not state this wish. From the perspective of the social control theory, high educational aspirations can be regarded as a rational investment in conventional behavior, future career, and economic success. Low behavioral engagement would risk this investment. The participation–identification model underlines valuing school-related goals as an element of bipartite identification with school, which promotes successful academic performance. High identification with school leads to elevated levels of norm-following behavior and successful academic performance in a cyclical manner.

Not playing truant from school was positively associated with self-reported behavioral and cognitive engagement at school (see similar findings in Maynard et al., 2012). Students skipping classes and entire school days manifest active and visible resistance against school rules, personnel, and the values represented by the school. *Study 3* indicated that these students perceived their relations with teacher and family as poorer than their counterparts did. This may indicate that these students do not mind risking their relations with school, and are therefore more inclined to deviate from prosocial norms (Hirschi, 1969). Non-identification is then a precursor of nonparticipation (Finn, 1989). On the other hand, poor social relations may have led to low-engaged students having reservations about the moral value of school norms and being inclined to oppose them by skipping school. In line with the person–environment fit terminology, the fit to school is poor among students with high truancy

behavior; in such instances, school cannot optimally support students' experiences of autonomy and competence (Connell & Wellborn, 1991; Skinner et al., 2008).

5.4 Practical implications and suggestions

This thesis has two important implications. First, the results suggest that the SEI-F (adapted from the SEI by Appleton et al., 2006) has high practical utility in assessing affective and cognitive engagement, also among Finnish lower secondary school students. A tool such as the SEI-F helps to identify low-engaged students (possibly those who have not been detected by teachers) before school-related problems can accumulate. When the typical limitations of student self-reporting (social desirability and selection bias) are taken into account, the SEI-F measure provides an easily administered and cost-effective tool to use in schools to gain unique detailed microlevel information on students' self-perceived support for affective engagement and experiences of cognitive relevance and value of school. This information about how students experience school can be effectively utilized in efforts to support students' engagement (see Finnish National Board of Education, 2010; 2014). Low SEI-F scores (such as sample-based values representing the lowest 10%; Appleton, 2012) are seen to present a signal that requires further investigation of the reasons for students' low engagement. Accurate early identification of low-engaged students would allow timely and adequate support for all students (Fuchs, Fuchs, & Compton, 2012). As student engagement comprises various dimensions building upon each other in a mutually shaping process (Li & Lerner, 2013; Wang & Fredricks, 2014), it is essential to identify low-engaged students and their support needs at an early stage in order to prevent students' school-related problems from accumulating and withdrawal from school and eventual dropout (Finn, 1989).

However, relying on a single time point or unitary assessment of a student's engagement carries a risk of over-labeling students. Therefore, both the levels and *trends* of student-perceived engagement would optimally be systematically monitored (e.g., twice within the academic year) with the SEI-F. Given that the primary focus of basic education is directed towards a holistic process of promoting learning and well-being rather than simply producing certain outcomes (such as students' academic achievement), educators would need to take engagement into the heart of educational practices at school (Parsons & Taylor, 2011; Shernoff, 2013). Thus, learning and increased well-being can be seen as a critically important by-product of improved student engagement.[vii] The scores provided by the SEI-F instrument can be aggregated at the classroom and school levels to inform homeroom teachers and principals about students' school experiences.

Second, in prior studies (see Reschly & Christenson, 2006) and in the present sample, engagement has been found to be associated with multiple

alterable contextual and individual influences. Thus, enhancing students' engagement by increasing teacher and family support may prevent truancy and improve students' academic achievement and school-related well-being (for example, the absence of school burnout). Student engagement is considered relevant for all students (Appleton & al., 2008), and this principle is in consonance with the Finnish educational aim of guaranteeing all students achievement at high levels (Sahlberg, 2015) by providing equal access and the necessary support . This means promoting all students' engagement on a daily basis as a means of buffering adolescents against risks in their subsequent school career (Wang & Fredricks, 2014). Following the ideas suggested by O'Farrell, Morrison, and Furlong (2006), a three-tiered model of supporting student engagement is proposed here. The model involves reaffirming, reconnecting, and reconstructing engagement, as depicted in Figure 1. In this model, reaffirming refers to high-quality classroom and school-level practices that proactively support students' experiences of belonging and commitment at school; reconnecting refers to effective support for students identified as manifesting signs of low engagement; and reconstructing refers to targeted and comprehensive support provided for students at risk of drop-out or alienation from school.

As indicated in Figure 1, *reaffirming* comprises a goal-directed strategy and jointly monitored effort to engage the whole school with its personnel and students' parents or carers into the process of fostering positive school climate and well-being of students.

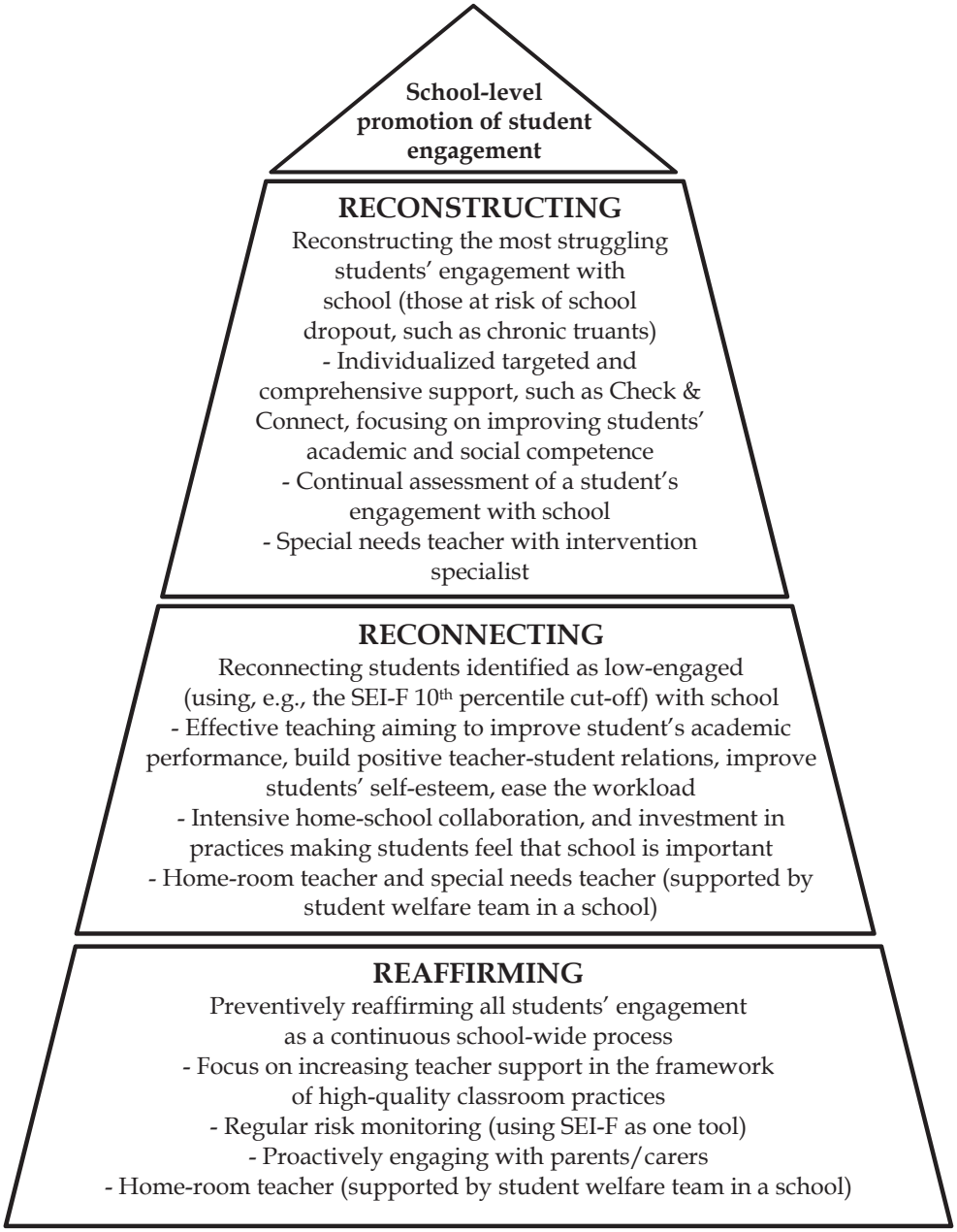

FIGURE 1 Reaffirming, reconnecting, and reconstructing students' engagement.

As the three theoretical perspectives to student engagement applied in the study (see Table 1) and the empirical findings of the present thesis suggest, the most influential means of facilitating student engagement are the daily proximal contexts in which teachers and family provide students with care, acceptance, and support. Therefore, systematically improving the quality of classroom instruction (Finn, 1989; Finnish National Board of Education, 2014) needs to be at the core of developing engaging learning environments for lower secondary school students and awakening their curiosity and passion for learning (see Robinson & Aronica, 2010). I would argue that, because adolescents have an inherent need to engage in something meaningful to them, daily, proactive reaffirmation of students' engagement with high-quality classroom practices is the most effective means of the school preventing students from adopting anti-school attitudes and engaging in antisocial activities or peer groups. This is in line with Hirschi's (1969) social control theory, which suggests that, when students are involved in activities such as engaging in schoolwork, their opportunities to engage in antisocial activities are reduced. Moreover, high-quality classroom instruction as a form of preventive support for all students enables school special education resources to be directed primarily to those students who still need more intensive support.

One recently validated approach to improve classroom teaching in lower secondary school is the Teaching Through Interactions (TTI) framework (Hafen et al., 2015; Hamre et al., 2013), which seeks to understand classroom quality through teacher-student interactions. Observational assessment of classroom interactions has provided evidence about the multiple domains of teaching and teacher–student interaction that are linked with student engagement and achievement (Pianta, Hamre, & Allen, 2012; Pianta, Hamre, & Mintz, 2012), and are relevant aspects for teachers' professional development (Malmberg, Hagger, Burn, Mutton, & Colls, 2010). The domains of classroom quality, as defined by Pianta et al. (2012), consist of emotional support, organizational support, and instructional support. Emotional support comprises warm and caring relationships between teachers and students. It also involves teacher sensitivity to students' needs, including academic, behavioral, and affective, as well as students' perspectives and ideas. Managing students' behavior, time, and attention for the purpose of engaging students in learning activities comprises organizational support (Emmer & Stough, 2001; Evertson & Weinstein, 2006). Clear and positive reinforcement of expectations, routines, and rules provides effective organizational support, which, in turn, maximizes students' learning time (Gettinger & Walter, 2012). In addition, organizational support involves the methods the teacher employs to foster the desired behavior in students and to discourage undesirable behavior. Last, instructional support involves choosing teaching techniques that encourage higher-level thinking skills and thorough understanding of the subject matter (Pianta et al., 2012). Toward this end, a teacher can provide effective instructional support by watching for content areas often misunderstood by students, creatively presenting content to improve comprehension, offering a framework that presents key ideas in an

accessible format, and making frequent use of creative and visual teaching aids designed to capture students' attention (Gibbs & Poskitt, 2010).

The TTI framework (Hafen et al., 2015; Hamre et al., 2013) portrays engaging teaching as a multidimensional construct that consists of high-quality interactions along the three domains described above. These domains align with teacher behaviors that are seen as beneficial for supporting adolescent learning and development (Casabianca et al., 2013). The TTI framework can be converted to teacher-personalized and systematic coaching with verified significantly positive increases in adolescents' classroom behavioral engagement (Gregory, Allen, Mikami, Hafen, & Pianta, 2014). There is empirical evidence that classroom quality is positively associated with students' engagement. For instance, Brackett et al. (2011) documented a direct positive relationship between classroom emotional climate and students' conduct. Virtanen et al. (2015) showed that Finnish lower secondary classrooms with high organizational and instructional support are associated with high student behavioral engagement. Moreover, classroom emotional support has been found to have a positive impact on academic achievement, both directly and indirectly mediated by student engagement (Reyes, Brackett, Rivers, White, & Salovey, 2012). Highly educated, committed teachers with a strong sense of interest and responsibility for fostering students' engagement and well-being, as well as the capability to build positive relationships with adolescents and develop open communication with their parents, are needed at all stages of schooling, but especially during the lower secondary school years.

In addition to a focus on improving the classroom interaction quality and nurturing student motivation and participation through methods of instruction, reaffirming students' engagement refers to proactive identification of struggling students and classrooms with a low or decreasing trend of engagement. Teachers' continuous monitoring of students' engagement and well-being in classroom settings is of pivotal importance. Systematic, evidence-based monitoring, with an instrument like the SEI-F, provides educators information on the level of engagement (e.g., indicators of cognitive engagement) and targets for interventions (e.g., facilitators related to affective engagement). This kind of information can substantially increase the reliability of decisions made about the best options to support students' learning. The responsibility for monitoring for students' engagement could be assigned to homeroom teachers, supported with a team providing statistical help. They could collect data twice each year (e.g., once in the autumn term and once in the spring term) on their students' experiences of support from teachers, parents, and peers, as well as values and beliefs concerning schoolwork. Given that support from parents is crucial to enhancing students' engagement, the first step in utilizing the analyzed data would involve informing parents about the students' engagement and well-being and their own role in promoting it. Collaboration with parents would need to target all students in the school, both through classroom- or school-level parent-school activities and through individual meetings with parents organized for supporting individual students.

To prevent the development of increasingly negative attitudes towards school work students who report low levels of engagement could be identified and helped to become *reconnected* with regular and systematic services provided by the school. These services include support for students' well-being from the school nurse, social worker, and/or psychologist. Pedagogical support can be given by a part-time special needs teacher and a special needs assistant or student counselor (see Finnish National Board of Education, 2014). Although home-room teachers have typically the closest relationship with the students and a responsible role for monitoring their engagement, this task could also be assigned to a multi-professional collaborative team. Increases in student-perceived quality of teacher-student relationships have been shown to improve early adolescents' self-esteem (Reddy, Rhodes, & Mulhall, 2003) and students' academic abilities through increased engagement (Wang & Holcombe, 2010). Thus, a key to promoting engagement is an emphasis on high-quality teacher-student relations. If necessary, a student's workload can be reduced, by means of differentiation, in order to prevent school burnout. In the case of decreasing student engagement, collaboration with parents could be intensified and assessment of indicators of engagement (both behavioral and cognitive) discussed in regular meetings with parents, with the help of an Internet-based, teacher-parent collaborative interphase (e.g., Wilma tool in the Finnish schools). Importantly, a student's progress and responsiveness to support could be systematically monitored in order to help create a database for decreasing or increasing the intensity of support. It is not too late to provide effective support for students' engagement at lower secondary school. Longitudinal data show that although earlier patterns of student engagement contribute to later patterns, student engagement levels are not static or immutable (Wang & Fredricks, 2014). In other words, student engagement patterns are responsive to different modes of support provided by the school personnel (Wylie & Hodgen, 2012).

Reconstructing the relationship to school of struggling, disengaged students requires intensive measures. Following Finn's participation-identification model (Finn, 1989; Finn & Zimmer, 2012), it can be argued that, in situations requiring reconstruction of engagement, the key component is behavioral engagement (see Archambault, Janosz, Fallu et al., 2009 for links between behavioral engagement and dropping out of school). Students who show active disengagement by chronic truancy, for instance, need support to regain motivation to participate in school-related activities, which, in turn, contributes to academic performance and identification with school. The findings documenting the interrelated nature of affective and behavioral engagement (see *Study 1*) and their mutual reciprocal influences on each other (Wang & Degol, 2014) imply that students' behavioral engagement can be promoted by impacting the quality of teacher-student relationships. For adolescents, in particular, the school represents a key proximal context where social bonds with prosocial others protect against disengagement (Hirschi,

1969). Therefore, teachers' efforts to build and maintain warm and close relationships, especially with disengaged students, are important.

One widely-used, comprehensive intervention for regaining positive relation to school is Check and Connect (Christenson et al., 2008; Reschly, 2010; Sinclair et al., 2003), an individual, needs-based intervention originating from the dropout prevention tradition. Its focus is on persistent and extensive enhancement of all dimensions of student engagement. These consist of building positive relationships in the school, monitoring students' progress on a daily basis, nurturing their active participation in school-related activities, continually consulting the students' families, and commitment on the part of personnel to supporting students' educational success. Check and Connect intervention incorporates four components: assigning of a mentor, monitoring, individual intervention, and collaboration with parents. The mentor is an intervention specialist committed to working with the student, his/her family, and school personnel (particularly with the homeroom teacher and special needs teacher) for a minimum period of two years. The second component comprises systematic monitoring of progress in the student's engagement with respect to behaviorally manifested indicators, including school attendance, behavior, and grades, in particular. The third component is timely and individual intervention to promote engagement. It may include services offered by the school, such as support given by the special needs teacher and social work services. The fourth component is intensive, consistent, and persistent collaboration with students' parents, aiming to empower and increase parents' capabilities to support student engagement.

The use of intensive and individual student engagement intervention is supported by the recent finding by Martin et al. (2015). Their study showed that engagement is predominantly a student-level intrapsychic construct with substantial inter-individual variance. For academic (e.g., persistence and valuing school) and non-academic (e.g., life satisfaction and self-esteem) motivation and engagement measures, the bulk of variance was at a student level (from 51% to 83%). Therefore, effective support adjusts to the needs of individual students.

5.5 Limitations and suggestions for future research

Limitations of the study to be considered when interpreting the findings are partly linked with the scope of the measures used, the source of information being based on self-reports, and partly with design and context issues. These limitations are discussed in turn.

First, a limitation of the selected student engagement surveys is their lack of direct information about students' experiences of their enjoyment and interest in school learning (Archambault, Janosz, Morizot et al., 2009; Janosz et al., 2008). The present thesis combined features of two main lines of student engagement research: school dropout prevention research and motivation

research (Eccles & Wang, 2012). The SEI (Appleton et al., 2006), which was one of the main measures used in this thesis, was originally developed within the school dropout prevention research in which forms of contextual support from teachers, peers, and family (forming affective engagement) were treated as indicators of affective engagement (see *Study 1*). Theoretically, however, the thesis drew from the motivational engagement literature, in which sources of contextual support are viewed as *facilitators* rather than indicators of affective engagement (see *Studies 2 and 3*). In the present thesis, it is maintained that a fuzzy boundary, i.e., a lack of distinction between indicators and facilitators of engagement, is likely to lead to conceptual vagueness and difficulties disentangling and identifying the manifestations of engagement and the targets of intervention with regard to the context and the individual. Thus, to optimally and comprehensively capture the three-dimensional construct of student engagement and its facilitators, future studies should include items inviting students' perceptions of their enjoyment and interest in school learning and sense of school belonging as direct indicators of affective engagement.

Second, this thesis relied solely on students' self-reports, which means that the results may be biased due to the socially desirable responses (Paulhus, 1991). As far as the highly inferential aspects of student affective and cognitive engagement are concerned, however, self-reports may be the best data collection method available (Appleton et al., 2006). Future studies involving cross-validation of student-reports with teacher reports and parent reports might provide researchers with additional insights into students' engagement. Additionally, a mixed method approach (for example, combining surveys and in-depth interviews) would be a valuable addition through which to validate the findings gained from self-reports.

Third, the present study design was cross-sectional, which does not allow for examination of the developmental evolvement of student engagement, as suggested in the participation-identification model. Future studies should analyze longitudinal data sets (Li, 2011) in order to determine changes in student engagement over time. For example, person-centered latent transition analysis (Muthén & Muthén, 1998–2012) could reveal student transitions from one profile to another and provide information about the covariates that contribute to the transitions (for example, the intensity of support a student is provided with). As an alternative to group-level variable-centered analysis, this would add to our understanding of the unique mechanisms of individual development on student engagement in the reciprocal bi-directional relationship with the (school) environment (Magnusson & Törestad, 1993).

Fourth, the present study focused solely on students' engagement with school. Extending the focus to simultaneously encompass both the students' school and classroom level engagement – that is, linking students' engagement with the organization and activities within this organization – could reveal avenues for student engagement interventions (see Janosz, 2012). Enhanced classroom engagement is likely to contribute to enhanced school engagement,

and a powerful means for producing beneficial changes is to focus on teacher practices in terms of classroom quality (Pianta et al., 2012).[viii]

Fifth, by investigating the structure of affective and cognitive engagement using the SEI (Appleton et al., 2006), the present thesis took the initial steps in establishing the SEI-F's psychometric properties. Future studies should address this issue more comprehensively. For example, the measurement invariance of the SEI-F (see Li, 2011) should be confirmed to ensure that the SEI-F items are interpreted in a similar manner over time and across gender, and among students from different socio-economic backgrounds, students with and without special educational needs, students with and without immigrant background, and students studying at different grade levels. Measurement invariance of the measurement instrument is a necessary condition for fair and equal selection procedures when the purpose is screening of individuals for intervention (Borsboom, 2006). To address the above-mentioned limitations, along with the SEI-F cross-cultural invariance verification (see Ziegler & Bensch, 2013), further replication studies with multiple different samples are required. Moreover, information is needed concerning the SEI-F's sensitiveness as a monitoring instrument for intervention effectiveness and predictive validity. The sensitivity of the SEI-F needs to be established before it is possible to determine whether specific forms of student support contribute positively to student affective and cognitive engagement. Further, in line with Barrett's (2007) practical notion of *empirical adequacy*, the model fit should be evaluated in terms of its predictive accuracy with respect to theory-relevant-criteria (see also Roberts & Pashler, 2000). Consequently, future studies should examine the extent to which the SEI-F can be successfully used to predict students' school related outcomes (such as difficulties in completing the basic or secondary education).

6 CONCLUSIONS

The results of this thesis provided three main findings. The first is that the survey instrument of SEI-F, adapted for the first time for the Finnish lower secondary school setting, is a promising instrument for valid and reliable measurement of students' self-reported affective and cognitive subtypes of engagement. Second, three distinctive student engagement and school burnout profiles were identified that were meaningfully related to external variables. Finally, the analyses showed that, along with student background factors and relatively stable individual factors (such as self-esteem), alterable individual and contextual support factors can be identified that are related to student engagement.

Lower secondary school practitioners have lacked a clear, comprehensive, flexible theoretical framework for understanding and guiding students' behavior and academic achievement. Student engagement is a promising concept that attempts to bridge the theory–practice gap. It is practically rooted, easily generalized to a variety of educational situations, and is highly educationally relevant because of its documented positive associations with students' learning and overall well-being. The key ideas of student engagement are easily communicated to school personnel. Furthermore, student engagement directs practitioners' primary focus on the processes of fostering engagement - that is, developing engaging practices, improving the educational environment - instead of directly concentrating on students' outcomes (such as grades) or individual characteristics (such as deficits or traits). In the current educational decision making, practical wisdom and prior experiences appear dominate over scientific knowledge and evidence base (see Korthagen, 2007). It is argued that knowledge can often play a minor role in making decisions concerning an individual student's situation, classroom practices, or whole-school policies.[ix] The vision that led to this thesis was the introduction of a practical construct that is applicable within the Finnish schools for understanding students' behavior and academic performance, provides practitioners with targets for interventions, and is measureable. Student engagement is such a construct. Whether improving students' engagement will in the future school and in the application phase of the

new curriculum be identified as a core function and main goal in lower secondary schools remains to be seen. Providing systematic and intentional support, founded on information provided by validated tools and quantifiable data which are successful in fostering engagement of all students, holds promise for attempts to reduce the number of students (5%–10% according to Myrskylä, 2012; Official Statistics of Finland, 2014a, 2014b) experiencing school and post-school difficulties and building an engaging and participatory school.

YHTEENVETO

Oppilaan kouluun kiinnittyminen suomalaisessa yläkoulussa

Tämän tutkimuksen tavoitteena oli tarkastella yläkoulun oppilaiden itse raportoimaa kiinnittymistä kouluun. Kouluun kiinnittymisellä tarkoitetaan moniulotteista yleiskäsitettä, joka kuvaa lapsen tai nuoren toiminnallista koulun normeihin ja toimintakäytänteisiin sitoutumista, tunnetasolla yhteenkuuluvuuden, osallisuuden ja tuen saamisen kokemuksia ja oppimis- ja suoriutumistavoitteisiin liittyviä asenteita ja arvoja (vrt. myös kiinni-termin merkitys yhdessä tai yhtenäisenä olemiseen, Häkkinen & Lehtosalo, 2013)[x]. Ensinnä tutkimuksessa selvitettiin yhdysvaltalaisen tunneperäistä ja kognitiivista kouluun kiinnittymistä arvioivan mittarin (Student Engagement Instrument (SEI; Appleton ym., 2006) rakennetta ja soveltuvuutta arviointivälineeksi suomalaiseen yläkouluympäristöön. Seuraavaksi eroteltiin alaryhmäanalyysin avulla yläkouluun kiinnittymisen ja koulu-uupumuksen oppilasprofiileja. Lopuksi tunnistettiin oppilaiden kouluun kiinnittymiseen yhteydessä olevia tekijöitä. Tutkimus perustuu kahteen (N_1 = 2485, N_2 = 821) yläkoulun 7., 8. ja 9. luokan oppilailta kerättyyn kyselylomakeaineistoon. Kyselylomakkeen avulla selvitettiin oppilaan kokemuksia tuen saamisesta suhteissaan opettajiin, perheeseen ja vertaisiin sekä arvioitaan suhteessa koulutuksellisiin tavoitteisiin, koulunkäynnin merkityksellisyyteen, koulumenestykseen, omaan käyttäytymiseen, poissaoloihin, minäkuvaan, koulu-uupumukseen ja erityisopetukseen osallistumiseen. Muuttujakeskeisten tutkimusmenetelmien lisäksi käytettiin henkilökeskeisiä menetelmiä, jotta oppilaiden kouluun kiinnittymistä koskevaa tietoa saatiin sekä ryhmätasolla että yksilötasolla koskien oppilaiden yksilöllisiä profiileja.

Ensimmäisessä osatutkimuksessa tarkasteltiin, missä määrin oppilaan kouluun kiinnittymisen mittarin rakenne ja siihen liittyvät tulokset olivat kerätyssä suomalaisessa aineistossa yhtäpitäviä alun perin yhdysvaltalaisen, kouluun kiinnittymisen SEI-mittarin kanssa. Lisäksi tarkasteltiin, missä määrin tunneperäisen ja kognitiivisen kiinnittymisen yhteydet kriteerimuuttujiin ovat odotetun suuntaisia. Tulokset osoittivat, että suomalaisten yläkoululaisten vastaukset tunneperäistä ja kognitiivista kiinnittymistä koskeviin väittämiin noudattelivat pääpiirteittäin alkuperäistä mallin rakennetta. Tunneperäinen kiinnittyminen koostui kolmesta latentista ulottuvuudesta (taustalla olevasta faktorista): opettaja-oppilassuhteet, vertaissuhteet ja perheen antama tuki koulunkäynnille. Kognitiivinen kiinnittyminen puolestaan koostui kahdesta ulottuvuudesta: koulunkäynnin hallinta ja merkitys sekä tulevaisuuden tavoitteet ja päämäärät. Koulunkäynnin hallinta ja merkitys jakautui kolmeen alemman tason ulottuvuuteen. Mallista piti kuitenkin poistaa kaksi mitattua muuttujaa, mikä osoitti, että kouluun kiinnittymisen rakenteissa on myös kulttuurispesifejä piirteitä. Tulokset osoittivat edelleen, että suomenkielisen SEI-kyselyn rakenne voidaan tulkita vaihtoehtoisesti myös siten, että tunneperäinen ja kognitiivinen kiinnittyminen muodostavat kumpikin oman korkeamman kertaluvun ulottuvuuden. Viiden ulottuvuuden malli saattaa olla koulukontekstissa hyödyllisin, sillä se

antaa tarkkaa tietoa esimerkiksi interventioiden kohdentamisesta (esim. opettaja-oppilassuhteet, vertaissuhteet tai perheen tuki koulunkäynnille) ja niistä oppilaista, jotka eivät pidä koulunkäyntiä merkityksellisenä ja arvokkaana. Tutkijat voivat puolestaan hyödyntää kulttuurien välisissä vertailuissa kahden ulottuvuuden mallia, joka on todennäköisesti vähemmän kulttuurispesifi kuin viiden ulottuvuuden malli. Tunneperäinen ja kognitiivinen kiinnittyminen olivat positiivisesti yhteydessä oppilaiden toiminnalliseen kiinnittymiseen, minäkuvaan ja arvosanoihin sekä negatiivisessa yhteydessä oppilaiden kokemaan koulu-uupumukseen.

Toisessa osatutkimuksessa tunnistettiin kouluun kiinnittymisen ja koulu-uupumuksen perusteella muodostettuja oppilasprofiileja ja niitä selittäviä muuttujia. Analyysin perusteella voitiin erottaa kolme ryhmää: korkean kiinnittymisen ja matalan uupumisen ryhmä (40,6 % oppilaista), keskimääräisen kiinnittymisen ja uupumisen ryhmä (53,9 %) sekä heikon kiinnittymisen ja korkean uupumisen ryhmä (5,5 %). Tulokset osoittivat, että heikolta kouluun kiinnittymiseltä ja toisaalta koulu-uupumukselta suojaavia tekijöitä olivat oppilaan kokemus hyvistä opettaja-oppilassuhteista ja vahvasta perheen antamasta tuesta koulunkäynnille, hyvä koulumenestys, luvattomien poissaolojen puuttuminen, myönteinen minäkuva ja tavoite jatkaa peruskoulun jälkeen opintoja lukiossa. Edelleen tulokset osoittivat, että tytöt olivat poikia ja nuoremmat oppilaat vanhempia oppilaita kiinnittyneempiä kouluun. Myös perherakenne, jossa oppilas asuu toisen tai molempien vanhempiensa kanssa kotona, oli positiivisessa yhteydessä oppilaan kouluun kiinnittymiseen.

Kolmannessa osatutkimuksessa tarkasteltiin opettajien, perheen ja koulukavereiden antaman tunnetuen yhteyttä oppilaiden toiminnalliseen kiinnittymiseen ja luvattomiin poissaoloihin. Erityisen kiinnostuksen kohteena olivat oppilaiden toiminnallista kiinnittymistä selittävät tekijät, joista tuen kokemusten lisäksi tarkasteltiin muun muassa demografisia piirteitä (ikä, sukupuoli, perherakenne) ja oppilaan osallistumista erityisopetukseen. Tulokset osoittivat, että opettaja-oppilassuhteissa ilmenevä tuen saaminen ja perheen antama tuki koulunkäynnille olivat positiivisessa yhteydessä oppilaiden toiminnalliseen kiinnittymiseen, joka puolestaan oli negatiivisessa yhteydessä luvattomiin poissaoloihin. Vertaissuhteissa saadun tuen ja toiminnallisen kiinnittymisen välillä ei ollut yhteyttä. Positiivinen yhteys oppilaiden toiminnalliseen kiinnittymiseen oli myös hyvällä koulumenestyksellä, sukupuolella (tytöt ovat toiminnallisesti poikia paremmin kouluun kiinnittyneitä) ja perherakenteella siten, että ainakin toisen vanhemman kanssa asuminen on toiminnallisen kiinnittymisen kannalta edullisempaa kuin muut asumismuodot (kuten esim. laitosasuminen).

Kaiken kaikkiaan tulokset antavat verrattain myönteisen kuvan suomalaisten yläkoulun oppilaiden kouluun kiinnittymisen kokemuksista. He arvostavat koulunkäyntiä ja arvioivat omaa käyttäytymistään koulussa myönteisesti. Keskimäärin yläkoulun oppilaat eivät raportoineet koulu-uupumisen riskitasoja ylittäviä arvoja. Tulokset viittasivat kuitenkin siihen, että yläkouluissamme on noin 5 % oppilaita, joiden toiminnallinen ja kognitiivinen kouluun kiinnittyminen on heikkoa ja koulu-uupumus on korkea. Heillä on riski kohdata koulun-

käynnin vaikeuksia myös perusopetuksen jälkeen. SEI-F:n avulla voidaan tunnistaa heikosti kiinnittyneitä oppilaita ennen kuin kouluongelmat yläkoulussa näkyvät koulupoissaoloina tai koulupudokkuutena ja tunnistamisen perusteella rakentaa tukimuotoja. Opettaja-oppilassuhteiden laatuun kuten tunnetukeen ja oppimisen tukemiseen panostaminen on eräs vahvimmista tutkimuskirjallisuuden esiin nostamista keinoista tukea oppilaiden kiinnittymistä koulunkäyntiin yläkoulussa.

Kouluun kiinnittymisen käsitteistö antaa koulun henkilökunnalle teoreettisen käsitejärjestelmän syventää oppilaidensa tuntemusta sekä ymmärtää heidän käyttäytymistään ja menestymistään yläkoulussa. Tämä väitöskirja osoitti, että kouluun kiinnittyminen on yhteydessä muun muassa parempaan koulumenestykseen ja vähäisempään koulusta pinnaamiseen myös suomalaisessa yläkoulussa. Oppilaan kouluun kiinnittymisen edistäminen tulisikin mieltää yhdeksi koulun perustehtävistä. Tulevaisuudessa on tärkeää tutkia pitkittäisaineistojen avulla oppilaiden peruskouluun kiinnittymisen ennustearvoa koskien oppilaiden myöhempää menestymistä ja hyvinvointia koulu- ja työelämässä. Tutkimusta tulee kohdennetusti suunnata kiinnittymiseen vaikuttaviin tekijöihin eri oppilasryhmissä sekä tytöillä että pojilla, matalan ja korkean sosioemotionaalisen taustan omaaville oppilailla, eri tavoin tuetuilla oppilailla sekä maahanmuuttajataustaisilla oppilailla. Tällainen tieto on tarpeen sekä yksilöllisten oppilaan koulunkäynnin tukimuotojen suunnittelussa että kaikkien oppilaiden hyvinvoinnin ja osallisuuden vahvistamisessa.

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APPENDIXES

Appendix 1. Student Engagement Instrument (Appleton et al., 2006)

TS1	My teachers are there for me when I need them.
TS2	Adults at my school listen to the students.
TS3	The school rules are fair.
TS4	Most teachers at my school are interested in me as a person, not just as a student.
TS5	Overall, my teachers are open and honest with me.
TS6	Overall, adults at my school treat students fairly.
TS7	I enjoy talking to the teachers here.
TS8	At my school, teachers care about students.
TS9	I feel safe at school.
PS1	Other students here like me the way I am.
PS2	Other students at school care about me.
PS3	Students at my school are there for me when I need them.
PS4	Students here respect what I have to say.
PS5	I enjoy talking to the students here.
PS6	I have some friends at school.
FS1	My family/guardian(s) are there for me when I need them.
FS2	When something good happens at school, my family/guardian(s) want to know about it.
FS3	When I have problems at school my family/guardian(s) are willing to help me.
FS4	My family/guardian(s) want me to keep trying when things are tough at school.
CR1	After finishing my school work I check it over to see if it's correct.
CR2	Most of what is important to know you learn in school.
CR3	When I do school work I check to see whether I understand what I'm doing.
CR4	When I do well in school it's because I work hard.
CR5	The tests in my classes do a good job of measuring what I'm able to do.
CR6	Learning is fun because I get better at something.
CR7	What I'm learning in my classes will be important in my future.
CR8	The grades in my classes do a good job of measuring what I'm able to do.
CR9	I feel like I have a say about what happens to me at school.
FG1	Going to school after high school is important.
FG2	I plan to continue my education following high school.
FG3	School is important for achieving my future goals.
FG4	I am hopeful about my future.
FG5	My education will create many future opportunities for me.

Note. TS = teacher–student relationships; PS = peer support at school; FS = family support for learning; CR = control and relevance of school work; FG = future aspirations and goals.

Appendix 2. Oppilaan kouluun kiinnittymisen mittari (Appleton et al., 2006; suom. Virtanen, Nolvi, & Kuorelahti, 2010a)

TS1	Opettajani tukevat minua tarvittaessa.
TS2	Kouluni aikuiset kuuntelevat oppilaita.
TS3	Kouluni säännöt ovat oikeudenmukaiset.
TS4	Useimmat opettajat koulussani ovat kiinnostuneita minusta ihmisenä, eivät vain oppilaana.
TS5	Kaiken kaikkiaan opettajani ovat avoimia ja rehellisiä minua kohtaan.
TS6	Kaiken kaikkiaan aikuiset koulussani kohtelevat oppilaita reilusti.
TS7	Minusta on mukavaa jutella opettajieni kanssa.
TS8	Kouluni opettajat välittävät oppilaista.
TS9	Tunnen oloni turvalliseksi koulussa.
PS1	Toiset oppilaat pitävät minusta sellaisena kuin olen.
PS2	Muut oppilaat koulussani välittävät minusta.
PS3	Muut oppilaat koulussani tukevat minua tarvittaessa.
PS4	Toiset oppilaat arvostavat minun sanomisiani.
PS5	Pidän muiden oppilaiden kanssa juttelemisesta.
PS6	Minulla on joitakin kavereita koulussa.
FS1	Perheeni/huoltajani tukee minua tarvittaessa.
FS2	Kun koulussa tapahtuu jotakin hyvää, perheeni/huoltajani haluaa tietää siitä.
FS3	Kun minulla on ongelmia koulussa, perheeni/huoltajani haluaa auttaa minua.
FS4	Perheeni/huoltajani haluavat minun jatkavan yrittämistä, kun koulussa on vaikeaa.
CR1	Kun saan koulutehtävät valmiiksi, tarkistan, ovatko ne oikein.
CR2	Suurimman osan elämässä tärkeistä asioista opin koulussa.
CR3	Kun teen koulutehtäviä, tarkistan välillä, ymmärränkö mitä olen tekemässä.
CR4	Menestymiseni koulussa on kovan työn tulosta.
CR5	Kokeet mittaavat hyvin kouluosaamistani.
CR6	Oppiminen on hauskaa, koska kehityn asioissa.
CR7	Tunneilla oppimani asiat ovat tärkeitä minulle tulevaisuudessa.
CR8	Arvosanat mittaavat hyvin kouluosaamistani.
CR9	Koen, että voin vaikuttaa siihen, mitä minulle tapahtuu koulussa.
FG1	On tärkeää jatkaa opintoja peruskoulun jälkeen.
FG2	Aion jatkaa opintojani peruskoulun jälkeen.
FG3	Koulunkäynti on tärkeää, jotta saavuttaisin tulevaisuuden tavoitteeni.
FG4	Olen toiveikas tulevaisuuteni suhteen.
FG5	Opintoni tuottavat minulle useita mahdollisuuksia tulevaisuutta ajatellen.

Huom. TS = opettaja–oppilas-suhteet ; PS = vertaisten tuki oppimiselle; FS = perheen tuki koulunkäynnille; CR = koulutyön hallinta ja koulun merkitys; FG = tulevaisuuden koulutukselliset toiveet ja tavoitteet.

Appendix 3. Rochester Assessment Package for Schools: Ongoing Engagement with School Scale (RAPS; Wellborn & Connell, 1987)

RAPS1	I work very hard on my schoolwork.
RAPS2	I don't try very hard in school.
RAPS3	I pay attention in class.
RAPS4	I often come to class unprepared.
RAPS5	How important is it to you to do the best you can in school?

Appendix 4. Toiminnallinen kouluun kiinnittyminen –mittari (RAPS: Ongoing Engagement with School Scale; Wellborn & Connell, 1987; suom. Virtanen, Nolvi, & Kuorelahti, 2010b)

RAPS 1	Teen paljon töitä koulun eteen.
RAPS 2	En yritä kovinkaan paljon koulussa.
RAPS 3	Seuraan opetusta tunnilla.
RAPS 4	Oppitunnille tullessani minulla on usein kotitehtävät tekemättä tai kirja ja kynä kotona.
RAPS 5	Kuinka tärkeää sinulle on, että teet parhaasi koulussa?

Appendix 5. BBI10 (Salmela-Aro & Näätänen, 2005; short form from the Bergen Burnout Indicator 15; Näätänen, Aro, Matthiesen, & Salmela-Aro, 2003)

EXH1	I feel overwhelmed by my schoolwork.
CYN1	I feel a lack of motivation in my schoolwork and often think of giving up.
INAD1	I often have feelings of inadequacy in my schoolwork.
EXH2	I often sleep badly because of matters related to my schoolwork.
CYN2	I feel that I am losing interest in my schoolwork.
CYN3	I'm continually wondering whether my schoolwork has any meaning.
EXH3	I brood over matters related to my schoolwork a lot during my free time.
INAD2	I used to have higher expectations of my schoolwork than I do now.
EXH4	The pressure of my schoolwork causes me problems in my close relationships with others.
CYN4	I feel that I have gradually less to give in my studies (excluded from the nine-item School Burnout Inventory; SBI; Salmela-Aro et al., 2009)

Appendix 6. Nuorten koulu-uupumusmittari (BBI10; Salmela-Aro & Näätänen, 2005)

EXH1	Tunnen hukkuvani koulutyöhön.
CYN1	Tunnen itseni haluttomaksi opinnoissani ja ajattelen usein lopettaa opiskelun.
INAD1	Minulla on usein riittämättömyyden tunteita opinnoissani.
EXH2	Nukun usein huonosti erilaisten opiskeluasioiden takia.
CYN2	Minusta tuntuu, että olen menettämässä kiinnostukseni opiskelua kohtaan.
CYN3	Pohdin alituiseen, onko opiskelullani merkitystä.
EXH3	Murehdin opiskeluasioita paljon myös vapaa-aikana.
INAD2	Odotin ennen saavani opinnoissani paljon enemmän aikaan kuin nyt.
EXH4	Opiskelujen paine aiheuttaa ongelmia läheisissä ihmissuhteissani.
CYN4	Minusta tuntuu, että minulla on yhä vähemmän annettavaa opinnoissani. (tämä osio ei sisälly School Burnout Inventory -skaalaan; SBI; Salmela-Aro et al., 2009).

Appendix 7. Data 1: Correlations between Key Variables, Means, Standard Deviations, and Intraclass Correlations at School and Classroom Levels

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.
1. Gender[a]																			
2. Grade level	.03																		
3. Family socio-economic status	-.09***	-.04*																	
4. Family immigrant status[b]	.00	.01	-.07**																
5. Family structure	-.04	-.02	.13***	.00															
6. Special education status[b]	-.12***	-.01	-.02	.12***	-.07***														
7. Remedial support status[b]	.04	.11***	-.04	.11***	-.03	.39***													
8. Teacher-student relations	.02	-.12***	.10***	-.01	.10***	-.12***	-.11***												
9. Family support for learning	.04	-.05**	.15***	-.04*	.12***	-.12**	-.06*	.48***											
10. Peer support at school	-.01	.00	.19***	-.03	.08***	-.09**	-.06*	.37***	.37***										
11. Control and Relevance of School Work	.06**	-.14***	.14***	.03	.08***	-.15**	-.11**	.65***	.51***	.34***									
12. Future Aspirations and Goals	**.12*** **				**.08*** **		-.11***	.49***	.53***	.36***	.63***								
13. Affective engagement	.02	-.07***	**.19*** **		**.13*** **		-.10**	.80***	.80***	.74***	.65***	.60***							
14. Behavioral engagement	**.13*** **	-	**.09*** **		**.12*****	25***	-.16**	**.41*** **	.	**.15*** **	.		.39***						
15. Cognitive engagement	**.10*** **		**.14*** **		**.09*** **		-.12**	.63***	.57***	**.39*** **	.		**.68*** **	.5					
16. School burnout	.03	.04*	-.12***	**.05***	-.10	.22***	.19***	**-.38*** **	-	**-.22*** **	-	-.35***	**-.37*** **	-.36***	-				
17. Self-esteem	-.25***	.06**	**.20*** **		**.07*** **	-.	-.10***	**.30*** **	.	**.39*** **		**	**.43*** **	.		-.49***			
18. Academic performance	.19***	-.10***	.05*	-.04*	**.11*** **	-.	-.34***	**.22*** **	.	**.08*** **	.		**.21*** **	.		**-.29****	.14***		
19. Truancy from school[b]	.01	.17***	**-.08*** **		**-.11*** **		.20***	**-.31*** **	-	**-.09*** **	-.3		**-.28*** **	-		.30***	-.18***	-.30***	
M	**0.52**	2				0.18	**0.29**	2		3.12	**2.81**		**3.10**		**03**	3.1	2.73	**7.81**	0
SD	**0.50**	0				0.38	**0.45**	0		0.48	**0.47**		**0.38**		**43**	1.0	0.48	**1.07**	0
ICC_{school}	**.00**	.		.02**	.00	.02*	.05**	.03**	.01*	.02*	.01*	**.00**	.02	.00	**.00**	.	.00	**.03**	.
ICC_{class}	**.01**	.98*	.04**	**.09*** **		.28***	.13***	**.09*** **		**.04*** **		.03*	.07***	.01	.03*	**.04*** **		.10***	.09***

Appendix 8. Data 2: Correlations between Key Variables, Means, Standard Deviations, and Intraclass Correlations at School and Classroom Levels

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.
1. Gender[a]																			
2. Grade level	-.01																		
3. Family socio-economic status	-.09*	-.10**																	
4. Family immigrant status[b]	-.05	-.07*	-.06																
5. Family structure	-.01	-.03	.07*	-.06															
6. Special education status[b]	-.05	.07	-.11**	.17***	-.12**														
7. Remedial support status[b]	.08*	.13***	-.12**	.07	-.03	.33***													
8. Teacher-student relations	.01	-.15***	.10**	.01	.08*	-.05	-.07*												
9. Family support for learning	.03	-.15**	.14***	-.02	.06	-.10**	-.10**	.53***											
10. Peer support at school	**.08***	-	**.09***	-	.03	-.07*	-.02	.45***	.41***										
11. Control and Relevance of School Work	.03	-.16***	.15***	**.02**	.0	-.12***	-.09*	.70***	.54***	.39***									
12. Future Aspirations and Goals	.12**	-.02	**.11***		.04	-.13**	-.08*	**.47*****	.	**.35*****	.6								
13. Affective engagement	**.05**	-.15*	.14***	-.02	.07*	-.09*	-.08*	.82***	.81***	.77***	.68***	.56***							
14. Behavioral engagement	.18***	-.10**	**.13*****		.15***	-.20***	-.11**	**.39*****	.	**.18*****	.		.37***						
15. Cognitive engagement	.07*	-.11**	.15***	**.03**	.07	-.13*	-.09*	.66***	.59***	**.41*****	.		**.69*****	.5					
16. School burnout	-.01	.05	-.10**	**.04**	-.10	.18***	.19***	-.37***	-.32***	**-.26*****	-		**-.39*****	-.38***	-				
17. Self-esteem	-.19***	**.03**	.22*	-.02	.07	-.14***	-.14***	.32***	.32***	**.41*****	.		**.44*****	.		-.49***			
18. Academic performance	.19***	-.10**	.11**	-.07*	**.13*****	-.	-.29***	**.23*****	.	.11**	**.32*****	.	**.22*****	.4		-.33**	.20***		
19. Truancy from school[b]	.00	.20***	**-.11***		**-.11****	.	.13***	**-.21*****	-	-.08*	**-.23*****	-	-.21***	**-.35****		.27	-.15***	-.24***	
M	**0.49**	1				0.14	**0.25**	2		3.15	**2.86**		**3.12**		**09**	3.1	2.77	**7.96**	0
SD	**0.50**	0				0.35	**0.44**	0		0.48	**0.44**		**0.38**		**41**	1.0	0.44	**1.01**	0
ICC_{school}	**.00**	.		.05*	**.00**	.	**.00**	.04	.01	**.00**	.		**.02**	.		**.01**	.		.03
ICC_{class}	.00	.99***	.05	.16	.02	**.08**	**.1**			.04*	**.04****		**.08****		.03*	.05*	.02	.04	.07**

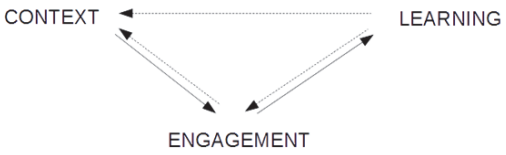
Note. Estimates are calculated for observed variables. [a]dummy coded (1 = girl). [b]dummy coded (1 = yes). *p < .001; **p < .01; ***p <.05. Two-tailed Pearson's *r*. *M* = Mean. *SD* = Standard deviation. ICC_{school} = School-level intraclass correlation. ICC_{class} = Classroom-level intraclass correlation.

ENDNOTES

i The term *commitment* originates from the Latin word *committere*, which means to "bring together, unite/join, connect/attach" (Latdict, 2002–2014).

ii Two recent Finnish studies, one with a combined sample of lower secondary and upper secondary school students (Salmela-Aro, & al., 2016) and the second with upper secondary school students (Tuominen-Soini & Salmela-Aro, 2014), found a group of students who were characterized as engaged-exhausted. These results suggest that engagement may sometimes take the form of over-engagement.

iii This view seems to imply a very simplified pattern of S ➔ O ➔ R, where context (S) affects students' learning and development (R) through student engagement (O). A transactional view (see Sameroff & Mackenzie, 2003), by contrast, would assume bidirectional relations between context, engagement, and learning.



Student engagement is an essential prerequisite for curriculum-driven learning and development to occur (note the missing direct relation from context to learning) (Finn & Zimmer, 2012). Engagement and educational context are in a reciprocal relationship, where students' engagement affects the context and is affected by the context (Skinner & Belmont, 1993). Further, given that teaching and learning (students' academic outcomes) can be regarded as evocative processes (see Nurmi & Kiuru, 2015), engagement impacts learning and learning is also supposed to affect students' engagement. Finally, learning affects the context by evoking responses from those acting in the context (teachers, family, and peers). Reeve (2013) suggests that this evocative impact is best described with the fourth dimension of engagement, namely agentic engagement. Agentic engagement is a proactive, intentional, collaborative, and constructive student-initiated pathway to greater achievement. When students express their preferences, ask questions, and let the teacher know what they like, need, and want, it contributes to the teacher creating a more motivationally supportive classroom environment. The change in classroom motivation support provided by the teacher, in turn, affects the change in the quality and quantity of students' engagement, improving student outcomes. This aligns well with the transactional view (Sameroff & Mackenzie, 2003) in describing dynamic aspects of interpersonal behavior.

iv According to Reschly and Christenson (2012), the third school of thought on student engagement is school reform perspective (National Research Council 2004). The school reform perspective builds on the idea that changes in students' engagement are connected to changes in their academic achievement.

v Person-centered methods imply more than one relatively independent categorical latent variable (continua) (see Bollen, 2002), whereas variable-centered methods imply unidimensional latent variable(s) (continuum) (cf. Borsboom, 2005).

vi The present study is committed to the tradition of scientific realism. Epistemologically scientific realism posits that good theories approximate empirically observable and unobservable aspects of the world. Thus, scientific realists argue that fallible knowledge from individual mental states and processes is possible (Niiniluoto, 1999). Latent variables are regarded as theoretical entities that exist independently of our measurement of it (Alvesson & Sköldberg, 2009; Borsboom, 2005). They are not directly observed, but rather inferred indirectly in terms of their observed correlated

effects (Haig, 2013; Hedstrom & Ylikoski, 2010). According to Borsboom (2005), it is meaningful to interpret latent variables as common causes for those observed effects that realize in the sample observed variables' values (Bollen, 2002; for opposing view, see Borsboom, Mellenbergh & Van Heerden, 2004; Magnusson & Törestad, 1993). It is noteworthy that critical realists also point out that there are no methodological criteria with which to choose the best explanation when the data support many equivalent explanations for unobservable entities (Boylan & O'Gorman, 1995). This means that many data-generating mechanisms can produce the same structure in the data as the hypothesized model (Ben-Menahem, 2006; Borsboom, 2005). This underdetermination of theory by empirical data (see Ben-Menahem, 2006) highlights the importance of (good) theories in the tradition of scientific realism (Töttö, 2004). In the present thesis, theories were employed in describing the possible underlying mechanisms explaining the study results (see Alvesson & Sköldberg 2009; Haig 2013; Hedstrom & Ylikoski 2010).

vii This is analogous with the long Finnish educational tradition in which high student learning results are achieved not by focusing on learning outcomes *per se*, but on equity and cooperation between individuals (Sahlberg, 2015).

viii This is in line with employee engagement literature suggesting that state engagement (being energetic and absorbed in work activities) is an antecedent of behavioral engagement in an organization (Macey & Schneider, 2008). It is noteworthy that behavioral engagement in employee engagement context focuses on an employee serving organizational objectives. Thus, engagement not only benefits the employee, but also the organization. This aspect of engagement deserves much more future attention in student engagement research since, as a member of a school community, a student has responsibilities to herself/himself but also to other members (peers, teachers, etc.) of a school community (Finnish National Board of Education, 2014).

ix According to Korthagen (2007), researchers produce knowledge that is different from the knowledge that enables teachers to deal effectively with educational problems. The formal knowledge produced by researchers is conceptual and has the potential for generalization, validity, and reliability. However, it may lack relevance for practitioners. The situated knowledge favored by teachers is perceptual, context-dependent, practical, and based on a teacher's prior experiences. From the scientific realistic point of view, the difference between the two forms of knowledge can be reduced to the difference between what constitutes the knowledge; that is, whether knowledge is about correspondence or practicality (see Niiniluoto, 1999).

x Englanninkielinen sana *engagement* voidaan suomen kielessä kääntää kiinnittymisen ohella sanalla *sitoutuminen*. Siinä missä suomen kielen sana kiinnittyminen viittaa johonkin ympäristöön kiinni kasvamiseen ja siihen kiintymiseen, sitoutumisella on enemmän yksilön tietoisen ryhtymisen ja sitoumuksen antamisen tai allekirjoittamisen sivumerkitys (Haarala, 2001; Kielitoimiston sanakirja, 2016). Lisäksi sanan kiinnittyminen voi nähdä viittaavan myös leikinomaisuuteen, innostumiseen ja vapaaehtoisuuteen, kun sen sijaan sitoutuminen on luonteeltaan velvoittavaa (vrt. sitoutuminen esimerkiksi sopimukseen). Mielestäni suomenkielinen termi *oppilaan kouluun kiinnittyminen* kuvaa *student engagement* -käsitteen kolmiulotteisuutta ja kytkeytymistä kouluympäristöön paremmin kuin yksilöön keskittyvä sitoutuminen, joka korostaa yksilön tahtotilaa ja tietoista päätöstä. Kannattaa huomata, että oppilas voi olla sitoutunut koulunkäyntiin olematta siihen tunneperäisesti kiinnittynyt (students who suffer in silence: Willms, 2003).

ORIGINAL PAPERS

I

ASSESSMENT OF STUDENT ENGAGEMENT AMONG JUNIOR HIGH SCHOOL STUDENTS AND ASSOCIATIONS WITH SELF-ESTEEM, BURNOUT AND ACADEMIC ACHIEVEMENT

by

Virtanen, T.E., Kiuru, N., Lerkkanen, M-K., Poikkeus, A-M., & Kuorelahti, M., (2016)

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Tuomo E. Virtanen, Noona Kiuru, Marja-Kristiina Lerkkanen,
Anna-Maija Poikkeus & Matti Kuorelahti

Assessment of student engagement among junior high school students and associations with self-esteem, burnout, and academic achievement

Abstract

The aim of the study was to investigate the structure of affective and cognitive engagement using the Student Engagement Instrument (SEI; Appleton, Christenson, Kim, & Reschly, 2006) and to examine the associations to behavioral engagement, as well as student-reported self-esteem, burnout, and academic achievement among Finnish junior high school students. The analyses were carried out in the main sample of 2,485 students, as well as in an independent sample of 821 students. The results showed that the original five-factor structure of the SEI construed along three affective and two cognitive engagement factors fit the current data relatively well. Affective and cognitive student engagement correlated positively with an independent measure of behavioral engagement. Furthermore, affective and cognitive engagement were positively associated with student-reported self-esteem and academic achievement, and negatively with school burnout. The findings provided corroborating evidence for the psychometric properties and utilization of the SEI instrument for assessing the engagement of junior high school students.

M.A.E. Tuomo E. Virtanen (corresponding author) · Prof. Dr. Marja-Kristiina Lerkkanen · Prof. Dr. Anna-Maija Poikkeus, Department of Teacher Education, University of Jyväskylä, P.O. Box 35, FI-40014, Finland
e-mail: tuomo.e.virtanen@jyu.fi
marja-kristiina.lerkkanen@jyu.fi
anna-maija.poikkeus@jyu.fi

Dr. Noona Kiuru, Department of Psychology, University of Jyväskylä, Finland
e-mail: noona.h.kiuru@jyu.fi

Dr. Matti Kuorelahti, Department of Education, Special Education, University of Jyväskylä, Finland
e-mail: matti.kuorelahti@jyu.fi

Keywords
Affective engagement; Cognitive engagement; Behavioral engagement; Student-Engagement-Instrument

Untersuchung des Zusammenhangs von Student Engagement mit Selbstwertgefühl, Burnout und Schulleistung bei Schülerinnen und Schülern der Mittelstufe

Zusammenfassung
Ziel der Studie war es, die Struktur von affektivem und kognitivem Engagement unter Nutzung des Student Engagement Instruments (SEI; Appleton, Christenson, Kim & Reschly, 2006) sowie die Verbindungen zu verhaltensbezogenem Engagement, Selbstwertgefühl, Burnout und Schulleistung unter Schülerinnen und Schülern der Mittelstufe in Finnland zu untersuchen. Die Analysen wurden mit einer Hauptstichprobe von 2485 Schülerinnen und Schülern sowie mit einer unabhängigen Stichprobe von 821 Schülerinnen und Schülern durchgeführt. Die Ergebnisse zeigen, dass die ursprüngliche Fünf-Faktoren-Struktur des SEI mit drei affektiven und zwei kognitiven Engagement-Faktoren die vorliegenden Daten am besten abbildet. Affektives und kognitives Student Engagement korrelierten positiv mit einer unabhängigen Messung von verhaltensbezogenem Engagement. Darüber hinaus wurde für affektives und kognitives Engagement ein positiver Zusammenhang mit dem von den Schülerinnen und Schülern selbstberichteten Selbstwertgefühl und ihrer Schulleistung sowie ein negativer Zusammenhang mit Schul-Burnout festgestellt. Die Befunde bekräftigen die Eignung des SEI als psychometrisches Instrument zur Messung von Student Engagement von Schülerinnen und Schülern der Mittelstufe.

Schlagworte
Affektives Engagement; Kognitives Engagement; Verhaltensbezogenes Engagement; Student-Engagement-Instrument

1. Introduction

Student engagement has been characterized as a composite of psychological processes, involving the attention, investment, and effort expended by students in their school work (Marks, 2000). Engagement has been linked with many desired schooling outcomes such as academic success (Fredricks, Blumenfeld, & Paris, 2004; Skinner, Furrer, Marchand, & Kindermann, 2008; Wang & Holcombe, 2010), and school completion (Archambault, Janosz, Fallu, & Pagani, 2009; Finn, 1989; Rumberger & Lim, 2008). Engagement is widely acknowledged to be a multi-

factoral *meta construct* (Fredricks et al., 2004). Most typically three dimensions or subtypes are included in conceptualizing student engagement. The affective (psychological) subtype refers to partly overlapping constructs such as a sense of school belonging and feelings of being accepted by teachers and classmates and receiving support from them (Appleton et al., 2006; Finn, 1989; Finn, 1993; Fredricks et al., 2004; Libbey, 2004). The cognitive subtype of engagement captures the extent to which individuals are motivated, plan, monitor, and regulate their cognition, and value education (Fredricks et al., 2004; Libbey, 2004). The behavioral subtype of engagement is described in terms of observable indicators (Jimerson, Campos, & Greif, 2003) such as attentiveness, school compliance (Wang & Eccles, 2012), and school attendance (Archambault, Janosz, Morizot, & Pagani, 2009).

One of the most widely known measures of engagement is the Student Engagement Instrument (SEI; Appleton et al., 2006), which is a self-report scale for measuring students' affective and cognitive engagement with school. The SEI was developed in the United States (US), and accumulating evidence has been gathered for its utility and validity across multiple North American populations (Betts, Appleton, Reschly, Christenson, & Huebner, 2010; Carter, Reschly, Lovelace, Appleton, & Thompson, 2012; Reschly, Betts, & Appleton, 2014). Thus far, only one study has been conducted in another cultural context by Moreira, Vaz, Dias, and Petracchi (2009) using a sample of Portuguese students. The number of factors reported in prior studies for the SEI varies depending on the subject populations. The first large-scale study by Appleton et al. (2006) carried out among an ethnically and economically diverse urban sample of US ninth grade students reported a structure in which the 35 SEI items loaded on three affective engagement factors (Teacher-Student Relationships, Family Support for Learning, and Peer Support at School), and three cognitive engagement factors (Future Aspirations and Goals, Control and Relevance of the School Work, and Extrinsic Motivation). A further study by Betts and colleagues (2010) among US middle and high school students indicated that the reliability of the Extrinsic Motivation factor may be compromised because of two reverse-scored items, and in subsequent analyses, the Extrinsic Motivation factor has been excluded (Betts et al., 2010; Reschly et al., 2014). Some researchers (Carter et al., 2012; Grier-Reed, Appleton, Rodriguez, Ganuza, & Reschly, 2012) have favored a four-factor solution of the SEI, which excludes both the Extrinsic Motivation factor and the Control and Relevance of the School Work factor due to the latter factor's item redundancies with other factors.

Most of the research on student engagement has focused on observable behavioral indicators of engagement (see Appleton et al., 2006) or has combined various factors of engagement to form a single, global scale (Marks, 2000), and the more inferential, not easily observable subtypes of affective and cognitive engagement are targeted less often, although they have been shown to be related to valued outcomes of schooling (e.g., Finn, 1989). The need for a theoretically sound and psychometrically strong instrument for the assessment of affective and cognitive engagement is evident. Systematic data collected with such an instrument would be useful for the early identification of students with low affective and/or cognitive

student engagement, and classrooms with collective low engagement. Given that changes in students' behavior are expected to be preceded by changes in affective and cognitive engagement (see Li, Lerner, & Lerner, 2010; Walker & Greene, 2009; Wang & Holcombe, 2010), this would allow educators to plan tailored interventions at an early stage of low engagement before school-related problems escalate.

The SEI provides practitioners and researchers information of the affective and cognitive subtypes of engagement which are not easily observable for educators. However, its psychometric properties are not widely studied outside the US school contexts (for an exception, see Moreira et al., 2009). The nature of student engagement and the strength of its relationship to achievement may vary somewhat depending on the cultural context and the specific features of the educational system (e.g., the age of transitioning to subject teacher instruction, the extent to which the group composition varies from one subject to another, the extent to which extracurricular activities take place in stable groups, and the availability of support for wellbeing and group processes). In this study, the factors composing student engagement and psychometric properties of the SEI were examined for the first time among Finnish students and in Northern Europe. The engagement of Finnish students is of specific interest because of their high achievement in the 15-year-old students' Programme for International Student Assessment (PISA; OECD, 2013) of scholastic performance in mathematics, science, and reading. Virtually, all schools in Finland are public schools with very homogeneous curricula and teacher qualifications. Comparing the strucure of student engagement across cultures may have important implications for cross-cultural comparison studies and understanding the manifestation of school engagement in different populations (Moreira et al., 2009).

The present study examined whether using the SEI (Appleton et al., 2006) in the Finnish junior high school context (Grades 7–9, 13–15-year-old students) produces a similar structure of engagement as in the US context, and whether it is related in the expected way to student-reported self-esteem, burnout, and academic achievement, as well as behavioral engagement. Specifically, we examined (a) whether the SEI captures the subtypes of affective and cognitive engagement (construct validity), (b) whether the SEI factorial structure holds when cross-validated with an independent Finnish junior high school student sample, (c) whether the SEI affective and cognitive engagement relates in a meaningful way to factors known to be associated with student engagement (concurrent validity), and (d) whether the SEI proves reliable when assessing Finnish junior high school students (item and scale reliability). The associations between behavioral engagement and affective and cognitive engagement were analyzed to test the three-component model of engagement (Fredricks et al., 2004) with conceptually distinct but positively correlating affective, cognitive, and behavioral subtypes of engagement. Student gender, grade level, academic achievement, self-esteem, and school burnout were chosen as criterion variables for concurrent validity analyses, based on the consistent reports in the engagement literature showing that girls (e.g., Covell, 2010), younger students (e.g., Wang & Eccles, 2012), and academically high-

performing students (e.g., Haapasalo, Välimaa, & Kannas, 2010) are more engaged than boys, older students, and students with lower academic achievement. Furthermore, higher levels of self-esteem (e.g., Ma, 2003) have been found to relate to higher levels of student engagement, while school burnout relates negatively with engagement (see Salmela-Aro, Kiuru, Leskinen, & Nurmi, 2009).

2. Method

2.1 Participants and procedure

2.1.1 Sample 1

Before collection of the data between December 2012 and January 2013, the principals of eight Finnish-speaking junior high schools in four towns were briefed about the purpose of the study. The schools were typical public schools – five were located in Northern Finland and three in Western Finland. Students were from relatively similar ethnic and economic backgrounds. Following the guidelines of the Finnish National Advisory Board on Research Ethics (2009), the schools distributed a letter to the children's parents or guardians in which the nature of the study was explained, along with the procedure for withdrawing their child from participation. Teachers were advised about how to collect the data from the students, and the students responded anonymously and voluntarily to the questionnaire. Two schools favored the Internet-based questionnaire (N = 650), and in the remaining six schools, the students filled in the paper version (N = 1,835). The response rate was 86.3 %. Sample 1 comprised 2,485 students (females 52.2 %), of whom 35.9 % were ninth graders, 32.2 % were eighth graders, and 31.9 % were seventh graders. The students' mean age was 14.7 years (SD = .92). The percentage of missing values on SEI variables varied between 0.90 and 4.70 (M = 2.59 %, SD = 0.92 %).

2.1.2 Sample 2

In November and December 2010, another independent data collection was carried out in seven junior high schools from Western Finland. The principals randomly selected half of the classes in their schools to participate in the study. Teachers informed the students' parents about the purpose of the study, and parents were asked for written consent allowing their children to participate. In all, 85.0 % of the students responded to the questionnaire. The sample comprised 821 students (females 49.0 %). By grade level, the sample composition was 32.0 % ninth graders, 31.3 % eighth graders, and 36.7 % seventh graders. The students' mean age was 14.4 years (SD = .92). All the students responded by means of the Internet-based questionnaire. The percentage of missing values on SEI variables varied between 0.50 and 2.70 (M = 1.19 %, SD = 0.48 %).

2.2 Measures

2.2.1 The Student Engagement Instrument

First, the SEI (Appleton et al., 2006) was translated into Finnish by a certified translator. Second, the questionnaire was piloted in an urban junior high school in order to gain user feedback. Third, taking into account the students' feedback from the pilot, minor language revisions were made. Finally, the Finnish SEI was back-translated into English, and this translation was compared with the original English version by Appleton et al. (2006). The items were rated on a 4-point scale (1 = *strongly agree*; 4 = *strongly disagree*). Before the analyses the items were reverse-coded so that higher scores indicated a higher level of engagement. In the present study, the SEI structure with five interrelated factors was examined whereby Teacher-Student Relationships, Peer Support at School, and Family Support for Learning were assumed to capture different aspects of affective engagement, while Control and Relevance of the School Work and Future Aspirations and Goals were assumed to capture cognitive engagement. The values of Cronbach's alpha (α) for the original SEI validation study varied between .72 (Family Support for Learning) and .88 (Teacher-Student Relationships) (Appleton et al., 2006). The SEI items are given in Appendix A.

2.2.2 Student characteristics

Gender was entered as a dummy-coded variable (0 = female) and *grade level* as an ordinal variable (0 = seventh; 1 = eighth; 2 = ninth).

2.2.3 Self-esteem

Students' self-esteem was assessed using the Rosenberg Self-Esteem Scale (Rosenberg, 1965). The scale consisted of five items with positively-worded statements (e.g., "On the whole, I am satisfied with myself"), and five items with negatively worded statements (e.g., "At times, I think I am no good at all"). Items were answered on a 4-point scale (1 = *strongly agree;* 4 = *strongly disagree*). Before the analyses the items were reverse-coded so that higher scores indicated higher self-esteem. A total score of self-esteem was used in the analyses. The Cronbach's α for the scale was .83.

2.2.4 School burnout

Students' level of school burnout was measured using the Adolescents' Burnout Inventory (Salmela-Aro & Näätänen, 2005), which assesses students' school-related exhaustion (four items, e.g., "I feel overwhelmed by my school work"), cynicism (three items, e.g., "I feel a lack of motivation in my school work and often think of giving up"), and inadequacy (three items, e.g., "I often have feelings of inadequacy in my school work"), using a 6-point Likert scale (1 = *completely agree*; 6 = *completely disagree*). The items were reverse-coded so that higher scores indicated a higher level of school burnout. A total score of burnout was used in the analyses. The Cronbach's α for the scale was .91.

2.2.5 Academic achievement

Academic achievement was assessed using the grade point average which was calculated based on students' self-reported grades for three subjects – Literacy, Mathematics, and English. The Cronbach's α for academic achievement was .81.

2.2.6 Behavioral engagement

Behavioral engagement was measured using the middle school student version of the Research Assessment Package for Schools (RAPS-SM; Wellborn & Connell, 1987). In the present study, four items (two positively and two negatively worded) measuring behavioral engagement (e.g., "I work very hard on my school work," "I don't try very hard in school") rated on a 4-point scale (1 = *strongly agree;* 4 = *strongly disagree*) were used. The items were reverse-coded so that higher scores indicated higher engagement. A total score was used in the analyses. The Cronbach's α for the scale was .71.

2.3 Analysis strategy

The analyses were conducted with Mplus Version 7.11 (Muthén & Muthén, 1998–2015), using a mean- and variance-adjusted weighted least squares approach (WLSMV), which, according to Brown (2006), is the best choice for categorical data modeling in confirmatory factor analysis. Little's Missing Completely at Random (MCAR) was tested, which showed that missingness was not completely random: $\chi^2(232) = 453.417$; $p < .001$. Consequently, the missing values were imputed with *Mplus*. The Bayesian multiple-imputation method (Rubin, 1987) averages the parameter estimates over the set of analyses (10 imputed data sets), and computes standard errors using the average of the standard errors over the set of analyses and the between-analysis parameter estimate variation.

The analyses were carried out according to the following four-step procedure. First, the SEI construct validity was tested with Sample 1 using confirmatory factor analysis. Confirmatory factor analysis was chosen because the SEI has an established theoretical basis (Kline, 2013) with three factors consistently representing the affective subtype and two or three factors the cognitive subtype. In order to analyze whether the SEI captures the subtypes of affective and cognitive engagement, five theory-based competing models were specified and tested against each other. The models were: (a) one-factor model where all items formed a global student engagement factor (M1); (b) two-factor model where affective engagement items formed one factor and cognitive engagement items formed a second factor (M2); (c) replication of the SEI five-factor model (Betts et al., 2010; Reschly et al., 2014) with three affective engagement factors (Teacher-Student Relationships, Peer Support at School, and Family Support for Learning) and two cognitive engagement factors (Control and Relevance of the School Work and Future Aspirations and Goals) (M3); (d) an alternative five-factor model with Control and Relevance of the School Work divided into three sub-factors (M4a); and, finally, (e) a model with two second-order factors, five first-order factors, and Control and Relevance of the School Work divided into three sub-factors (M4b).

Second, the results were cross-validated (model M5) with an independent sample (Sample 2) of Finnish junior high school students by means of confirmatory factor analysis. Third, associations between the SEI affective and cognitive engagement subtypes and the other measures were analyzed by means of path analysis in order to examine concurrent validity of the SEI. Fourth, scale and item reliability information (Bollen, 1989) of the SEI was examined.

The goodness-of-fit of the estimated models was evaluated according to the following absolute goodness-of-fit indicators: Chi square (χ^2) and root mean square error of approximation (RMSEA). If χ^2 = ns ($p > .05$), the model is a good fit (Byrne, 2012). In turn, if RMSEA < .08, the error of approximation can be considered reasonable (Browne & Cudeck, 1993), whereas if RMSEA < .06, there is a relatively good fit between the hypothesized model and the observed data. Because the χ^2-test is sensitive to sample size, the use of relative goodness-of-fit indices is also strongly recommended in the case of large sample sizes (Bentler & Bonett, 1980), as in our study ($n > 2{,}000$ in the main sample, $n > 800$ in the validation sample). Consequently, the following relative goodness-of-fit indices were also used to evaluate model fit: (a) comparative fit index (CFI) and (b) Tucker-Lewis index (TLI). Hu and Bentler (1999) have suggested that if the values of CFI and TLI are close to .95, the model fits the data reasonably well. Weighted root mean square residual (WRMR) is not reported, because it has been shown to perform poorly when estimating categorical data (Yu, 2002).

3. Results

3.1 Item correlations

The Sample 1 data between-item Spearman's rho raw score correlations were statistically significant at $p < .001$ with one exception (item CR1 with item PS5 $\rho = .058$, $p = .004$). Within-factor item correlations were medium to large in magnitude (Cohen, 1988).

3.2 Construct validity

Examination of the models M1 (one-factor model), M2 (two-factor model), and M3 (replication of the original SEI model) indicated that two of the 33 SEI items (item TS9, "I feel safe at school," and item CR9, "I feel like I have a say about what happens to me at school") discriminated the factors poorly. These items had cross-loadings (i.e., they had high factor loadings on more than one factor). Modification indices (MI; Muthén & Muthén, 1998–2015) indicated that the goodness-of-fit of the M2 model would significantly improve if item CR9 hypothesized to load on the cognitive engagement factor would also be allowed to load on affective engagement (MI = 528.52). Furthermore, modification indices indicated that the goodness-of-fit for the M3 model would significantly improve if item TS9 was allowed to load not only on Teacher-Student Relationships, but also on Peer Support at School (MI = 1,134.89) and Family Support for Learning (MI = 454.11). Furthermore, modification indices suggested that the M3 model would be improved, if item CR9 hypothesized to measure Control and Relevance of School Work would also be allowed to load on Teacher-Student Relationships (MI = 352.97). Because the items TS9 and CR9 loaded strongly not only on the hypothesized factors but also cross-loaded on some other factors (standardized loadings ≥ .43), they contributed substantively to the models' misfit and, thus, were excluded from subsequent analyses. These two excluded items also showed poor psychometric properties in the Portuguese study (Moreira et al., 2009).

After omitting the two items (TS9 and CR9), M1 (one-factor model) yielded poor fit (see Table 1 for model fit indices). Even though the chi-square difference test showed that M2 (two-factor model) fit the data better than the M1 model ($\chi^2(1) = 1{,}309.70$; $p < .001$), the M2 model did not fit the data well. The M3 model (replication of the original five-factor SEI) yielded a better fit than the two-factor model M2 ($\chi^2(9) = 3{,}041{,}25$; $p < .001$), and the fit indices were acceptable. However, four (Teacher-Student Relationships, Peer Support at School, Family Support for Learning, and Future Aspirations and Goals) out of the five engagement factors formed theoretically cohesive scales, but in line with some earlier studies, the Control and Relevance of the School Work factor had problems in its psychometric properties (Carter et al., 2012; Grier-Reed et al., 2012). Specifically,

Table 1: Fit indices for the estimated models

Model	Sample	*N*	Number of factors	Number of items	χ^2	*df*	*p*	RMSEA	CFI	TLI
M1: One-factor model	Sample 1	2,485	1	31	22,665.54	434	< .001	.14	.63	.60
M2: Two-factor model	Sample 1	2,485	2	31	17,638.78	433	< .001	.13	.71	.69
M3: Replication of the original SEI five-factor structure	Sample 1	2,485	5	31	5,135.94	424	< .001	.07	.92	.91
M4a: Five-factor model, Control and Relevance of the School Work divided into three sub-factors	Sample 1	2,485	5 + 3	31	3,830.29	421	< .001	.06	.94	.94
M4b: Two second-order factors, five first-order factors, and Control and Relevance of the School Work divided into three sub-factors	Sample 1	2,485	2 + 5 + 3	31	4,199.95	425	< .001	.06	.94	.93
M5: Cross-validation of the M4a model with an independent sample	Sample 2	821	5 + 3	31	1,421.07	421	< .001	.05	.96	.95

Note. RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index.

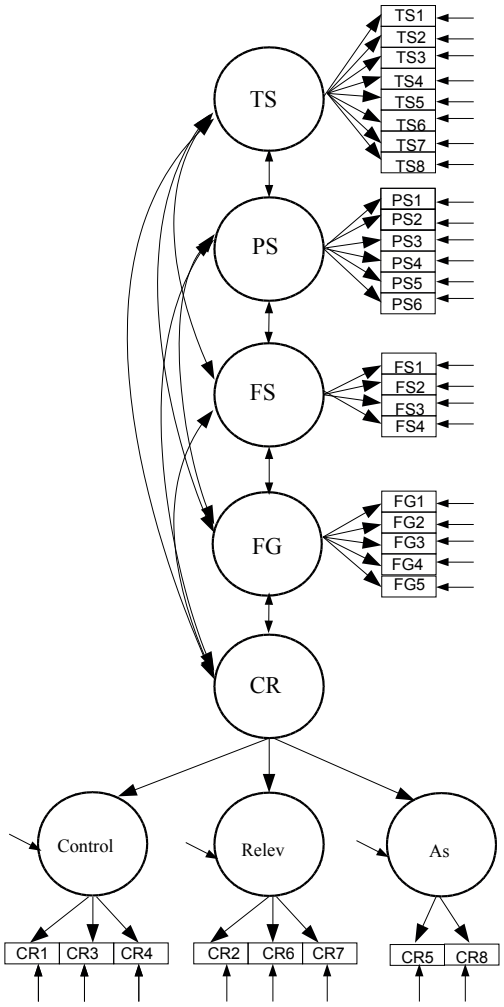
two items measuring the Control and Relevance of the School Work factor (CR5: "The tests in my classes do a good job of measuring what I'm able to do," CR8: "The grades in my classes do a good job of measuring what I'm able to do") had a large item residual correlation (.25), implying that they share unique variance not accounted for by the Control and Relevance of the School Work factor. Consequently, the Control and Relevance of the School Work factor was omitted from the model, and the remaining four-factor model was estimated. The fit of the four-factor model was relatively good: $\chi^2(224) = 2693{,}53$; $p < .001$; RMSEA = .07; CFI = .95; TLI = .94 (see also Carter et al., 2012; Grier-Reed et al., 2012). As implicated by the original title student-perceived control and relevance of school work may partly capture different aspects within the Control and Relevance of the School Work factor. Omitting the Control and Relevance of the School Work factor may not, however, be an optimal solution because it would leave out an important component of cognitive engagement.

In the subsequent, model M4a, three factors (Teacher-Student Relationships, Peer Support at School, and Family Support for Learning) represented the affective subtype of engagement. Cognitive engagement was represented by Future Aspirations and Goals and Control and Relevance of the School Work, but the latter was specified as a higher-order factor measured by Control of the School Work (three items), Relevance of the School Work (three items), and Validity of Student Assessment sub-factors (two items). This model fit the data relatively well. The chi-square difference test showed that the M4a model fit was better than the fit of the M3 model (replication of the original five-factor SEI structure): $\chi^2(3) = 730{,}42$; $p < .001$.

Finally, we estimated model M4b with two second-order factors, namely affective (Teacher-Student Relationships, Peer Support at School, and Family Support for Learning) and cognitive engagement (Control and Relevance of the School Work and Future Aspirations and Goals). The model with two highly correlated second-order factors (latent correlation .95) showed a relatively good fit to the data. The chi-square difference test indicated that the M4a model (five-factor model, Control and Relevance of the School Work divided into three sub-factors) fit the data better than the M4b model with two second-order factors, five first-order factors, and Control and Relevance of the School Work divided into three sub-factors: $\chi^2(4) = 171{,}91$; $p < .001$.

These results suggest that two models describe well the structure of the SEI in the Finnish high school student sample. The first is a five-factor model (M4a) which includes three affective engagement factors (Teacher-Student Relationships, Peer Support at School, and Family Support for Learning), and two cognitive engagement factors (Control and Relevance of the School Work and Future Aspirations and Goals). The second is the M4b model with two second-order factors where affective and cognitive engagement form second-order factors and the five factors are first-order factors. In both models, Control and Relevance of the School Work factor is measured by Control of the School Work, Relevance of the

Figure 1: Model M4a (five-factor model) of Student Engagement Instrument



Notes: All estimates are statistically significant at $p < .001$ (see Table 3 for estimates).
TS = Teacher-Student Relationships; PS = Peer Support at School; FS = Family Support for Learning; FG = Future Aspirations and Goals; CR = Control and Relevance of the School Work; Control = Control of the School Work; Relev = Relevance of the School Work; As = Validity of Student Assessment.

School Work, and Validity of Student Assessment sub-factors. A graphical presentation of the best fitting five-factor model M4a is presented in Figure 1.

The M4a model's factor correlations ranged between .37 (Teacher-Student Relationships with Peer Support at School) and .81 (Control and Relevance of the School Work with Future aspirations and Goals) (see Table 2).

3.3 Cross-validation

Model M4a was cross-validated with the independent Validation Sample 2. The cross-validation showed that the five-factor model with Control and Relevance of the School Work divided into three sub-factors fit the Sample 2 data well. The fit indices of the cross-validation model M5 were as follows: $\chi^2(421) = 1{,}421.07$; $p < .001$; RMSEA = .05; CFI = .96; TLI = .95 (see Table 1).

Table 2: Model M4a factor correlations

Factor	TS	PS	FS	CR
PS	.37***			
FS	.58***	.46***		
CR	.77***	.38***	.66***	
FG	.57***	.43***	.68***	.81***

Note. TS = Teacher-Student Relationships; PS = Peer Support at School; FS = Family Support for Learning; CR = Control and Relevance of the School Work; FG = Future Aspirations and Goals.

***$p < .001$.

Table 3 reports the factor loadings and reliability coefficients across the two independent samples. A similar pattern of coefficients was found across the samples. Out of 31 items, 27 reached the standardized loading of at least .70 in both samples. The loadings of items representing Control of the School Work sub-factors were satisfactory (ranging between .50 and .72). The standard errors of the factor loadings were small (.01–.02), suggesting stable estimates.

Factor-score scale reliabilities and Cronbach's α coefficients were computed separately for each factor across the two independent samples. For computing factor-score scale reliabilities, the regression method was applied. Table 3 reveals similar reliability and validity patterns across the samples. Factor-score reliabilities and Cronbach's α coefficients were typically greater than .80 (see Table 3). Control and Relevance of the School Work sub-factors were the least reliable. This is partly caused by the small number of items (two or three) measuring the sub-factors. The majority of the item reliabilities exceeded the level of .50, indicating that more than half of the indicator variance was explained by the factor (Kline, 2013). In general, Cronbach's α coefficients were slightly better than in the original SEI validation study (Appleton et al., 2006). Except for the Control of the School Work, squared standardized loadings showed acceptable or good item reliability.

Table 3: Five-factor model M4a scale and item reliability information and standardized factor loadings in two independent samples (Sample 1/Sample 2)

	RelFS	α	R^2	λ
Teacher-Student Relationships	.90/.88	.88/.86		
TS1			.53/.56	.73/.75
TS2			.58/.58	.76/.76
TS3			.56/.50	.75/.71
TS4			.45/.41	.67/.64
TS5			.66/.71	.81/.84
TS6			.67/.62	.82/.79
TS7			.49/.41	.70/.64
TS8			.71/.67	.84/.82
Peer Support at School	.87/.88	.84/.86		
PS1			.64/.69	.80/.83
PS2			.79/.79	.89/.89
PS3			.71/.79	.84/.89
PS4			.62/.62	.79/.79
PS5			.49/.53	.70/.73
PS6			.49/.52	.70/.72
Family Support for Learning	.80/.80	.78/.80		
FS1			.59/.61	.77/.78
FS2			.55/.66	.74 /.81
FS3			.66/.67	.81 /.82
FS4			.64/.62	.80 /.79
Control and Relevance of the School Work				
Control of the School Work	.67/.64	.64/.58		
CR1			.44/.46	.66/.68
CR3			.52/.52	.72/.72
CR4			.36/.25	.60/.50
Relevance of the School Work	.76/.77	.73/.70		
CR2			.50/.49	.71/.70
CR6			.58/.50	.76/.71
CR7			.61/.62	.78/.79

Table 3 continues

Table 3 continued

	RelFS	α	R^2	λ
Validity of Student Assessment	.78/.76	.78/.75		
CR5			.69/.59	.83/.77
CR8			.81/.83	.90/.91
Future Aspirations and Goals	.83/.82	.81/.81		
FG1			.64/.69	.80/.83
FG2			.62/.58	.79/.76
FG3			.67/.66	.82/.81
FG4			.61/.61	.78/.78
FG5			.64/.66	.80/.81

Note. The first figure represents the values of Sample 1, and the second, the values of Sample 2. RelFS = Factor-score reliabilities; α = Cronbach's alpha coefficient; R^2 = Item reliability; λ = Standardized factor loading. All standardized factor loadings are significant at $p < .001$.

3.4 Concurrent validity

Finally, the associations between the affective and cognitive engagement subtypes and students' self-esteem, burnout, academic achievement, behavioral engagement, grade level, and gender were examined in Sample 1. The results are presented in Table 4.

Table 4: Associations between the affective and cognitive engagement subtypes and the criterion variables in Sample 1

Sub-type	Self-esteem	School Burnout	Academic achievement	Behav. engmt	Grade	Gender
Affective	.39***	-.23***	.09***	.23***	-.12***	-.12***
Cognitive	.24***	-.20***	.23***	.20***	-.04^{ns}	-.14***

Note. Estimates are standardized path coefficients. Behav.engmt = Behavioral engagement. Female = 0. Seventh grade = 0.

***$p < .001$. *ns* = non-significant.

Students' self-esteem, experiences of school burnout, academic achievement, behavioral engagement, grade level, and gender showed the expected relationships with affective and cognitive subtypes of engagement. In sum, better self-esteem and higher academic achievement were associated with students experiencing more affective and cognitive engagement. A high level of school burnout was negatively associated with affective and cognitive engagement. Girls were more affectively and cognitively engaged in comparison to boys. Younger students were affec-

tively but not cognitively more engaged than older students. Importantly, affective and cognitive engagement had statistically significant positive relationships with behavioral engagement.

4. Discussion

Using two independent samples of Finnish junior high school students, this study investigated the applicability of the SEI (Appleton et al., 2006) for capturing the subtypes of affective and cognitive engagement. Additionally, associations were examined between affective and cognitive engagement and measures with prior evidence of associations to engagement (self-esteem, burnout, and academic achievement), as well as a measure of behavioral engagement. The present study is among the first to investigate psychometric properties of SEI in an educational system outside the US (for another example, see Moreira et al., 2009). The results of confirmatory factor analyses provided support for the studies conducted among the US middle and high school students (Betts et al., 2010; Carter et al., 2012; Reschly et al., 2014) in indicating that five factors represent the SEI affective and cognitive subtypes of engagement. Furthermore, the SEI showed acceptable item and scale reliability properties, as evidenced by generally high factor score reliabilities, Cronbach's α coefficients, and squared standardized loadings. The results supporting the five-factor structure in an educational system other than that of the US suggest that affective and cognitive engagement can be assessed across different cultures and educational systems.

The results showed that the factor structure of SEI can be construed along two theoretically meaningful alternative models: (a) a five-factor model comprising three intercorrelated affective engagement factors (Teacher-Student Relationships, Family Support for Learning, and Peer Support at School) and two cognitive engagement factors (Future Aspirations and Goals, and Control and Relevance of the School Work); and (b) a model including two correlated second order factors: affective engagement (consisting of three lower-order affective engagement factors) and cognitive engagement (consisting of two lower-order cognitive engagement factors). The findings, thus, suggest that the SEI can be viewed as an instrument of affective and cognitive engagement construed along five intercorrelated factors or consisting of a higher order structure with two intercorrelated affective and cognitive engagement subtypes.

The results indicated that Control and Relevance of the School Work factor needed to be divided into three sub-factors. These were labeled as Control of the School Work, Relevance of the School Work, and Validity of Student Assessment. Some previous studies on the SEI (Carter et al., 2012; Grier-Reed et al., 2012) have completely omitted the psychometrically poorest factor, Control and Relevance of the School Work. The four-factor model showed a relatively good fit in the Finnish data; however, in this model an important component of cognitive engagement had

to be left out. Consequently, we specified this factor as a higher-order factor with three sub-factors. Control of the School Work sub-factor, however, showed relatively low reliability, suggesting that further testing and modification of the item contents or increasing the number of items of this sub-factor would be needed.

Positive concurrent associations were found between the independently assessed behavioral engagement scale and the SEI affective and cognitive engagement scales. These associations provide support for the relationship between students' affective and cognitive experiences at school and their behavior. Systematic monitoring of changes in students' affective and cognitive engagement has the potential for predicting changes in their behavior (Li et al., 2010; Walker & Greene, 2009; Wang & Holcombe, 2010). Expected associations emerged between the SEI factors and other constructs and background variables, attesting to concurrent validity of SEI. Statistically significant positive associations were found between the SEI affective and cognitive engagement subtypes and self-esteem (e.g., Ma, 2003), and negative associations between the affective and cognitive engagement and school burnout (see Salmela-Aro et al., 2009). Our findings were also in line with previous studies in that girls (e.g., Covell, 2010) and academically high-performing students (e.g., Haapasalo et al., 2010) were found to be more affectively and cognitively engaged than boys and students with lower academic achievement. However, younger students (e.g., Wang & Eccles, 2012) were not cognitively more engaged than older students. This may be due to the operationalization of the Future Aspirations and Goals factor, where upper-grade students closer to completion of high school have most likely given higher scores to items measuring this factor than lower-grade students.

Affective engagement was less strongly related to students' academic achievement than cognitive engagement. Warm supportive relationships among teachers, students, and families may relate indirectly to students' academic achievement by way of increased behavioral engagement (e.g., Voelkl, 2012) and decreased school burnout (Salmela-Aro, Kiuru, Pietikäinen, & Jokela, 2008). It was interesting that the highest correlations were between students' self-esteem and affective and cognitive engagement. This result implies that the way students see themselves is transferable to the way they see their school-related relationships and relevance of school (see Ma, 2003).

Our analyses of using the SEI in a Finnish junior high school sample showed that out of the original 33 items, two items ("I feel safe at school" and "I feel like I have a say about what happens to me at school") did not discriminate well between the engagement factors; these items had high factor loadings on more than one factor. Consequently, these poorly working items were omitted from subsequent analyses. The observed cross-loadings of the two items in our sample may be due to the differences between the original SEI validation sample (Appleton et al., 2006) and the Finnish samples. The original validation sample comprised an ethnically and economically diverse sample of ninth graders in the US, while the Finnish samples included seventh, eighth and ninth graders from relatively similar ethnic and economic backgrounds. It is noteworthy that the two deleted items

were also omitted from the Portuguese version of the SEI (Moreira et al., 2009), suggesting that items addressing safety and control may not be perceived as equally salient in the European school context as in the US.

The present study also has limitations. First, this study relied solely on students' self-reports, which may be biased due to socially desirable responses (Paulhus, 1991). Reports from teachers and parents on students' engagement would have strengthened the SEI concurrent validity examination. Nevertheless, as far as the highly inferential student affective and cognitive aspects of engagement are concerned, self-reports are likely to be the most feasible method available (Appleton et al., 2006). Second, the majority of the data was administered using Likert scales. Likert scales are vulnerable to systematic differences in the data resulting from students' response styles or construct-conform response behavior. Some students may, for example, have a tendency to endorse middle options and to avoid extreme responses. This, along with using self-reports as a sole method of collecting data, may inflate the relationships between the student engagement construct and the other variables applied in concurrent validity analysis. Future studies involving cross-validation of student reports with teacher and parent reports might provide more accurate estimates of the relationships between student engagement and related constructs, thus offering additional insights into student engagement.

The present study supports the utilitization of the SEI as a reliable and valid screening instrument for student affective and cognitive engagement in cultural contexts outside the US where the instrument was originally developed. Given that changes in students' behavior is expected to be preceded by changes in affective and cognitive engagement (see Li et al., 2010; Walker & Greene, 2009; Wang & Holcombe, 2010), systematic monitoring of students' affective and cognitive engagement contributes to early identification of individuals with low affective and/or cognitive engagement, or of classrooms with collective low engagement. This early identification may prevent a cumulative process of low engagement leading to poor academic achievement, disaffected behavior (such as truancy from school), and, ultimately, school dropout. The analyses showed that the SEI consists of five factors which can be construed along a five-factor model or two second-order factors model. For practitioners, the SEI may be most useful as a five-factor instrument. Affective engagement factors are particularly useful in providing teachers with information concerning the targets of interventions. Cognitive engagement factors help to identify students with low future goals, low perceived relevance of schooling, and low experiences of control over one's own school work (see Reschly, 2010). Researchers may find the SEI higher-order factor structure beneficial in deepening the understanding of student affective and cognitive engagement and their relationships with students' behavior and multiple other educationally relevant variables.

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Appendix A

Table A1: Items and factors of the original Student Engagement Instrument (SEI; Appleton, Christenson, Kim, & Reschly, 2006)

TS1	My teachers are there for me when I need them.
TS2	Adults at my school listen to the students.
TS3	The school rules are fair.
TS4	Most teachers at my school are interested in me as a person, not just as a student.
TS5	Overall, my teachers are open and honest with me.
TS6	Overall, adults at my school treat students fairly.
TS7	I enjoy talking to the teachers here.
TS8	At my school, teachers care about students.
TS9	I feel safe at school.
PS1	Other students here like me the way I am.
PS2	Other students at school care about me.
PS3	Students at my school are there for me when I need them.
PS4	Students here respect what I have to say.
PS5	I enjoy talking to the students here.
PS6	I have some friends at school.
FS1	My family/guardian(s) are there for me when I need them.
FS2	When something good happens at school, my family/guardian(s) want to know about it.
FS3	When I have problems at school, my family/guardian(s) are willing to help me.
FS4	My family/guardian(s) want me to keep trying when things are tough at school.
CR1	After finishing my school work, I check it over to see if it's correct.
CR2	Most of what is important to know you learn in school.
CR3	When I do school work, I check to see whether I understand what I'm doing.
CR4	When I do well in school, it's because I work hard.
CR5	The tests in my classes do a good job of measuring what I'm able to do.
CR6	Learning is fun because I get better at something.
CR7	What I'm learning in my classes will be important in my future.
CR8	The grades in my classes do a good job of measuring what I'm able to do.
CR9	I feel like I have a say about what happens to me at school.
FG1	Going to school after high school is important.
FG2	I plan to continue my education following high school.
FG3	School is important for achieving my future goals.
FG4	I am hopeful about my future.
FG5	My education will create many future opportunities for me.

Note. TS = Teacher-Student Relationships; PS = Peer Support at School; FS = Family Support for Learning; CR = Control and Relevance of the School Work; FG = Future Aspirations and Goals; A 4-point rating scale: 1 = *strongly agree*; 4 = *strongly disagree*.

II

STUDENT ENGAGEMENT AND SCHOOL BURNOUT IN FINNISH JUNIOR HIGH SCHOOLS: LATENT PROFILE ANALYSIS

by

Virtanen, T.E., Lerkkanen, M-K., Poikkeus, A-M., & Kuorelahti, M.

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Running head: STUDENT ENGAGEMENT AND BURNOUT LATENT PROFILES

Student Engagement and School Burnout in Finnish Lower Secondary Schools: Latent Profile Analysis

Virtanen, T. E.[1], Lerkkanen, M.-K.[2], Poikkeus, A.-M. [3], & Kuorelahti, M.[4]

[1] University of Jyvaskyla, Department of Teacher Education, P.O. Box 35, FI-40014 University of Jyvaskyla, Finland; tuomo.e.virtanen@jyu.fi; Tel.+358408053636

[2] University of Jyvaskyla, Department of Teacher Education, P.O. Box 35, FI-40014 University of Jyvaskyla, Finland; marja-kristiina.lerkkanen@jyu.fi; Tel.+358408053347

[3] University of Jyvaskyla, Department of Teacher Education, P.O. Box 35, FI-40014 University of Jyvaskyla, Finland; anna-maija.poikkeus@jyu.fi; Tel.+358408053363

[4] University of Jyvaskyla, Department of Education, P.O. Box 35, FI-40014 University of Jyvaskyla, Finland; matti.kuorelahti@jyu.fi; Tel.+358407442797

[1] Corresponding author

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Abstract

Self-ratings of behavioural engagement, cognitive engagement and school burnout were used in person-centred analyses to identify latent profiles among 2485 Finnish lower secondary school students. Three profiles were identified: high-engagement/low-burnout (40.6% of the sample), average-engagement/average-burnout (53.9%), and low-engagement/high-burnout (5.5%). Another sample of lower secondary school students was used to validate the three profiles. The factors most strongly associated with the high-engagement/low-burnout profile of lower secondary school students' were high levels of support from teachers and family, good academic performance and lack of truancy. The study indicated that teacher and family support and students' academic achievement are pivotal in understanding student engagement and school burnout.

Keywords: student engagement; school burnout; latent profile analysis; lower secondary school

Word count: 10105 words

Student Engagement and School Burnout in Finnish Lower Secondary Schools: Latent Profile Analysis

Introduction

Student disengagement has negative consequences both for students (see Henry, Knight, & Thornberry, 2012) and society as a whole (Fredricks, Blumenfeld, & Paris, 2004). Many young people become disengaged from school during compulsory education (Skinner, Furrer, Marchand, & Kindermann, 2008) and fail to proceed with post-compulsory education. In 2010, an average of 8.1% (ranging from 3.5% to 25.6%) of 15- to 19-year-olds in the OECD countries were not involved in education, employment or training (OECD, 2012). In Finland, where this study was conducted, the corresponding percentage was 5.1%.

Student engagement (Appleton, Christenson, Kim, & Reschly, 2006; Fredricks et al., 2004) and school burnout (Salmela-Aro, Kiuru, Leskinen, & Nurmi, 2009) are central concepts for understanding students' well-being and adjustment to school. Both school burnout and student engagement depict a student's social and emotional well-being and, therefore, may provide a complementary understanding. To date, few studies have explored how the combination of student engagement and school burnout may form different profiles, and none have focused on the lower secondary school years (ages 13 to 16), a critical period for early signs of waning engagement and increased risk of dropping out (see Skinner et al., 2008). We utilised the person-environment fit perspective (Eccles & Roeser, 2011) as a guiding theoretical framework, and applied a person-centred approach to identify homogeneous latent profiles for lower secondary school students' engagement and burnout. In contrast to variable-centred analyses, person-centred research take as a starting point the notion that individual differences may reflect sub-populations and a model that focuses on the average population cannot apply to all subjects (Bergman & Andersson 2010). For example, a student can be highly engaged behaviourally, yet experience simultaneously a high level of

school burnout. In such cases, unlike variable-centred methods, person-centred analyses avoid masking the heterogeneity (Janosz, 2012), and may reveal why some students adjust to school well while others do not. In line with You and Sharkey (2009) who analysed the impact of personal and contextual factors on student engagement, we examined the associations between student engagement and school-burnout profiles with respect to students' experiences of contextual support from teachers, family and peers. The analysis was performed in conjunction with student characteristics and aspirations, including self-esteem, academic performance, school aspirations and school truancy. Gaining an understanding of the interplay between contextual and personal factors that may contribute to a student's engagement and well-being was deemed crucial for a student's school adjustment. As previous literature indicates that background factors, such as the student's gender, special education status, family's socioeconomic status, and age, are important correlates of a student's overall school adjustment, they were statistically controlled in the analyses as covariates.

Student engagement

The term *student engagement* refers to being actively engaged in school, and implies that committing and investing in learning and school life are key contributors to academic success (Henry et al., 2012). Engagement is associated with patterns of attendance and academic resilience, whereas disengagement relates to underachievement, deviant behaviour and dropping out. Importantly, student engagement is not a personal trait of the individual student, but rather indicates the malleable fit between a student and the educational environment (e.g., Reschly & Christenson, 2012).

Three components capturing affective, behavioural and cognitive aspects are typically included in conceptualising student engagement (e.g., Fredricks et al., 2004). First, an affective component depicts both student-perceived positive emotions aroused by schoolwork

and students' reported experiences of resources that facilitate them. Affective engagement intersects constructs such as bonding, belonging, connectedness, attachment, involvement (Jimerson et al., 2003), feelings of being accepted and supported by teachers and classmates (Appleton et al., 2006; Fredricks et al., 2004), and students' enjoyment and interest in learning (Janosz, Archambault, Morizot, & Pagani, 2008). Some scholars construe students' perceived support from teachers, family and peers as indicators of affective engagement (Appleton et al., 2006), while others view students' perceptions of support from important others as contextual facilitators of engagement (e.g., Lam et al., 2012; Skinner et al., 2008). This implies that students' affective experiences typically precede changes in their behaviour (see Reschly & Christenson, 2012). In this study, we treated dimensions of affective engagement (student-perceived teacher support, family support for learning and peer support at school) as contextual facilitators of affects that contribute to lower secondary school students' behavioural and cognitive engagement and burnout. Second, the cognitive component refers to the extent to which individuals are motivated to learn and achieve, and whether they plan, monitor, regulate cognition and value education (Fredricks et al., 2004). Finally, the behavioural component of engagement includes observable indicators such as schoolwork participation (Skinner, Wellborn, & Connell, 1990) and sustained behavioural involvement in learning activities (Skinner & Belmont, 1993).

School burnout

School burnout assesses students' stress levels, feelings of frustration, and the extent of negative emotions aroused by schoolwork, all indicating poor well-being (Salmela-Aro et al., 2009). School burnout has three dimensions: exhaustion, cynicism and lack of efficacy (inadequacy). *School-related exhaustion* is the affective feeling of strain and chronic fatigue. According to Maslach, Schaufeli and Leiter (2001), exhaustion is a necessary but not a sufficient criterion for burnout. Eventually, exhausted students may distance themselves from

schoolwork as a way of coping with the workload. A strong relationship exists between exhaustion and *cynicism*, which is manifested in a general indifference or a detached attitude toward school and a loss of interest in academic work. Exhausted and cynical students are likely to experience a low sense of accomplishment in their schoolwork. The perception of *inadequacy* at school refers to the individual's diminished feelings of competence and accomplishment as a student. School burnout aligns conceptually with the concept of disengagement, and some researchers view it as the psychological process of emotional disengagement (Wang, Chow, Hofkens, & Salmela-Aro, 2015). Prior studies have shown that adolescents displaying higher levels of school burnout report more depressive symptoms. Moreover, the lower the students' school engagement and academic achievement, the higher they score for cynicism and a sense of inadequacy, and the meaning or value they attach to school is also lower (Salmela-Aro et al., 2009). School burnout is also associated with dropping out of school (Tuominen-Soini & Salmela-Aro, 2014).

Person-environment fit and contextual support for students' engagement and well-being

The person-environment fit perspective (Eccles & Roeser, 2011) states that students perform best and are likely to be most engaged when there is a synchrony across personal characteristics, values, needs and practices espoused by the school. When students' inherent need for autonomy, relatedness and competence are met at school, they find support for participation in school activities, which strengthens their academic performance, beliefs in the meaningfulness of schoolwork, school belonging and mental health (Deci & Ryan, 2000; Eccles & Roeser, 2011; Skinner, Kindermann, Connell, & Wellborn, 2009). In reverse, when students are supported in their activities, their need for autonomy, relatedness and competence can be met. . Conversely, individuals are not likely to do well or be highly motivated if their social environments do not fit their psychological needs. Such a misfit may result in unfavourable outcomes, such as negative behaviours and attitudes and a low

evaluation of school (Eccles & Midgley, 1989). Supportive, caring social contexts nurture the student's sense of belonging, which in turn facilitates student motivation and engagement (Wang & Eccles, 2013). Unsupportive contexts (lack of affiliative, trusting bonds and support from teachers, peers and parents), on the other hand, undermine students' school-related attitudes and beliefs about the self, and may lead to extrinsic motivation, and emotional and behavioural disaffection (Skinner et al., 2008). The importance of personal and contextual factors on youth functioning is recognised in the developmental–ecological model (You & Sharkey, 2009), which posits that engagement is influenced by both personal propensities and interpersonal relationships. There is evidence that the student's self-esteem, in particular, is positively and significantly associated with his or her engagement (e.g., Finn & Rock, 1997; Ma, 2003).

Research has consistently shown that students' perceptions of care and support from their teachers facilitate engagement (e.g., Wang & Eccles, 2013) and protect against school burnout (Salmela-Aro, Kiuru, Pietikäinen, & Jokela, 2008). Wang and Holcombe (2010) found that teachers' social support (students' perceptions of teachers' help and understanding) contributed positively to students' school participation and identification. One study (Li, Doyle Lynch, Kalvin, Liu, & Lerner, 2011) indicated that trusting and supportive peer relationships positively predicted behavioural and emotional school engagement. Wang and Eccles (2013) showed that perceived peer acceptance and positive peer relationships had a positive influence on all three dimensions of student engagement. However, the evidence on the impact of peer influence on students' school-related burnout is inconsistent. Associating with peers who experience high burnout may contribute to a student's burnout, whereas associating with those with low burnout may tend to decrease a student's burnout (Kiuru, Aunola, Nurmi, Leskinen, & Salmela-Aro, 2008).

The impact of a positive parent-child relationship on a student's achievement, motivation, engagement and well-being has also been documented (see Bempechat & Shernoff, 2012). A positive relationship and bond between the parent and the child is likely to foster parental interest and support for the child's schoolwork. A child positively attached to norm-relevant significant others, such as parents, is more likely to conform to parental expectations regarding school engagement (Veenstra, Lindenberg, Tinga, & Ormel, 2010).

As in previous literature, we took the multidimensionality of student engagement into account: a behavioural component referring to students' active participation and effort; a cognitive component involving valuing school as useful for future endeavours; and an affective component consisting of support from teachers, family and peers. We followed scholars (Lam et al., 2012; Skinner et al., 2008) who suggest that perceptions of support from teachers, family and peers should be seen as facilitators of engagement rather than indicators of it. Applying the person-environment fit perspective (Eccles et al., 1993), we assume that an optimal match between a student's personal characteristics and the school environment maximises the student's school engagement and minimises burnout. More specifically, the more support students experience with their schoolwork, the greater their engagement will be and the less they will feel school-related burnout.

The profiles of engagement and well-being in adolescence

Previous longitudinal, person-centred analyses have shed light on the relationship between students' engagement profiles and school adjustment, including dropping out of school. In summary, studies have revealed that there are interindividual differences in the level and development of engagement. Students with stable high levels of engagement (a composite of affective, behavioural and cognitive engagement) from ages 12 to 16 have the best overall personal, school and social profiles with minimal dropping out (Janosz et al., 2008). Most adolescents maintain a stable engagement profile and show high levels of

affective, cognitive and behavioural engagement. Students with the most significant increases in misbehaviour and the lowest levels of behavioural compliance at age 12, however, have the highest risk of dropping out (Archambault, Janosz, Morizot, & Pagani, 2009).

Only a few previous studies have taken into account adolescents' heterogeneity by identifying student profiles of engagement and analysing links between the profiles and indicators of student well-being. Wang and Peck (2013) profiled students' levels of behavioural, emotional and cognitive engagement by gathering data from the students from ninth grade to one year after their expected high school graduation. They identified five student profiles: moderately engaged, highly engaged, minimally engaged, emotionally disengaged and cognitively disengaged. The five profiles differed in educational and psychological functioning. In general, highly engaged students showed the highest academic achievement, college enrolment rates and educational aspirations, and did not drop out of high school. They also had less depressive symptoms than the less engaged groups. No significant correlations were found between the five profiles and students' gender, ethnicity or family's socioeconomic status. Unlike Wang and Peck (2013), Li and Lerner (2011) inspected students' behavioural and emotional engagement profiles separately. Among the adolescents studied (grades 5–8), they identified four profiles of behavioural engagement (transitory decreasing, decreasing, moderately stable and highly stable), and four profiles of emotional engagement (decreasing, moderate, high with decreasing, and highest). Overall, they found that youths in the highest trajectories of behavioural and emotional engagement performed better academically, and showed less delinquency, less depression and less substance abuse than students in the behaviourally and emotionally decreasing profiles. Conversely, youths in the transitory decreasing group of behavioural engagement or the decreasing group of emotional engagement reported the lowest grades and the highest rates of delinquency, substance abuse and depression.

A growing body of research suggests that student engagement is an important construct for understanding students' school adjustment and well-being. However, there are at least two limitations in the previous research. First, studies employing person-centred approaches are scarce (Janosz, 2012). Second, student engagement has not been investigated in relation to school-related burnout among lower secondary school students. Consequently, this study applied an integrative framework to analyse student profiles of behavioural and cognitive engagement and school-related well-being, i.e. level of students' school burnout and their associations with background, contextual and student characteristics and aspirations factors.

Aims of the study

In this study, we set out to identify profiles of student engagement and school burnout among Finnish lower secondary school students, and to examine variables associated with these profiles. We used a person-centred approach to reveal the heterogeneity of students' school-related experiences. Thus, the study's dual aims were to first identify latent profiles of Finnish lower secondary school students based on student engagement and burnout. The second was to examine factors related to the students' backgrounds, their experiences of support from teachers, family and peers, and student characteristics and aspirations correlating with the profiles. Based on our guiding framework, the person-environment fit model (Eccles & Roeser, 2011), students who experience a good fit with their school environment would be expected to show elevated levels of engagement and would be less likely to suffer from school burnout compared with those with a poorer fit (Eccles et al., 1993). In line with evidence of substantial heterogeneity in students' school adjustment (Li & Lerner, 2011; Wang & Peck, 2013), we expected to identify a profile with a high level of engagement and low level of burnout, and a profile with a low level of engagement and high level of burnout (Hypothesis 1).

Based on accounts indicating that a supportive school context facilitates students' fit to the school environment (Skinner et al., 2008; Wang & Eccles, 2013), we hypothesised that student profiles would be associated with students' experiences of contextual support in the form of affective support from teachers (Klem & Connell, 2004), parents (Rosenfeld, Richman, & Bowen, 2000; Woolley & Bowen, 2007) and peers (Lam et al., 2012). High support was expected to be associated with a high-engagement/low-burnout profile and low support with a low-engagement/high-burnout profile (Hypothesis 2). The background factors that we expected to correlate with the latent profiles were gender, special education status, family's socioeconomic status and age. We expected female students (Reschly, Huebner, Appleton, & Antaramian, 2008), students not attending special education (Yazzie-Mintz, 2009), those from families with high socioeconomic statuses (Li & Lerner, 2011) and younger students (Wang & Eccles, 2012) to show a better fit to the school environment than males, older students and those receiving special education support, and those with low socioeconomic statuses (Hypothesis 3). In line with the propositions of the impact of personal factors (referred to as student characteristics and aspirations in the present study) in You and Sharkey's (2009) developmental–ecological model of student engagement, we expected students' self-esteem to be positively associated with their engagement even after numerous contextual correlates were taken into account. Other factors describing students' characteristics and aspirations that we expected to be associated with the latent profiles were academic performance (Ross, 2009; Salmela-Aro et al., 2009), school aspirations (Wang & Peck, 2013) and truancy (Maynard, Salas-Wright, Vaughn, & Peters, 2012) (Hypothesis 4).

Methods

Participants and procedure

The research sample consisted of 2485 Grade 7 through Grade 9 students (52.1% females) from eight Finnish lower secondary schools (158 classrooms), who volunteered to

participate in the study. These schools were typical public, general education schools located in western (three schools) and northern (five schools) Finland, with Finnish as the language of instruction. The student bodies ranged from 252 to 550 students. Following the guidelines of the National Advisory Board on Research Ethics (2009), the schools distributed a letter to the children's parents or guardians explaining the study and procedures for withdrawing their children from participation. The questionnaire was piloted in one separate lower secondary school prior to data collection.

Following written instructions from the research team, teachers collected the data during normal instruction periods in December 2012 and January 2013 from all participating students in attendance. Teachers were advised to assure students that their responses were confidential. During data collection, students needing help were given instructions on how to fill out the questionnaire. Two schools preferred an Internet-based questionnaire (N = 654) and the remainder used a paper questionnaire (N = 1831). The response rate was 86.3%. The research sample consisted of 795 seventh-graders (32.0%, mean age 13.65, SD = 0.42 years), 805 eighth-graders (32.4%, mean age 14.66, SD = 0.42 years), and 885 ninth-graders (35.6%, mean age 15.66, SD = 0.39 years).

To validate the latent profiles and to ensure geographical representation of students, we utilised another independent sample consisting of 821 students (mean age 14.4 years, 49.7% male) from seven Finnish public lower secondary schools. These schools were located in central Finland and participated in a nationwide three-tiered support-system initiative. The schools' student bodies ranged from 170 to 445. The validation sample data were collected in November and December 2010 following the same procedures as the research data collection, except that classrooms were selected by a random draw.

Measures

Engagement

As suggested by the literature considering engagement as a multidimensional construct (e.g., Fredricks et al. 2004), we analysed engagement through separate dimensions. In the present analyses, the core construct was represented by two indicators of engagement – behavioural and cognitive dimensions. However, the affective component was not represented by an indicator of emotional engagement, as students' perceptions of support from significant others was construed here as a contextual factor facilitating (or preceding) engagement.

Behavioural engagement. We used the ongoing engagement scale from the middle-school Research Assessment Package for Schools (RAPS-SM: Wellborn & Connell, 1987) to measure students' self-reported behavioural engagement. Using a four-point scale (1 = *strongly agree;* 4 = *strongly disagree*), students rated themselves on four items: effort (*I work very hard on my schoolwork; I don't try very hard in school*), attention (*I pay attention in class*), and preparation (*I often come to class unprepared*). In addition, self-ratings were obtained on students' personal beliefs about the importance of school (*How important is it to you to do the best you can in school?*), and were 1 = *very important*, 2 = *sort of important*, 3 = *not very important* and 4 = *not at all important*. Responses were reverse-coded so that higher scores indicated higher levels of student engagement. The Cronbach's alpha (α) for our study was 0.77. We used the composite mean score for subsequent analyses as an indicator of student behavioural engagement.

Cognitive engagement. We used the Student Engagement Instrument (SEI: Appleton et al., 2006) to assess students' cognitive engagement with school. To form an overall indicator of cognitive engagement, we combined two subscales: future goals (5 items*;* e.g. *I am hopeful about my future*), and control and relevance of schoolwork (8 items; e.g. *Most of*

what is important to know you learn in school). Students rated the items on a four-point scale (1 = *strongly agree*; 4 = *strongly disagree*), and responses were reverse-coded so that higher scores indicated a higher level of cognitive engagement. Cronbach's α for the cognitive engagement scale (the two scales combined) was 0.88.

School burnout

School burnout has been specified as either consisting of three factors or a single construct (e.g., Salmela-Aro & Upadyaya, 2014), depending on whether burnout was the primary or secondary interest in a study. The present study focused on the two dimensions of student engagement and their associations with student-perceived school burnout (as an indicator of students' well-being); thus, burnout was measured as a single construct. We used the Bergen Burnout Indicator (BBI-10: Salmela-Aro & Näätänen, 2005), a standardised test that assesses: (1) school-related exhaustion (four items, such as 'I often sleep badly because of matters related to my schoolwork'); (2) cynicism (three items, such as 'I feel that I am losing interest in my schoolwork'); and (3) inadequacy (three items, such as 'I used to have higher expectations of my schoolwork than I do now'). Students' self-ratings were provided on a six-point Likert scale (1 = completely agree; 6 = completely disagree). In the present data, exhaustion, cynicism and inadequacy were highly interrelated (correlations between 0.60 and 0.80), supporting the use of an overall composite (mean of all items) of burnout. The Cronbach's α for the scale was 0.91. To calculate the raw score sum of burnout, the students' responses were reverse-coded so that higher scores indicated a higher level of school burnout.

Background factors

Students' gender, special education status, family's socioeconomic status, and age were controlled in the statistical models as covariates with latent profile memberships. We entered two self-reported, dummy-coded variables into the analyses: gender (1 = *male*) and special education status (1 = *receives special education services*). Other covariates included the

following self-reported variables: family's socioeconomic status (1 = *low income*; 5 = *high income*) and age (in years).

Contextual support for engagement

Students' experiences of support from teachers, family and peers were rated on a four-point scale (1 = *strongly agree*; 4 = *strongly disagree*) using the affective engagement subscales of the SEI (Appleton et al., 2006). The subscales included nine items concerning teachers (e.g. *At my school, teachers care about students*), four concerning families/guardians (e.g. *When I have problems at school, my family/guardian(s) are willing to help me*) and six concerning peers (e.g. *Other students at school care about me*). One item concerning teacher support was excluded because of large cross-loadings on the other factors. The responses were reverse-coded so that higher scores indicated a higher level of perceived support. The Cronbach's α's were 0.88, 0.78 and 0.84, respectively. We used the mean values of subscales for subsequent analyses as indicators of student-experienced teacher, family and peer support.

Student characteristics and aspirations

To assess students' general self-esteem, we used the Rosenberg Self-Esteem Scale (Rosenberg, 1965). The Self-Esteem Scale measures self-esteem as a global, partly environmentally dependent component of self-concept (as opposed to specific components of self-concept including physical, social and academic components). Therefore, self-esteem indicates the extent to which an individual likes, accepts, approves and values oneself (Marsh & O'Mara, 2008). The Rosenberg Self-esteem Scale consists of five items with positively worded statements (e.g. *On the whole, I am satisfied with myself*), and five with negatively worded statements (e.g. *At times, I think I am no good at all*). Students provided self-ratings on a four-point scale (1 = *strongly agree*; 4 = *strongly disagree*), and the responses were reverse-coded so that higher scores indicated higher self-esteem. We used a mean score of self-esteem in the subsequent analyses. The Cronbach's α for the scale was 0.83.

We used students' self-reported grades in three core academic subjects to provide a measure of students' academic performance. These three subjects were those with the largest number of hours in the lower secondary school syllabus: Finnish language and literature, mathematics and the first foreign language. The students were asked to report their last school grade on each subject using the Finnish lower secondary schools' seven-point scale for grading (4 = fail, 5 = adequate, 6 = moderate, 7 = satisfactory, 8 = good, 9 = very good, 10 = excellent). The Cronbach's α for academic performance across the three items was 0.81, and we used the mean value for subsequent analyses.

To measure students' school aspirations, we asked the students to specify the next educational choice they wished to pursue after compulsory school: *After lower secondary school, I would like to continue studying* (1 = *in high school*; 2 = *in vocational school*; 3 = *in school other than high school or in vocational school*; 4 = *I do not intend to continue studying*). The school aspiration variable was recoded into *k*-1 dummy-coded variables (1 = *high school*, 0 = *others*; 1 = *vocational school*, 0 = *others*; 1 = *school other than high school or vocational school*, 0 = *others*).

Absences from school that the students themselves indicated as being unacceptable to teachers and parents, i.e. truancy, were measured with one item: *I play truant from school* (Studsrod & Bru, 2009) using a 5-point scale (1 = *often*, 2 = *quite often*, 3 = *occasionally*, 4 = *seldom* and 5 = *never)*. The truancy item was dummy-coded (1 = *truancy*).

Data analysis

We utilised a multistep process for the statistical analyses of the data. First, we calculated the correlations between the variables, descriptive statistics for continuous variables and classroom-level intra-class correlations for the variables used in student profiling (student behavioural and cognitive engagement, and burnout). Second, using a person-centred (Bergman & Andersson, 2010) mixture model approach, we identified homogeneous profiles

through latent-profile analysis (LPA: Muthén & Muthén, 1998-2012). Third, we cross-validated the profiles with an independent sample of Finnish lower secondary school students. Finally, we used multinomial logistic regression to associate the latent profiles with student background, contextual and student characteristics and aspirations variables.

To select the best model of latent profiles, we examined a series of models with progressively greater numbers of profiles. We then compared these models according to the statistical criteria available in the Mplus statistical modelling program, version 7.11: log-likelihood (LL), Akaike information criterion (AIC), Bayesian information criterion (BIC), Vuong-Lo-Mendell-Rubin likelihood ratio test (VLMR), and entropy value. Smaller values in AIC and BIC indicate a better fit between the model and the data (Nylund, Asparouhov, & Muthén, 2007) or an increased probability of replication. Higher values of entropy reflect better distinctions between latent profiles (Kline, 2005). VLMR tests a *k*-1 profile model (H_0) against a *k*-profile model; therefore, a low *p* value suggests that the model with one less profile should be rejected in favour of the estimated model.

The estimation method was maximum likelihood with robust standard errors (MLR), which were computed using a sandwich estimator (MLR: Muthén & Muthén, 1998–2012). We controlled the nested data using an Mplus complex-type analysis, which adjusted the standard errors of the estimated coefficients. The percentage of missing values among the analysis variables varied between 2.4 (*I often come to class unprepared*) and 6.1 (*I often have feelings of inadequacy in my schoolwork*). The missing values were imputed with the Mplus Bayesian multiple-imputation method (Rubin, 1987), which averages the parameter estimates over the set of analyses (50 imputed data sets), and averages the standard errors over the set of analyses and the between-analysis parameter estimate variation.

Results

Correlations and descriptive statistics

Table 1 presents the correlations between all variables, and means and standard deviations for continuous variables (N = 2485).

INSERT TABLE 1 ABOUT HERE

The correlation coefficients between the three variables applied in the student profiling were significant at $p < 0.001$ and were in the expected directions. Behavioural and cognitive engagement correlated positively and were statistically significant with each other, whereas school burnout correlated negatively with the two components of engagement. Contextual support variables (student perceived affective support from teachers, family and peers) had statistically significant positive correlations with behavioural and cognitive engagement, and negative correlations with school burnout: The more contextual support the students experienced, the more they were behaviourally and cognitively engaged and the less they reported school burnout. Behavioural and cognitive engagement were also statistically significantly associated with self-esteem and academic performance (higher engagement related to higher self-esteem and academic performance), and the latter variables correlated negatively with school burnout. Finally, students who reported playing truant also reported lower levels of both behavioural and cognitive engagement and perceived affective support from teachers, family and peers, self-esteem, and academic performance along with higher levels of school burnout.

With the exception of behavioural engagement, the intra-class correlations of the profiling variables were statistically significant ($ICC_{BEH} = 0.01$, $p > 0.05$; $ICC_{COGN} = 0.03$, $p < 0.05$;

$ICC_{BURN} = 0.04$, $p < 0.001$), indicating a hierarchical structure in the data, although the effects were notably small (students nested in 158 classrooms).

Latent-profile model

Table 2 provides fit indices and group sizes for the six estimated models. The VLMR test results indicated that the three-profile model was superior to the two-profile one. On the other hand, the VLMR also suggested the five-profile model was superior to the four-profile, and the six-profile to the five-profile. However, comparisons of the two- and three-profile models revealed a significant drop in AIC and BIC indices (12579 → 12040 and 12637 → 12122), a finding that was not replicated in comparisons between other *k* versus *k*-1 profile models. In addition, the five- and six-profile models included profiles that would apply to less than 1% of the student population.

INSERT TABLE 2 ABOUT HERE

The results with their statistical indices suggested that the three-profile model was superior to the two-profile, but the differences between other *k* versus *k*-1 profile models were relatively small. Therefore, we selected the three-profile model as the most justifiable and parsimonious. We found additional support for a three-profile model when we calculated the odds of correction classification (OCC) ratios, which must be greater than 5.0 in each profile (Nagin, 2005). The OCCs varied between 6.0 and 155.5. Large OCC values, along with an entropy value of 0.73, indicate a latent profile model with good profile separation and assignment accuracy.

We validated the selection of the three-profile model with an independent sample. The results with the validation data, shown in Table 3, reveal the same pattern of AIC and BIC indices. Again, the three-profile model was significantly superior to the two-profile, although the differences between other *k* versus *k*-1 profile solutions were minor.

INSERT TABLE 3 ABOUT HERE

Thus, we were able to validate three latent profiles of student engagement and burnout across two independent samples of Finnish lower secondary school students. The three profiles identified in both samples were named as follows: (1) low-engagement/high-burnout (5.5%); (2) high-engagement/low-burnout (40.6%); and (3) average-engagement/average-burnout (53.9%).

Table 4 shows the descriptive statistics of the variables applied in student profiling by the latent profiles.

INSERT TABLE 4 ABOUT HERE

First, the descriptive statistics indicated that there was more variation between the profiles in students' behavioural and cognitive engagements than in school burnout (as suggested by high intra-class correlations). Second, all the profiles were highly statistically significantly different from each other in the variables applied in student profiling.

Figure 1 shows the standardised values ($M = 0$, $SD = 1$) of the profiles in behavioural engagement, cognitive engagement and school burnout.

INSERT FIGURE 1 ABOUT HERE

As shown by the standardised values, students in the average-engagement/average-burnout profile manifested average patterns in the variables used for profiling. High-engagement/low-burnout students had values of about one standard deviation above average in the two components of engagement, and values below zero in school burnout. Low-engagement/high-burnout students showed an inverse pattern in their school adjustment.

They reported high levels of school burnout with two standard deviations below average in values of behavioural and cognitive engagement.

Variables associated with the latent profiles

Table 5 presents the unstandardised results of the multinomial logistic regression analyses associations between background, contextual and student characteristics and aspirations factors with membership in the latent profiles, contrasting the low-engagement/high-burnout profile with the high-engagement/low-burnout and average-engagement/average-burnout profiles.

INSERT TABLE 5 ABOUT HERE

In general, contextual and student characteristics and aspirations factors had a greater correlation with the latent profiles than the background factors. Students who reported high levels of teacher and family support, who performed well academically, were not truant, and who aspired to go to high school (as compared with those who did not intend to continue their studies) were more likely to have the high-engagement/low-burnout or average-engagement/average-burnout profiles, than the low-engagement/high-burnout profile. For instance, the odds ratios (OR) indicated that a one-unit increase on the teacher-support scale related to approximately 33.1 times greater odds of belonging to the high-engagement/low-burnout profile and 5.6 times greater odds of being in the average-engagement/average-burnout profile, compared with the low-engagement/high-burnout profile, when controlling for other variables. Likewise, a one-unit increase on the family-support scale corresponded to OR of 8.3 and 2.2 in these categories. The OR for student academic performance were 2.1 and 1.5, respectively, for highly engaged and averagely engaged students. Students reporting truancy from school were likely to belong to the low-engagement/high-burnout profile. In addition, high self-esteem contributed to the high-engagement/low-burnout student profile (OR = 5.1), compared with the low-engagement/high-burnout profile.

Gender was also statistically significantly associated with students' latent profile membership: girls were more likely to belong to the high-engagement/low-burnout profile than to the low-engagement/high-burnout profile, whereas boys were more likely than girls to belong to the low-engagement/high-burnout profile

Discussion

This study had two goals: to identify latent profiles of Finnish lower secondary school students regarding student behavioural and cognitive engagement and school burnout, and to investigate background, contextual and student characteristics and aspirations factors that are associated with these profiles. Our findings extend the understanding of how 13- to 16-year-old students' engagement is linked to school burnout. The study has some important practical implications for researchers and practitioners with respect to factors facilitating or supporting students' engagement and preventing waning involvement with schoolwork and interest in school.

Using the latent-profile analysis on a data set of 2485 Finnish lower secondary school students from Grade 7 through Grade 9, we identified three student profiles: high-engagement/low-burnout, average-engagement/ average-burnout and low-engagement/ high-burnout. The student profiles were consistent across the two components of engagement used in the profiling, behavioural and cognitive engagement (both were high, average or low), thereby replicating the results of Wang and Peck (2013). School burnout was dynamically, and in an expected fashion, related to behavioural and cognitive engagement, as high engagement was associated with low burnout, average engagement with average burnout and low engagement with high burnout. This finding suggests that students' engagement and school burnout are to some extent parallel processes and their development may have similar mechanisms and underlying factors.

The second stage of the analyses where the focus was on analysing the associations of background, contextual and student characteristics and aspirations factors with the latent profile groups showed that along with student characteristics and aspirations factors (in particular, academic performance, truancy and self-esteem), student-perceived teacher and family support for learning (construed often as facilitators of affective engagement) played a pivotal role in understanding students' adjustment in their lower secondary school environment.

In accordance with Hypothesis 1, we identified a profile with simultaneous high engagement and low burnout. These students, approximately 40% of the sample, found schoolwork relevant for their future, had high control over what they did at school, showed positive behaviours of attention and preparation in classes, had low levels of school-related burnout, were not truant, and were able to succeed academically. We may conclude that for this subgroup of students, the fit between the students and the environment was positive, they appeared to perceive school as an integral, valued part of their life, and they had the ability to utilise school resources.

Furthermore, supporting Hypothesis 1 and aligning with Li and Lerner (2011) and Wang and Peck (2013), we found variations in students' school adjustment. A small portion of students (5.5%) reported low engagement and high burnout, which suggests a non-optimal adjustment overall and a poor fit with the school environment. Perceived low support from teachers (c.f., Salmela-Aro et al., 2008) and family (see Bempechat & Shernoff, 2012) has earlier also been associated with burnout. For these students, lower secondary school did not appear to represent an environment where they would feel supported, competent and autonomous (Eccles & Roeser, 2011). School burnout is likely to have negative consequences for adolescents' long-term school careers (Tuominen-Soini & Salmela-Aro, 2014), and because of disaffection, these students may not be motivated to continue their education,

placing them at risk of dropping out of school and the educational track (Wang & Peck, 2013).

We found partial support for Hypothesis 2 which posited that the profiles would be associated with students' experiences of support from teachers (Klem & Connell, 2004), parents (Rosenfeld et al., 2000; Woolley & Bowen, 2007) and peers (Lam et al., 2012). Students showing the most optimal fit with school reported receiving affective support in the school environment (Skinner et al., 2008; Wang & Eccles, 2013), in particular, from the teachers (c.f., Klem & Connell, 2004). Teachers' ability to form meaningful, supportive relationships with students has been shown to facilitate students' social connections with school, energise their engagement, and protect against disengagement (Pianta, Hamre, & Allen, 2012). As these students identify with school and are comfortable with it as a social context, they are likely to show persistence in their educational goals (Tuominen-Soini & Salmela-Aro, 2014; Wang & Peck, 2013). Conversely, students in the low-engagement/high-burnout profile reported poor perceived teacher support and a higher rate of skipping classes (Skinner et al., 2009).

Similarly, students who reported receiving high affective support from their family tended to belong to the profiles showing good or average fit to their lower secondary schools. These results imply that a match across environments (school and home) fosters student engagement and prevents school burnout, while a mismatch may hinder student engagement and increase school burnout (Kumar, 2006). Lohman, Kaura, and Newman (2007) found that adolescents experiencing simultaneously high levels of autonomy and connectedness both at home and at school showed the most positive academic and psychosocial outcomes at school. They performed better academically, had fewer school absences, and reported a more positive sense of peer-group membership in comparison to adolescents with low autonomy and connectedness in both settings or those with mismatched levels of autonomy and

connectedness at home and at school. In short, adolescents whose needs are met both at school and at home are likely to show a good fit with their lower secondary school.

Contrary to our expectations, peer support was not associated with profile membership. An explanation for this finding may be found in previous research showing that peers tend to be similar in engagement (Kindermann, 2007) and burnout (Kiuru et al., 2008). Receiving support from low-engaged peers may not foster a student's engagement, but hinder it as peers who condone low engagement do not serve as a buffer against it. Likewise, high support from peers with high burnout may lead to elevated levels of burnout in a student by reinforcing similar attitudes of cynicism, for instance.

In setting Hypothesis 3, we expected that background factors such as family's socioeconomic status, age, attending special education and gender were associated with profile memberships. However, gender was the only one of these factors that was associated with profile membership. Girls tended to belong to the high-engagement/low-burnout profile rather than the low-engagement/high-burnout profile (Reschly et al., 2008). Family's socioeconomic status was not associated with membership in the latent profiles, which was consistent with some previous findings (Tuominen-Soini & Salmela-Aro, 2014; Wang & Peck, 2013), and in this specific sample, suggests that the equal educational opportunities for students from diverse socioeconomic backgrounds (Savolainen, 2009) are still uniformly guaranteed in Finland with respect to support for student engagement.

Typically, younger students are more engaged with school than older students, indicating that younger students have a better fit with the school environment (Wang & Eccles, 2012). In the present study, no age effects were found for the latent profile. This finding may be due to the measure of cognitive engagement which focused on students' future aspirations and goals. In the present data, older students (those in Grade 9) tended to have higher aspirations

for their future education than younger students, which explains why a lower age was not related to high-engagement/low-burnout profile membership.

Special education tends to optimise the match between a student and the school environment (Thompson, Wehmeyer, & Hughes, 2010). In Finland, special education strives to strengthen individual students' positive ties with teachers and foster participation and investment in learning (Finnish National Board of Education, 2010). One possible explanation why our analysis did not find an association between special education status and an engagement/burnout profile may be that school personnel were able to identify low-engagement/high-burnout students and provide them with special education services, thereby fostering their adjustment and securing a good fit with the school.

Consistent with Hypothesis 4, self-esteem (Finn & Rock, 1997; Ma, 2003; You & Sharkey, 2009), academic performance (Ross, 2009; Salmela-Aro et al., 2009), school aspirations (Wang & Peck, 2013) and truancy (Maynard, Salas-Wright, Vaughn, & Peters, 2012) each correlated with the latent profiles. The students with high-engagement/low-burnout viewed school as relevant to their futures, had high self-esteem, performed well academically and did not play truant. This suggests an optimal match with their school environment, fostering educational resilience and persistence and a sense of belonging.

Limitations

Several limitations of this study are worth mentioning. First, the study utilised self-reported data, which can be vulnerable to biases. However, previous studies have shown that teacher (Appleton & Lawrenz, 2011) and parent reports (Wylie & Hodgen, 2012) on students' engagement tend to be overly positive. Therefore, despite the risk of bias, we believe that lower secondary school students are the key informants concerning their own school experiences (Appleton et al., 2006). Second, our measure of students' academic performance was based on students' reports of their grades in three specific subjects.

Although this measure tends to be more reliable than self-reported grade-point averages (Kuncel, Crede, & Thomas, 2005), future studies should use actual GPAs. Third, a mixed quantitative and qualitative methodology (for example, student interviews) would have complemented our understanding of the development of student profiles. Fourth, these results from Finnish schools may not be generalizable to other lower secondary school settings, and replication studies that account for cultural differences are needed. Unlike many other school systems, the schools in the Finnish systems are virtually all public schools with little variation in students' performance between schools. In addition, Finnish schools are relatively homogeneous culturally, and emphasise educational equity (Savolainen, 2009) and learning mastery as opposed to competition and high-stakes testing (Kumar, 2006). Future studies using instruments with established measurement invariances across cultures are needed to allow for reliable comparisons. Finally, the present study was cross-sectional. One cannot make inferences about causation from the present cross-sectional data. Rather, interpretations concerning the links between the variables are based on theory (person-environment fit in this study) and prior empirical findings. In order to examine causal relationships between the study variables, longitudinal data sets and a cross-lagged design would need to be applied.

Practical implications

This study shows that student engagement is dynamically associated with students' well-being at school: Students who had high levels of behavioural and cognitive engagement, reported low levels of school burnout. Thus, preventing downward spirals that can lead to dropping out of school requires regular monitoring of engagement and burnout with timely, tailored interventions early in lower secondary school. Students showing low engagement may benefit from a temporary easing of their school workload to fit their prevailing mental resources. One such intervention to increase students' person-environment fit is the Check & Connect program (Christenson et al., 2008), which provides needs-based, individualised

intervention to build positive, stable relationships between the student, family members and the school staff.

Conclusion

Overall, the findings indicated that the vast majority of lower secondary school students in this sample showed average or high levels of fit with their schools. The study provided strong empirical evidence of the interrelatedness of behavioural and cognitive aspects of student engagement and burnout. Students showing high engagement tended to experience low levels of school burnout, whereas students characterised by high levels of burnout tended to have low levels of behavioural and cognitive engagement. To address the prevailing problems of low engagement or disengagement, practitioners should focus on creating secure relationships with students, involving parents to support their adolescents' schooling, and preventing students' school truancy.

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Table 1
Correlations between All Variables, Means and Standard Deviations for Continuous Variables (N = 2485)

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1. Gender	1													
2. Special education status	0.12[a]	1												
3. Family's socio-economic status	0.09[a]	-0.02	1											
4. Age	0.00	0.08[a]	-0.04[c]	1										
5. Behavioural engagement	-0.15[a]	-0.24[a]	0.09[a]	-0.06[b]	1									
6. Cognitive engagement	-0.10[a]	-0.20[a]	0.13[a]	0.07[b]	0.65[a]	1								
7. School burnout	-0.04	0.21[a]	-0.12[a]	0.05[c]	-0.34[a]	-0.34[a]	1							
8. Teacher support	-0.02	-0.11[a]	0.09[a]	-0.15[a]	0.44[a]	0.62[a]	-0.36[a]	1						
9. Family support for learning	-0.04	-0.12[a]	0.15[a]	-0.06[b]	0.38[a]	0.55[a]	-0.25[a]	0.46[a]	1					
10. Peer support at school	0.00	-0.09[a]	0.19[a]	-0.03	0.17[a]	0.35[a]	-0.22[a]	0.32[a]	0.37[a]	1				
11. Self-esteem	0.25[a]	-0.11[a]	0.20[a]	0.06[b]	0.28[a]	0.29[a]	-0.48[a]	0.28[a]	0.30[a]	0.39[a]	1			
12. Academic performance	-0.19[a]	-0.43[a]	0.05[c]	-0.16[a]	0.38[a]	0.34[a]	-0.28[a]	0.21[a]	0.20[a]	0.08[a]	0.14[a]	1		
13. School aspiration	-0.16[a]	-0.34[a]	0.07[b]	0.05[c]	0.31[a]	0.33[a]	-0.22[a]	0.19[a]	0.23[a]	0.13[a]	0.14[a]	0.49[a]	1	
14. Truancy	0.00	0.21[a]	-0.07[b]	0.16[a]	-0.40[a]	-0.30[a]	0.28[a]	-0.29[a]	-0.22[a]	-0.10[a]	-0.17[a]	-0.29[a]	-0.23[a]	1
M	-	-	-	14.71	3.02	3.03	3.15	2.79	3.35	3.12	2.73	7.81	-	-
SD	-	-	-	0.92	0.51	0.43	1.08	0.52	0.50	0.48	0.48	1.07	-	-

Note. [a] $p < .001$; [b] $p < .01$; [c] $p < .05$. Two-tailed Pearson's *r*. *M* = Mean. *SD* = Standard deviation. Gender (1 = male). Special education status (1 = receives special education services. Truancy (1 = truancy).

Table 2

Deciding the Number of Latent Profiles: Fit Indices and Group Sizes of the Estimated Models

No. of profiles	No. of free parameters	LL	AIC	BIC	Entropy	*p*VLMR	Group sizes
2	10	-6,279.638	12,579.276	12,637.400	0.69	<0.001	676, 1795
3	14	-6,006.426	12,040.852	12,122.226	0.73	0.001	137, 1003, 1331
4	18	-5,888.726	11,813.451	11,918.074	0.73	0.232	546, 438, 62, 1425
5	22	-5,820.264	11,684.528	11,812.401	0.75	0.001	479, 23, 577, 85, 1307
6	26	-5,782.965	11,617.931	11,769.053	0.78	0.016	97, 23, 21, 1269, 478, 583

Note. LL = Log-likelihood. AIC = Akaike information criterion. BIC = Bayesian information criterion. *p*VLMR = Vuong-Lo-Mendell-Rubin likelihood ratio test.

Table 3

Validating the Three-Profile Model: Fit Indices and Group Sizes of the Estimated Models

No. of profiles	No. of free parameters	LL	AIC	BIC	Entropy	*p*VLMR	Group sizes
2	10	-2007.289	4034.578	4081.622	0.63	<0.001	318, 498
3	14	-1912.485	3852.971	3918.833	0.78	0.025	99, 204, 513
4	18	-1884.258	3804.516	3889.195	0.81	0.172	489, 193, 8,126
5	22	-1867.986	3779.973	3883.470	0.74	0.477	105, 6, 108, 406, 191
6	26	-1852.422	3756.845	3879.160	0.78	0.036	93, 127, 16, 3, 404, 173

Note. LL = Log-likelihood. AIC = Akaike information criterion. BIC = Bayesian information criterion. *p*VLMR = Vuong-Lo-Mendell-Rubin likelihood ratio test.

Table 4

Latent Profile Raw Score Means, Standard Deviations (in parentheses), and Intra-Class Correlations

Variables applied in identification of latent profiles	Low-engagement/ high-burnout	High-engagement/ low-burnout	Average-engagement/ average-burnout	
	M (SD)	*M (SD)*	*M (SD)*	*ICC*
Behavioural engagement	1.96 (0.41)	3.45 (0.30)	2.81 (0.33)	0.79
Cognitive engagement	2.06 (0.44)	3.37 (0.24)	2.87 (0.25)	0.81
School burnout	4.16 (1.12)	2.59 (0.91)	3.46 (0.98)	0.31

Note. ICC = Intraclass correlation. The differences of the means on each row are statistically significant from each other at $p < 0.001$ using the Sidak post hoc test.

Table 5

The Unstandardised Results of the Multinomial Logistic Regression Analyses Associations between Background, Contextual and Student Characteristics and Aspirations Factors with Latent Profiles

Low-engagement/high-burnout profile as compared with:						
	High-engagement/low-burnout profile			Average-engagement/ average-burnout profile		
Factors	*β*	*S.E.*	*OR*	*β*	*S.E.*	*OR*
Background factors						
Gender	-1.21	0.30	0.30[a]	-0.47	0.26	0.63
Special education status	-0.48	0.29	0.62	-0.46	0.25	0.63
Family's socio-economic status	0.15	0.14	1.16	0.06	0.13	1.06
Age	0.28	0.14	1.32	0.18	0.12	1.19
Contextual support						
Teacher support	3.50	0.26	33.13[a]	1.73	0.18	5.62[a]
Family support for learning	2.12	0.27	8.31[a]	0.80	0.22	2.22[a]
Peer support at school	0.36	0.29	1.43	0.29	0.23	1.33
Student characteristics and aspirations						
Self-esteem	1.62	0.32	5.06[a]	0.52	0.29	1.68
Academic performance	0.76	0.15	2.13[a]	0.38	0.13	1.47[a]
School aspiration						
High school	2.15	0.99	8.62[c]	1.04	0.71	2.83
Vocational school	1.67	0.94	5.31	1.01	0.64	2.76
School other than high school or vocational school	2.07	1.31	7.92	1.02	0.87	2.76
School truancy	-1.92	0.29	0.15[a]	-1.02	0.25	0.36[a]

Note. The reference group is the low-engagement/high burnout profile. OR = odds ratio. S.E. = standard error. Gender (1 = male). Special education status (1 = receives special education). School aspiration (1 = high school, 1 = vocational school, 1 = school other than high school or vocational school). School truancy (1 = truancy).
[a] $p < .001$; [c] $p < .05$. Two-tailed Pearson's *r*.

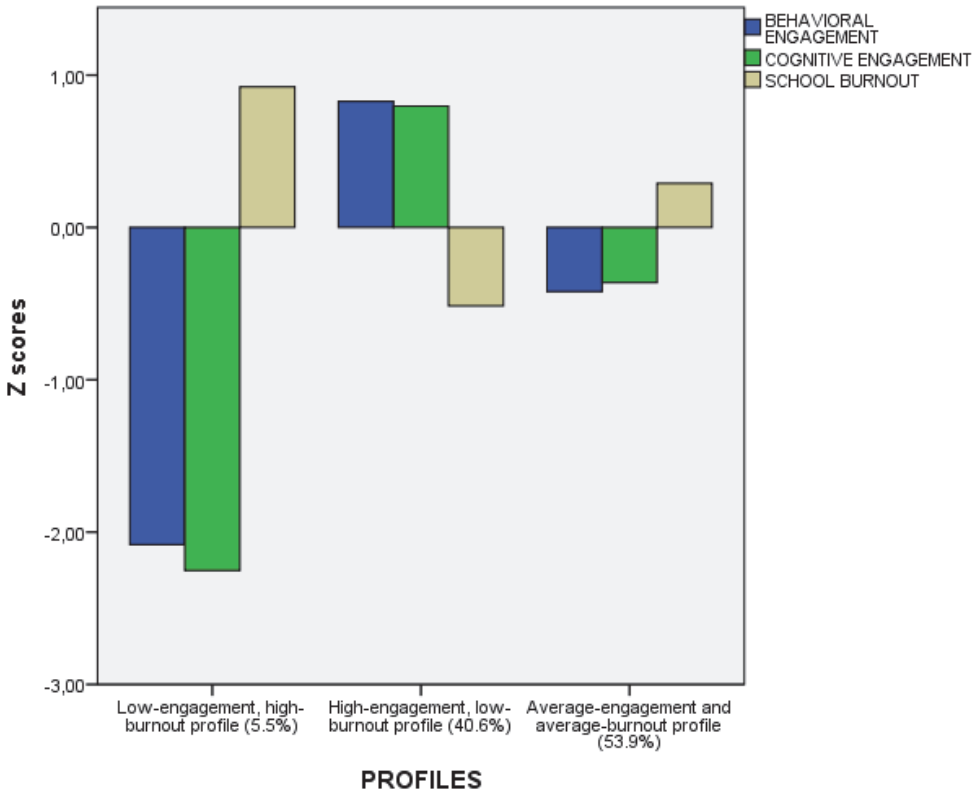

Figure 1. Students' behavioural engagement, cognitive engagement and school burnout standardised means according to the latent profile membership.

III

STUDENT BEHAVIORAL ENGAGEMENT AS A MEDIATOR BETWEEN TEACHER, FAMILY, AND PEER SUPPORT AND SCHOOL TRUANCY

by

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Student behavioral engagement as a mediator between teacher, family, and peer support and school truancy

Tuomo E. Virtanen [a,*], Marja-Kristiina Lerkkanen [b], Anna-Maija Poikkeus [b], Matti Kuorelahti [a]

[a] Department of Education, Special Education, University of Jyväskylä, Finland
[b] Department of Teacher Education, University of Jyväskylä, Finland

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ABSTRACT

This study investigated the associations between student's behavioral engagement; teacher, family, and peer emotional support; and school truancy. Student-reported data of 821 Finnish junior high school students were analyzed using structural equation modeling. Teacher and family support were positively associated with student behavioral engagement, which in turn was negatively associated with truancy. Behavioral engagement mediated the associations between teacher and family emotional support and truancy. The results highlight the pivotal roles of teacher and family emotional support in fostering student behavioral engagement and preventing truancy in junior high schools. Students who are attached to their teachers and parents are likely to conform to their expectations and not to play truant from school.

1. Introduction

Absences from school for no legitimate reason i.e., school truancy, are associated with many negative school and post-school outcomes such as poor academic performance, unemployment, poor level of education, and school dropout (Darmody, Smyth, & McCoy, 2008). Hence, truancy is a cause of public concern. Despite the well-known negative consequences of school truancy, definitions of truancy vary (Sutphen, Ford, & Flaherty, 2010). The social control theory holds that when students are attached to norm-relevant significant others, such as teachers and parents, they want to conform to their expectations and accept the social norms they represent (Hirschi, 1969; Veenstra, Lindenberg, Tinga, & Ormel, 2010). As suggested by participation-identification model (Finn, 1989), if attachment to norm-relevant significant others is lacking, student may show low levels of participation in classroom activities and gradual withdrawal from school by truanting. From these two perspectives, truancy is conceptualized as a potential outcome of lacking personal attachment to those disapproving truancy and low levels of behavioral commitment to school work. Truancy in the present study is defined as absences which students themselves indicate would be unacceptable to norm-relevant others, teachers and parents (see Malcolm, Wilson, Davidson, & Kirk, 2003).

At the heart of prevention of school dropout and truancy is the concept of student engagement (Appleton, Christenson, Kim, & Reschly, 2006). Engagement is a relational process activated by reciprocal interpersonal relationships (Pianta, Hamre, & Allen, 2012; Skinner & Belmont, 1993) with junior high school being the time of waning engagement (Skinner, Furrer, Marchand, & Kindermann, 2008). Typically, student engagement is viewed as a mediator between students' educational contexts and student outcomes (Appleton et al., 2006; Connell & Wellborn, 1991; Skinner et al., 2008). Feeling supported in school does not lead to positive school outcomes unless students are actively behaviorally engaged in school activities. Facilitating student behavioral engagement is expected to lead to increased probability of positive schooling outcomes, such as academic success (Skinner & Pitzer, 2012) and school completion (Archambault, Janosz, Fallu, & Pagani, 2009). Previous research suggests that students' experiences of attachment at school facilitate their behavioral engagement, which, in turn, contributes to educational outcomes (Connell & Wellborn, 1991; Finn, 1989; Klem & Connell, 2004; Skinner & Pitzer, 2012; Wang & Eccles, 2012a) such as school attendance.

This study contributes to the literature by combining two perspectives on truancy and engagement research, namely those of social control theory and participation-identification model into the framework of engagement as a mediator. We tested a model where students' attachment to school-related others (labeled "emotional support") is expected to contribute positively to students' behavioral engagement (as suggested by social control theory). Behavioral engagement, in turn, is expected to associate negatively with school truancy (as suggested by participation-identification model). Finally, we tested whether the association between emotional support and school truancy was mediated by student behavioral engagement (as suggested by

* Corresponding author at: Department of Education, University of Jyväskylä, Finland. Tel.: +358 40 8053636.
E-mail addresses: tuomo.e.virtanen@jyu.fi (T.E. Virtanen), marja-kristiina.lerkkanen@jyu.fi (M.-K. Lerkkanen), anna-maija.poikkeus@jyu.fi (A.-M. Poikkeus), matti.kuorelahti@jyu.fi (M. Kuorelahti).

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several engagement models) after controlling a number of statistical covariates on engagement and truancy. The expected associations are depicted in Fig. 1. Typically, student behavior at school and school attendance have been treated as parts of the same construct, "behavioral engagement" (e.g., Archambault et al., 2009). This combination is problematic as students who are inattentive and come unprepared to classes may not play truant (see Betts, 2012). Engagement studies typically examine student cognitive functioning outcomes such as academic achievement (e.g., Furrer & Skinner, 2003; Skinner & Pitzer, 2012) or school completion (Archambault et al., 2009) but school truancy and academic achievement are not necessarily associated in a linear fashion as some truant youth do well academically (Maynard, Salas-Wright, Vaughn, & Peters, 2012). This may indicate that the precursors of truancy could differ from those of academic achievement.

Teachers have been found to occupy a central role in promoting positive student school outcomes such as school participation (Wang & Holcombe, 2010); student behavioral engagement (Murray, 2009); school compliance (Wang & Eccles, 2012b); and effort, persistence, and participation in school work (Furrer & Skinner, 2003). Veenstra et al. (2010) compared the effects of pre-adolescents' attachments to parents, teachers, and classmates on truancy. They found attachment to teachers showing the strongest negative relationship with persistent truancy, while there was no association between attachment to classmates and truancy. Parents constitute another well-documented source of emotional support, which, according to the findings by Furrer and Skinner (2003), contribute more strongly to student behavioral engagement than that of teachers and peers. Based on their longitudinal analysis, Wang and Eccles (2012b) concluded that parent social support functioned as a protective factor on adolescent self-reported behavioral engagement (school compliance). Parent support and responsiveness, unlike parental overprotection (Studsrod & Bru, 2009) or condoning disengagement from school (Attwood & Croll, 2006), prevent adolescents' school engagement from becoming negatively affected by their peers (Demanet & Van Houtte, 2012; Fuligni & Eccles, 1993) as evidence on the contribution of peers as a source of support affecting engagement is controversial. Sometimes its impact on students' behavioral engagement has been found to be positive (Furrer & Skinner, 2003), sometimes nonexistent (Li, Lerner, & Lerner, 2010), and sometimes negative (Wang & Eccles, 2012b) stemming from the fact that students' school-related problems tend to cluster at the peer group level (Kiuru, 2008). In such peer groups, there is a risk of development of a collective atmosphere condoning absences from school and peer deviancy training (see Mathys, Hyde, Shaw, & Born, 2013). Taken together, these results suggest that teacher and parent support may be more important than peer support with respect to student behavioral engagement. Students may be attached to their peers, but in case these peers do not have a clear normative position against truancy, they do not serve as significant others with regard to behavioral engagement (Veenstra et al., 2010).

High levels of self-reported behavioral engagement are associated with higher levels of attendance — especially in middle school students (Klem & Connell, 2004). Respectively, students reporting low participation in school activities have been found to report high rates of skipping school (Maynard et al., 2012). The association between self-reported low behavioral engagement and skipping school is high, especially among 10- to 16-year-old urban minority youth (Connell, Spencer, & Aber, 1994).

Given the scarcity of literature on understanding the causes of truancy (Veenstra et al., 2010) and studies treating truancy as an outcome, researchers in this study set out to investigate the associations between emotional support, student engagement, and school truancy. First, we examined the associations between student-perceived teacher, family, and peer emotional support and behavioral engagement. In line with social control theory (Hirschi, 1969; Veenstra et al., 2010) and earlier empirical findings, both teacher (Croninger & Lee, 2001; Murray, 2009; Wang & Eccles, 2012b; Wang & Holcombe, 2010) and parent support (Wang & Eccles, 2012b) were expected to contribute to student behavioral engagement positively and to a greater extent than support from peers (Lam, Wong, Yang, & Liu, 2012; Li, Lerner, & Lerner, 2010) (Hypothesis 1). Second, drawing on the participation-identification model (Finn, 1989) and previous findings (Connell et al., 1994; Klem & Connell, 2004; Maynard et al., 2012), we expected higher levels of behavioral engagement being associated with lower levels of school truancy (Hypothesis 2). Third, as suggested by models of student engagement (Appleton et al., 2006; Connell & Wellborn, 1991), we expected student behavioral engagement to mediate the associations between students' perceptions of emotional support and school truancy after controlling relevant student background characteristics (Hypothesis 3). Concerning student background characteristics with student engagement and school truancy, we do not posit a hypothesis.

2. Method

2.1. Context

In Finland, compulsory comprehensive education lasts nine years, and during the last three years (junior high school), instruction is given by the subject teachers. Teachers follow the national core curriculum for basic education. All teachers are responsible for promoting positive proximal processes, such as student engagement in the classroom, whereas the home room teacher bears the main responsibility for monitoring student progress and reacting to lapses of school attendance. A nationwide web-based reporting system (Wilma) is employed in most schools; yet, at the time of data collection, it was not used in a consistent manner in junior high schools. Through the Wilma system, parents are requested to provide information for their children's school absences, and interventions are planned together with the school welfare team when necessary. The average number of students in a general education classroom in Finnish junior high schools is on average approximately 17

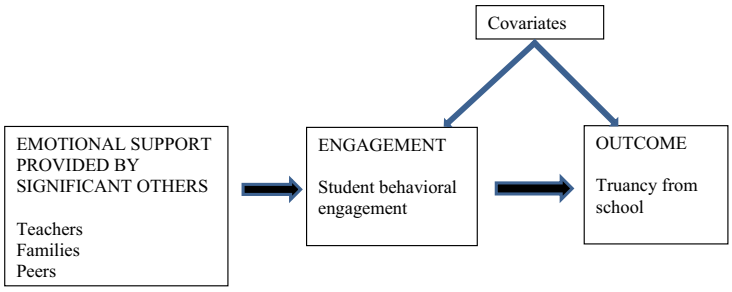

Fig. 1. Engagement as a mediator between emotional support provided by significant others and outcomes.

students. Despite the strong emphasis on providing support to all students, the level of Finnish students' behavioral engagement is not optimal (OECD, 2011), and nine percent of junior high school students report two or more truanted full school days during the previous 30 days (School Health Promotion Study, 2013). The variation in school truancy between schools in different regions of Finland is very small, being less than five percentage points (School Health Promotion Study, 2010).

2.2. Participants and procedure

The sample consisted of 821 students (mean age 14.4 years, 49.7% male) from seven volunteering typical Finnish public junior high schools. The schools are located in Central Finland and participated in a nationwide three-tiered support system initiative. In all participating schools, the language of instruction was Finnish. Within each school, the school principals selected the classrooms for the study through random drawings. The home room teachers of the participating schools informed the students' parents about the purpose of the study, and 85% of the parents confirmed student participation with written consent. The data were collected in November and December of 2010. Students completed the Internet-based questionnaire in the schools' information technology classrooms during one class session (45 min). Filling out the questionnaire took between 15 and 20 min.

2.3. Measures

2.3.1. Perceived emotional support

Student experiences of school-related support were rated using the emotional engagement subscales of the Student Engagement Instrument (SEI; Appleton et al., 2006). They include items on student perceived teacher support (9 items; e.g., "At my school, teachers care about students"); family/guardians' support (4 items; e.g., "When I have problems at school, my family/guardian(s) are willing to help me"); and peer support (6 items; e.g., "Other students at school care about me"). The items were rated on a 4-point scale (1 = *strongly agree*; 4 = *strongly disagree*). The items were reverse-coded so that higher scores indicated a higher level of perceived support.

2.3.2. Behavioral engagement

Student behavioral engagement was measured with the middle school student version of the Research Assessment Package for Schools (RAPS-SM; Wellborn & Connell, 1987). The RAPS engagement scale consists of five items assessing the extent to which students exert effort in their schoolwork, pay attention in class, and prepare for classes. The four items used were: "I work very hard on my schoolwork," "I don't try very hard in school," "I pay attention in class," and "I often come to class unprepared." The items were rated on a 4-point scale (1 = *strongly agree*; 4 = *strongly disagree*) and reverse-coded so that higher scores indicated higher engagement.

2.3.3. School truancy

Self-reported truancy was measured by one item "I play truant from school" assessing how often the student played truant (Studsrod & Bru, 2009). The response options for the statement were "never," "seldom," "occasionally," "quite often," and "often." Self-reported truancy was treated as an observed dependent variable in subsequent analyses.

2.3.4. Background characteristics

We entered five self-reported dummy coded variables into the analyses as covariates: gender (1 = female), immigrant status of family (1 = at least one parent not born in Finland), special education status (1 = receives special education services provided by the special education teacher), remedial support status (1 = receives remedial instruction services provided by the subject teacher), and family structure (1 = lives in foster institution or group home; 2 = lives with both parents in turns due to joint custody; 3 = lives with one parent and his/her new partner; 4 = lives with one parent; 5 = lives with both parents). Other covariates were: perceived family socio-economic status (1 = low income; 5 = high income), students' own educational aspirations after basic education (1 = not intending to continue studying; 4 = high school), student's age (in years), and self-reported academic achievement (grade point average based on last school report in Finnish language and literature, Mathematics, and English; 4 = failed; 10 = excellent). The Cronbach's alpha for academic achievement was .78.

The correlation coefficients and reliability measures (Cronbach's alphas and factor score determinacies) of the four latent factors—student-perceived teacher support, family support, peer support, and behavioral engagement—and school truancy are presented in Table 1.

2.4. Analysis strategy

The estimation was conducted with Mplus version 6.12 using the maximum likelihood estimation with non-normality robust standard errors. The number of missing values was small, varying between 0.0 and 3.0% of all variable values. Little's (1988) test showed that the missing values were completely random: $\chi^2 = 237$ (1), $p = .626$. Thus, the model parameters were estimated using the full-information maximum likelihood estimation, allowing all the present data to be used (Muthén & Muthén, 1998–2010). Student school membership was taken into account by creating $k - 1$ dummy variables, which were included in the model as covariates. Students were also naturally nested within classrooms, but design effects for endogenous variables were low (1.7 for school truancy and 1.5 for student behavioral engagement). Therefore, the analyses were conducted using the Mplus COMPLEX type analysis. The COMPLEX option accounts for the nested structure by adjusting the standard errors of the estimated coefficients. The goodness-of-fit of the estimated models was evaluated according to the following indicators: by four absolute fit indices, χ^2, chi square to degrees of freedom ratio (χ^2:*df*), Standardized Root Mean Square Residual (SRMR), Root Mean Square Error of Approximation (RMSEA), and two comparative fit indices: Comparative Fit Index (CFI) and Tucker Lewis Index (TLI). The cutoff values for well-fitting models were as follows: $\chi^2 = ns$ ($p > .05$), SRMR < .05, RMSEA < .05, CFI > .95, TLI > .95, SRMR (Byrne, 2012), and χ^2: $df < 2$ (Ullman, 2001).

3. Results

The variables correlated with each other at $p < .001$, with the exception of Peer Emotional Support, which was uncorrelated with School Truancy. First, we tested the measurement model with confirmatory factor analyses (CFA). One item ("I feel safe at school") measuring a sense of school belonging (Wang, Willett, & Eccles, 2011) rather than

Table 1
Correlations between study key variables, number of items in factors, Cronbach alphas, and factor score determinacies.

	1.	2.	3.	4.
1. Teacher emotional support (8 items)				
2. Family emotional support (4 items)	.61***			
3. Peer emotional support (6 items)	.45***	.43***		
4. Student behavioral engagement (4 items)	.46***	.41***	.22***	
5. School truancy	−.22***	−.21***	−.08 *ns*	−.48***
Cronbach alphas	.86	.80	.86	.70
Factor score determinacies	.94	.91	.96	.87

Note. *ns* = non-significant.
*** $p < .001$.
** $p < .01$.
* $p < .05$.

teacher emotional support was removed from the model. Additionally, two same scale item residuals were allowed to freely covariate. The final measurement model consisting of four intercorrelated factors and 22 items showed good measurement properties: $\chi^2(201) = 388.983$, $p < .001$, χ^2: $df = 1.94$, RMSEA = .034, RMSEA 90% C.I. [.029–.039], CFI = .963, TLI = .958, and SRMR = .043. The standardized factor loadings were all significant at $p < .001$.

Second, we analyzed structural paths between the latent factors and the observed dependent variable (truancy) with covariates added to the model. All the expected covariates were first included in the model, and then the non-significant covariates were removed one by one. The final structural model provided a good fit: $\chi^2(420) = 755.858$, $p < .001$, χ^2: $df = 1.80$, RMSEA = .031, RMSEA 90% C.I. [.028–.035], CFI = .944, TLI = .939, and SRMR = .056.

3.1. Associations between perceived teacher, family, and peer emotional support; student behavioral engagement; and school truancy

The results (Fig. 2) showed, first, that students' perceptions of teacher support ($\beta = .29$, $p < .001$) and family support ($\beta = .18$, $p < .01$) were positively associated with behavioral engagement, but peer emotional support and student behavioral engagement were not associated. Second, there was a significant negative association between student behavioral engagement and truancy ($\beta = -.48$, $p < .001$). Third, there were two significant indirect effects: behavioral engagement at school mediated both the effect of teacher emotional support on truancy (estimate = −.14, $p < .001$) and the effect of family emotional support on school truancy (estimate = −.08, $p < .01$).

3.2. Covariates associated with student engagement and self-reported school truancy

The statistically significant covariates contributing to student behavioral engagement were high academic achievement ($\beta = .37$, $p < .001$), female gender ($\beta = .12$, $p < .01$), and living with one parent and his/her partner, living with one parent and living with both parents regarding family structure ($\beta = .11$, $p < .05$; $\beta = .10$, $p < .05$; $\beta = .17$, $p < .01$ respectively). Further, the statistically significant covariates directly contributing to truancy were age ($\beta = .10$, $p < .001$) and female gender ($\beta = .10$, $p < .01$): girls reported truancy more often than boys and older students more often than younger students.

4. Discussion

This study investigated the associations between perceived teacher, family, and peer emotional support; student behavioral engagement; and novel educational outcome school truancy among Finnish junior high school students. The central finding of the present study confirmed our hypotheses in that teacher and parent emotional support were positively associated with student behavioral engagement, which, in turn, was negatively associated with school truancy. Additionally, the relationship between students' experiences of teacher and family support and school truancy was explained by student behavioral engagement. The results highlight the importance of attachment with significant others and students' behavioral engagement when tackling school truancy.

As hypothesized (Hypothesis 1), we found that emotional support from teachers and parents were more important for student engagement than support from peers (Lam et al., 2012; Li et al., 2010). Students reporting experiences of higher teacher and parent emotional support indicated higher levels of behavioral engagement (Klem & Connell, 2004). Social control theory posits that being attached to norm-relevant others, such as teachers and parents (e.g., Croninger & Lee, 2001), buffers against risks in life (Hirschi, 1969). Attachment serves as an effective control mechanism against disengagement from school since those students attached to significant others want to conform to their expectations and accept the social norms they represent. No direct link emerged between peer support and engagement (Li et al., 2010), which may imply the existence of different peer groups in the data. Positive peer groups having a clear normative position against truancy facilitate student behavioral engagement. Instead, if students' peers relate negatively to school and accept truancy, peer support may discourage student engagement and school adjustment (Demanet & Van Houtte, 2012; Kiuru, 2008; Wang & Eccles, 2012b) and increase school truancy. Obviously, peers having neutral attitudes on truancy cannot help students avoid truancy from school.

In line with previous studies, this study showed that teachers hold the most important role in promoting student behavioral engagement (Furrer & Skinner, 2003; Murray, 2009; Wang & Eccles, 2012b; Wang & Holcombe, 2010). Teachers work in the classroom, which is one of the most proximal settings for influencing students' engagement (Furrer & Skinner, 2003; Pianta et al., 2012). In addition to being a subject specialist, teachers can act as an emotional resource, making their students feel related to others, which enhances adolescents' behavioral

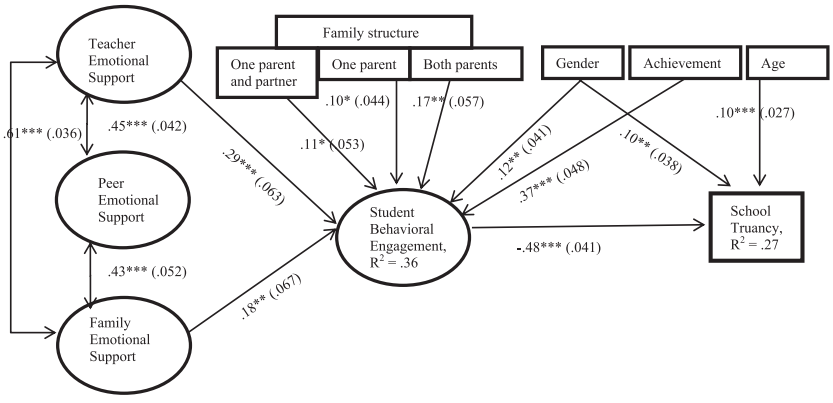

Fig. 2. Significant standardized associations and standard errors between student-reported teacher, family, and peer support, student behavioral engagement, and school truancy. Note: Achievement = students' academic achievement. Gender (1 = female). Family structure (1 = lives with one parent and his/her new partner; 1 = lives with one parent; 1 = lives with both parents). All significance values are two-tailed. ***$p < .001$. **$p < .01$. *$p < .05$.

engagement (Connell & Wellborn, 1991) — especially during the middle school years (Klem & Connell, 2004). In accordance with previous studies (e.g., Wang & Eccles, 2012b), parent emotional support associated positively with student behavioral engagement. However, this association was weaker in magnitude than the association between teacher support and student behavioral engagement. Whereas teachers are unlikely to accept truancy (Croninger & Lee, 2001), there may be parents who condone adolescents' disengagement from school (Attwood & Croll, 2006). Those adolescents are at risk of associating with negative peers, which increases the risk of shared positive attitude toward low engagement, unaccepted absences from school, and peer deviancy training (see Mathys et al., 2013).

In accordance with Hypothesis 2, the results indicated higher levels of behavioral engagement being associated with lower levels of school truancy (Connell et al., 1994; Klem & Connell, 2004; Maynard et al., 2012). Participation-identification model (Finn, 1989) emphasizes the pivotal role of student participation in school-related activities. Lacking participation leads to poor school performance, which, in turn, contributes to emotional and behavioral withdrawal in cyclical manner. Notably, participation is characterized in four hierarchically increasing and qualitatively different levels, starting from level-one participation—such as being prepared in classes—and ending up with participation in school governance (level-four participation). Keeping in mind that there were no direct links from student-perceived support to school truancy, the results of the present study imply that the most straightforward way to decrease truancy rates is to focus on strengthening students' lower level participation, such as participation in classroom activities.

Supporting Hypothesis 3, the results indicate that student behavioral engagement is a crucial factor in explaining the impact of emotional support on schooling outcomes (Appleton et al., 2006; Connell & Wellborn, 1991; Skinner & Pitzer, 2012), such as not truanting from school. The mediating role of behavioral engagement may be particularly relevant in the context of junior high school, where instruction is given by subject specialists and student engagement exhibits a decreasing trend (e.g., Skinner et al., 2008). As compared to elementary school, where students are primarily taught by the same classroom teacher, the relationships between junior high school students and teachers are less close (Marks, 2000), thus potentially limiting the positive direct influence of teacher emotional support on student school attendance. The results of the present study imply that, in order to promote students' school attendance, the attention should be focused on the students' relationships with teachers and parents along with the most proximal engagement behaviors. The promotion of good relationships with students and their behavioral engagement such as class-related initiative and being prepared for classes (Finn, 1989) are under the control of individual teachers. Teacher emotional support fosters student behavioral engagement (Hirschi, 1969; Wang & Eccles, 2012b), which, in turn, can lead the teacher to become more emotionally supportive and the students more engaged (Finn, 1989; Skinner & Belmont, 1993). These reciprocal processes of teacher emotional support and student behavior contribute to students internalizing a sense of school belonging and valuing school-relevant goals (Connell & Wellborn, 1991; Finn, 1989) and may result in lasting enjoyment, deep commitment, and investment in learning (see also Finn, 1989; Fredricks, Blumenfeld, & Paris, 2004; Skinner et al., 2008). Obviously, students skipping full school days already have a detached attitude in terms of school work and are disconnected from school norms and expectations. If lack of teacher and family emotional support is already manifested in a student who is actively avoiding entire school days (Finn, 1989; Wang & Eccles, 2012a), providing the student with emotional support may not have a direct effect on junior high school students' decision not to play truant from school. They are already quite likely beyond the reach of the school, requiring intensive cross-agency interventions (Furlong et al., 2003). A different picture may have emerged if truancy had been operationalized as skipping individual classes. Students may attend classes that are organized by teachers to whom students are attached and skip classes of teachers considered to be non-significant.

Our findings indicate that a family structure with one or both parents at home (Brown, 2004), female gender (Archambault et al., 2009; Linnakylä & Malin, 2008), and high academic achievement (Linnakylä & Malin, 2008) each significantly explained student engagement. The covariates explaining self-reported school truancy were students' age and gender, with older students (Veenstra et al., 2010) and girls (School Health Promotion Study, 2013) self-reporting a greater tendency for truancy than younger students and boys. Higher incidences of truancy among girls than among boys may be explained by the data gathering procedure. Since the girls in the present sample were more engaged than the boys, they might also have been more engaged (i.e., more honest) in self-reporting truancy. This might have yielded in an under-estimation of boys' truancy rates. This notion was supported as the results were confirmed using truancy information based on Wilma registers as an outcome variable. The other variables held their statistical significance, but gender became non-significant.

5. Practical implications

The present study indicates that close social bonds with significant others are associated with higher levels of behavioral engagement and, thus, a lower incidence of school truancy. An emotionally supportive and behaviorally engaging classroom environment mitigates truancy, as does keen parental interest and emotional involvement in their children's schooling. These results are particularly important in adolescence, at the time of waning engagement, decreasing experiences of support (Furrer & Skinner, 2003), and increasing truancy rates (e.g., Veenstra et al., 2010). The challenge for schools is in meeting the adolescents' inherently relational nature and changing needs for autonomy and support. School environments characterized by autonomy, teacher support, performance goals, mastery goals, and discussion contribute to school participation (Wang & Holcombe, 2010). Schools where all students are offered a classroom context with high teacher sensitivity and responsiveness to students' social/emotional needs, chances for discussions, high expectations for learning, choices for autonomy, and a regard for the adolescent perspective are likely to provide a good fit between adolescents' needs and school environment, thus, reducing truancy rates.

The findings of the present study also highlight the importance of making parents more aware of their role in adolescents' academic engagement and success (Furrer & Skinner, 2003). Junior high school students' high levels of school engagement and low levels of skipping school are best fostered by a parenting style characterized by high responsiveness, high demands (Simons & Conger, 2007), and low levels of overprotection (Studsrod & Bru, 2009) and strictness (Fuligni & Eccles, 1993). At the same time, parents should make known their norms against truancy. This should be done in cooperation with teachers in order to make students feel intensively supported by several norm-relevant significant others (Sutphen et al., 2010).

Further studies should examine the factors associated with truancy in junior high schools by means of person-centered profile analysis (see Maynard et al., 2012). This would enable the revelation of subgroups of students with different dispositions toward school and take into account the person–environment fit by planning personalized interventions. Further, longitudinal analyses are needed in order to examine the trajectories of latent profiles during adolescence and to analyze the role of successful transition from elementary to junior high school. Cross-cultural research is needed for accumulating understanding on the extent to which school truancy; student behavioral engagement; and teacher, family, and peer support are content- or student specific. There may be differences between school systems, for instance, in the extent to which they encourage parental involvement in students' education. Such information might give insight into increasing student engagement and decreasing school truancy.

6. Limitations

There are some limitations in the present study that need to be addressed. First, the study variables are based on students' self-reports — the validity of which can be questioned. Truancy is an interpretative phenomenon, and thus it may be demanding for students to decide whether their absences were legitimate or illegitimate. Second, the study was correlational and cross-sectional, the design did not allow for tests of causal inference, and other models could apply to the same data. Third, there is always an increased risk that the focal students were likely absent on the day of the data collection. If this were the case, the prevalence of truancy may be under-estimated. The confidence in results, however, is increased by several features, including the large sample size, the use of error-free latent constructs, and model confirmation with truancy information derived from school registers.

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