INDIVIDUAL, FAMILY AND TEACHER LEVEL CORRELATES OF BEHAVIORAL AND COGNITIVE SCHOOL ENGAGEMENT

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ABSTRACT

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The aim of the present study was to examine predictors of behavioral school engagement and two cognitive school engagement subdimensions, future aspirations and control and relevance of school work. Another matter of interest was to find out what kind of different school engagement profiles can be identified in terms of engagement, and what are the factors to predict these engagement profiles. The cross-sectional data of the study consisted of Finnish upper comprehensive school students (N=841, 13–16 years) from seven schools located in Middle Finland.

Participants answered self-report questionnaires during winter 2010 and 2011. The data was analyzed with multiple regression analysis, multinomial regression analysis and cluster analysis. Hierarchical cluster analysis and K-mean cluster analysis were used.

As hypothesized, teacher-student relationships predicted strong behavioral engagement and experience of schoolwork relevance. Family support affected strongly the adolescents' future aspirations. Four engagement profiles were identified, and the lowest engagement profiles differed from strongly engaged group in terms of teacher-student relationship, self-esteem and special education status. Results also suggest that there are fairly disengaged students with high future aspirations and strong family support. Study results indicate that Finnish adolescents have positive attitudes to future education that vary mostly due to parent values. However, in promoting relevance of school work and behavioral engagement, warm interactions and prevention of weak teacher-student relationships in school are important.

Keywords: school engagement, teacher-student relationship, self-esteem, adolescence, future goals

TIIVISTELMÄ

Tutkimuksen tarkoituksena oli selvittää behavioraalisen kouluun kiinnittymisen ja kahden kognitiivisen kouluun kiinnittymisen alaulottuvuuden, koulun merkityksen ja koulutyön hallinnan sekä tulevaisuuden päämäärien taustatekijöitä. Lisäksi tutkittiin, millaisia kouluun kiinnittymisen ryhmiä näiden ulottuvuuksien perusteella voidaan muodostaa ja mitä tekijät selittävät muodostettuihin ryhmiin kuulumista. Tutkimuksen aineisto koostui suomalaisista yläkoulun oppilaista (N=841, 13–16 vuotta) ja se kerättiin seitsemällä Keski-Suomessa sijaitsevalla koululla talvella 2010–2011. Kouluun kiinnittymisen sekä kiinnittymisen ryhmien selittäjiä tutkittiin lineaarisen ja multinomiaalisen regressioanalyysin avulla. Ryhmien muodostamisessa käytettiin hierarkkista klusterianalyysiä ja K-means –klusterianalyysiä.

Opettaja-oppilassuhde osoittautui voimakkaimmaksi koulun merkityksen ja koulutyön hallinnan kokemuksen sekä behavioraalisen kiinnittymisen selittäjäksi. Toisaalta oppilaiden tulevaisuuden päämääriä selitti voimakkaimmin perheen tuki. Analyysien perusteella pystyttiin lisäksi muodostamaan neljä kouluun kiinnittymisen ryhmää. Heikoimmin kiinnittyneiden ryhmään kuulumista ennusti selkeimmin heikko opettaja-oppilassuhde, heikko itsetunto sekä erityisopetukseen osallistuminen, kun taas vahvimmin kiinnittyneet erottuivat joukosta yleisesti vahvan ympäristön tuen, vahvan itsetunnon ja naissukupuolen perusteella. Yhdessä ryhmistä kouluun kiinnittyminen oli heikkoa tai keskinkertaista, mutta tulevaisuuden päämäärät kunnianhimoiset. Tähän ryhmään kuulumista ennusti erityisesti perheen tuki. Tulosten perusteella suomalaiset nuoret pitävät tulevaisuuden koulutusta tärkeänä, mutta koulutuksen arvostuksen eroihin vaikuttavat ennen kaikkea perheen arvostukset. Koulunkäynnin merkityksellisyyden ja behavioraalisen kiinnittymisen kannalta opettaja-oppilassuhteella taas on suuri merkitys, ja kouluissa tulisikin keskittyä hyvien ihmissuhteiden vaalimiseen ja pyrkiä ehkäisemään kielteisten opettaja-oppilassuhteiden syntyä.

Avainsanat: kouluun kiinnittyminen, koulusuhde, opettaja-oppilassuhde, itsetunto

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INTRODUCTION

In Finland, the well-being of the school communities has been discussed during the past years. Despite the PISA success Finnish students have rated their school satisfaction relatively low. At the same time adolescents also report increasing numbers of health problems (Terveyden ja hyvinvoinnin laitos, 2010) and teachers and parents communicate a raise in conduct problems and absenteeism (Helsingin Sanomat, 2011; Marks, 2000). Another concern is the change in Finnish demography: there are less and less population of working age and young people in relation to elderly people. This creates a challenge for services and a need for society to lengthen the working lives of the people. Prevention of the school drop-outs and alienation in society becomes more important in supporting this sustainable demography.

For the school system, the question is: How to help young people cope with increasing demands of the labour market? How to foster the idea of life-long learning so that the motivation to learn does not decrease during adolescence? If schools cannot convince students that education is important, adolescents may alienate from society's norms and practices. The concept school engagement (Appleton, Christenson, Kim, & Reschly, 2006; Fredricks, Blumenfeld, & Paris, 2004) has been studied to explain why some students do not find school important in their lives, and why some students do not feel they belong to the school community. Especially researchers and educators have become interested in cognitive and behavioral engagement because these dimensions are assumed to student achievement. Engagement has also been used in identifying students at risk of dropping out of school (Finn, 1989).

In this study, I tested the variables that predict behavioral and cognitive engagement, and different engagement profiles, among Finnish adolescents. In Finland, school well-being research has focused more on school satisfaction and quality of school life (Kuronen, 2010; Linnakylä, 1996) whereas the concept of engagement has stayed relatively unknown.

School engagement

School engagement refers to the quality of student participation and student experience of school as a meaningful place (Fredricks et al., 2004). In turn, disengagement refers to negative attitudes and general dissatisfaction with school (Connell, 1990). Engagement is also a multidimensional concept and divided into three dimensions: emotional, cognitive and behavioral engagement (Fredricks et

al., 2004; Skinner, Kindermann, & Furrer, 2009; Wang, Willett, & Eccles, 2011). Many researchers also use subdimensions to characterize these aspects of engagement more precisely (Figure 1).

Behavioral engagement refers to visible aspects of students' school relationship (Finn, 1989; Jimerson, Campos, & Greif, 2003). The definition usually encompasses following school rules, behaving according to norms and not getting into conflicts with teachers or peers (Fredricks et al., 2004). Behavioral engagement is also characterized by active participation in classroom activities and discussion, time-on-task and effort put into school work (Connell, 1990; Skinner & Belmont, 1993). In turn, truancy and tardiness reflect extreme negative end of the behavioral engagement – disengagement continuum. In addition, behavioral engagement includes the frequency of participating in extracurricular activities such as school clubs and school governance gatherings (Fredricks et al., 2004; Fullarton, 2002).
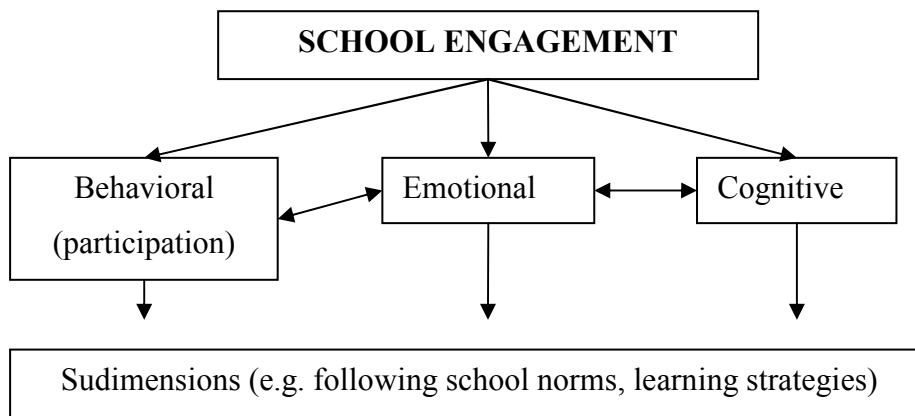

Figure 1. The dimensions and subdimensions of school engagement

Cognitive engagement has been defined in two ways (Fredricks et al., 2004). The first definition emphasizes the values and investment in learning: What kinds of opportunities for the future does the school offer? What kind of goals does the student set? The second way is to focus on students' learning strategies, goal-setting and self-regulation (Appleton et al., 2006), coping (Connell, 1990), student self-beliefs and beliefs about school (Jimerson et al., 2003). Motivational constructs such as intrinsic and extrinsic motivation are used as indicators of cognitive engagement as well (e.g. Appleton et al., 2006) which has raised questions about differences between motivation and engagement.

The third dimension of the concept, emotional engagement, entails school-related feelings and attitudes (Fredricks et al., 2004), reactions to teacher actions (Fredricks et al., 2004) and interest and enjoyment in school work (Connell, 1990). Other concept used as a synonym of emotional engagement is a sense of belonging to school (e.g. Voelkl, 1997; Willms, 2003). Appleton et al.

(2006) have suggested that experience of school membership, a student's feeling of being important in the community, should be included to the definition.

As noted above, dimensions of engagement seem to overlap with the motivational constructs, such as interest (emotional engagement), values, strategies, intrinsic motivation and goal orientations (cognitive engagement). This overlap has claimed to be the major weakness of the engagement concept. However, the motivation and engagement are not interchangeable constructs. Firstly, motivation is usually more domain-specific, and is linked to a certain school subjects or a context. On the contrary, engagement is measured in general terms. (Fredricks et al. 2004.) Secondly, motivation can be seen more of a "direction of action" whereas engagement is the "energy of action", a connection between the individual and the action (Russell, Ainley, & Frydenberg, 2005). For instance, a student can be motivated but not engaged. Thus, the focus of the motivational research is more on explaining the reasons for the behavior, whereas the research of engagement stresses the experience of the action in itself.

Engagement construct originates from practice: it allows school personnel to measure children's school experiences with simple instruments. Fredricks et al. (2004) describe the concept as an "umbrella", under which different aspects of the school relationship can be placed. For theoretical purpose, however, the motivational concepts may offer more differentiated information about the student action. After all, the motivational concepts and engagement have much in common and they should not be treated totally distinct but more as a different aspects of the students' attitudes and school experience.

In this study, we focused on behavioral and cognitive engagement. Two subdimensions of cognitive engagement are used: control and relevance of school work and future aspirations. Behavioral engagement in this study is measured as the effort put into the school work, paying attention in classes and taking care of the required learning equipment, and consists of one set of items.

The outcomes of behavioral and cognitive engagement

The behavioral engagement has been associated with school achievement in several studies (Fredricks et al., 2004; Marks, 2000; Voelkl, 1997; Willms, 2003). It has also been associated with effective strategy use (Fredricks et al., 2004; Greene & Miller, 1996; Greene, Miller, Crowson, Duke, & Akey, 2004; Vukman & Licardo, 2010), mastery goal orientation (Diseth & Kobbeltvedt, 2010; Wigfield & Cambria, 2010), goal setting (Wolters, 2004), intrinsic motivation (Corpus, McClintic-Gilbert, & Hayenga, 2009) and valuing of the school (Wigfield & Cambria, 2010). The state of the evidence concerning emotional engagement is more mixed. Some researchers have

suggested that behavioral engagement may mediate the effects of cognitive (goals, values) and emotional aspects (interest, enjoyment) to the achievement (see Li, Lerner, & Lerner, 2010; Walker & Greene, 2009). Knowing that both cognitive and behavioral engagement are associated with achievement, it could be argued that emotional engagement is an antecedent for those two: a student must first enjoy the work, which then enables effective strategies, valuing of the school and participation. However, the current state of the evidence does not offer clear information about connection between dimensions.

The second set of studies has focused mostly on researching student drop-outs (e.g. Archambault, Janosz, Fallu, & Pagani, 2009; Audas & Williams, 2001; Finn, 1989). Compared to other dimensions of engagement, behavioral engagement seems to protect most effectively from school drop-out (Fredricks et al., 2004). For instance, Archambault et al. (2009) found that behavioral engagement explained 12 percent of the variance in school drop-outs. What is more, Archambault, Janosz, Morizot, & Pagani (2009) showed that the disengaged students, and especially the cases where engagement decreased in the late adolescence, had 4 to 8 times higher risk to drop out of school when compared to students whose engagement remained stable. The indicators of emotional engagement may also play a protecting role in school drop-out, or at least they predict successful transitions (Vasalampi, Salmela-Aro, & Nurmi, 2009). The influence of cognitive engagement on staying at school remains unknown. To conclude, the significance of behavioral engagement in preventing alienation from school should be stressed.

Engagement may also be an antecedent of student well-being and health. For instance, cognitive engagement has been found to be associated with substance abuse, conduct problems and connection with problem-behaving peers according to Simons-Morton & Chen (2009). Likewise, the positive relation between cognitive engagement and positive feelings (Reschly, Huebner, Appleton, & Antaramian, 2008) and life satisfaction (Lewis, Huebner, Malone, & Valois, 2011) has been studied. It is important to notice that engagement is an indicator of well-being in itself (Linnakylä & Malin, 2008; Willms, 2003). School engagement predicts favorable trajectories in later life (Fullarton, 2002; Furlong et al., 2003) and hence it should be treated as an important goal for schools and educators.

The antecedents of the behavioral and cognitive school engagement

Individual and family level

The antecedents of engagement can be divided to three levels: individual, class or teacher and school level. In this study we chose to focus on individual and class level variables. Previous research has shown that gender explains behavioral and cognitive engagement quite well. Girls tend

to be more engaged (Covell, 2010; Furrer & Skinner, 2003; Hughes, Luo, Kwok, & Loyd, 2008; Ripski & Gregory, 2009; Woolley & Bowen, 2007). However, in our data from Finnish upper comprehensive school in autumn 2010 boys were found to be as well engaged in terms of cognitive engagement as girls (Nolvi, 2011). Perhaps using instruments focusing on behavioral aspects of engagement may lead astray, for it is known that boys seem to be less behaviorally involved in school work. Vukman and Licardo (2010) found that female and male differences in strategy use vanished within age, although were still existing during adolescence.

Individual coping styles, such as learned helplessness (Greene et al., 2004) and tendency to avoid failure (Finn & Voelkl, 1993; Finn, 1993) are associated with weaker cognitive engagement. In addition, less engaged students are more pessimistic (Skinner et al., 2009). The life satisfaction has not been only the outcome of cognitive engagement but also a predictor of it, whereas the behavioral and emotional dimensions were not related to life satisfaction (Lewis et al., 2011). The authors supposed that the cognitive engagement may be important for the life satisfaction because it reflects the lifelong learning attitudes. There are technically no studies of self-esteem and school engagement, but self-esteem is generally considered to be an enabler for well-being and academic outcomes (Keltikangas-Järvinen, 1992; Marsh & O'Mara, 2008). In any case, self-esteem correlations with engagement are examined in this study.

Some of the studies have focused first and foremost on risk factors for low engagement. For instance, learning disabilities, cognitive weaknesses, siblings or parents who dropped out (Reschly & Christenson, 2006) and placement in the special education (Anderson, Christenson, Sinclair, & Lehr, 2004; Appleton et al., 2006; Archambault, Janosz, Morizot et al., 2009) have been shown to increase the risk for disengagement. Low socioeconomic status (Leutwyler, 2009; Willms, 2003) or low educated parents (Fullarton, 2002) are also risk factors. A placement in the special education is probably not the risk factor per se, but it mediates the effects of learning disabilities and socio-emotional problems on disengagement. Compared to other countries, SES effect in Finland has been minimal or non-existent (Linnakylä & Malin, 2008; Willms, 2003), which can be a result of the school system where all children go to the same comprehensive school regardless of their neighborhood or socioeconomic background.

There is also some evidence that family support for the school work influences engagement positively (Woolley & Bowen, 2007). However, there are relatively few studies of engagement and family context. Eccles (1992) has carried out many family context studies concerning motivational indicators and has found that the parents' beliefs about school and the child, their habits of providing activities and their outlook on the world explain differences between students. The family factors can act in two levels: first, they give students social capital and prepare them for the school

environment (Audas & Williams, 2001; Furrer & Skinner, 2003). For instance, the intellectual climate in family predicts good metacognitive skills and realistic beliefs about school work (Cano & Cardelle-Elawar, 2008). Second, family support is a motivational resource which helps students stay engaged during hard times. Family support protects adolescents from disengagement and drop-out (Reschly & Christenson, 2006). Unfortunately, the risk factors are inclined to cumulate for some students, and this holds true for the lack of family support as well.

Classroom, interaction and teacher level

The support from the teacher, or good teacher-student relationships, is the most effective factor predictor of all school engagement dimensions (Fredricks et al., 2004; Hughes et al., 2008; Tucker et al., 2002). It can even overcome the effects of student initial perceived control, which is a strong predictor of motivation (Furrer & Skinner, 2003). Teacher support can protect from disengagement and drop-out, which suggests that warm and caring teacher-student relationships are especially important for the students placed at risk (Tucker et al., 2002; Urdan & Schoenfelder, 2006; Woolley & Bowen, 2007). However, the engagement tends to develop reciprocally: teachers may have more negative attitudes towards these low-engagement students, which again makes them less and less engaged. On the contrary, the engaged students increase their engagement via positive reinforcement from their teachers (Klem & Connell, 2004; Skinner & Belmont, 1993).

The individual needs theory or self-determination theory (Connell, 1990; Deci & Ryan, 1985) is commonly used as a framework to understand environment that supports engagement. Theory suggests that every individual has the need for relatedness, competence and autonomy. The relatedness refers to the student knowing his/her teacher and peers and feeling safe in the interactions. The need for competence means importance of feeling efficacy and able to do things, whereas need for autonomy signifies the need for independent work and self-determination. In classroom context these three needs are evident in three teaching styles: involvement, structure and autonomy support. A few studies have offered evidence of the effects of structure in classroom (Skinner & Belmont, 1993; Tucker et al., 2002) and for the effect of the autonomy support (Assor, Kaplan, & Roth, 2002; Greene et al., 2004) in increasing behavioral and/or cognitive engagement, especially emphasizing the relevance of the learned material (Greene et al., 2004) and not suppressing criticism in the class seem to be efficient (Assor et al., 2002). Assor et al. (2002) point out that teaching practice should try to make a connection between student interests and curriculum goals: even the given autonomy can be useless if the students have no insight about how to use the information.

Along the teacher-student interaction the classroom climate is demonstrated to benefit engagement (Fullarton, 2002). Especially important characteristics in the classroom are the classroom culture, norms and general attitudes towards schoolwork (Conner, 2010). The peer relationships outside of the school rather weaken than foster engagement (Fredricks et al., 2004; Furrer & Skinner, 2003; Juvonen, 2007). In the study of Virtanen, Kuorelahti, & Jahnukainen (2011) feelings of being safe at school and being respected by peers even predicted absenteeism, i.e. extreme behavioral disengagement among Finnish adolescents. One reason for this is that outside-school peers do not help in creating a warm classroom community. If the attitudes of the peers are negative towards learning, they can work against the school engagement.

The question remains: how can the teachers and school personnel support the good and positive classroom cultures? For the time being, the answer is unclear. The goal structures and norms teachers set can help in fostering engagement, especially its cognitive indicators (Urdan & Schoenfelder, 2006; Wolters, 2004). In the classrooms where mastery and understanding of the material is underlined and mistakes are accepted, students are more behaviorally engaged (Wolters, 2004) and intrinsically motivated, whereas the performance-orientation in classroom predicts extrinsic motivation (Corpus et al., 2009). The study of Urdan and Midgley (2003) indicates that a decrease in the classroom goal structure has a negative influence on cognitive engagement and achievement whereas an increase in goal structure protects from these. Diseth and Kobbelvedt (2010) suggest that mastery goals should be fostered by setting expectancies of competence and by encouraging effort, giving intrinsic experiences and avoiding excessive workload for student not to become exhausted.

MacDonald and Marsh (2004) interviewed students who had disengaged and dropped out of school. The most important reason for dropping out was the experience that teachers were not encouraging and demanding enough, especially when it was a low-achieving group in question. This suggests that even in the hardest environments teachers should not stop trying to set goals for the class.

The adolescents and stage-environment fit

The age itself is also a predictor of school engagement: the older students get, the less engaged they are in school (Marks, 2000; Tucker et al., 2002) and the less they show high indicators of motivation (Eccles, 1992). Especially adolescents seem to suffer from decreasing intrinsic motivation (Corpus et al., 2009). It could be that the younger elementary students are only less capable of assessing their school relationships.

Another explanation for the decreasing engagement is associated with individual need perspective. During adolescence, the peers also become more important (Willms, 2003) and individuals' need for autonomy increases. The need for autonomy is also related to the peer culture. On the one hand, sociability is one main function of the school for the adolescents and the social goals (e.g. maintaining position among peers) are in conflict with the school norms (MacDonald & Marsh, 2004). On the other hand, contrary to the general belief that adolescents do not find adults important anymore, the need for teacher involvement can even become emphasized (Furrer & Skinner, 2003; Roorda, Koomen, Spilt, & Oort, 2011).

Stage-environment fit theory suggests that the capability of the school and the adolescents to meet each other's norms and goals is important (Gutman & Eccles, 2007). But are these increasing needs for autonomy and the social goals taken into account in middle schools and upper comprehensive schools? Eccles (1992) argued that, in fact, the transitions to middle school or upper comprehensive schools can lead students to less autonomy-supportive settings. The middle schools are usually bigger and more bureaucratic than the elementary schools, and at the same time teacher-student contact may diminish and rules get stricter. Actually, teachers of adolescents do not necessarily trust the students and may give very little responsibility and freedom. (Eccles, 1992.)

Aims of the study

In Finland, only a few studies have focused on school engagement and student experiences of the school. Rationale of this study was to identify the predictors of cognitive and behavioral school engagement in Finnish upper comprehensive students. Especially the effects of the teacher-student relationship, family support and peer support were examined. The second aim for the study was to identify different engagement profiles and predictors for these profiles.

1. What are the key factors that predict school engagement in Finnish upper comprehensive students?
    1.1. Do teacher-student relationships, family support, peer support, self-esteem, a placement in part-time special education, grade level, perceived family SES, absenteeism and gender predict the subdimensions of cognitive engagement: control and relevance of school work and future aspirations?
    1.2. Do teacher-student relationships, family support, peer support, self-esteem, a placement in part-time special education, grade level, perceived family SES, truancy and gender predict behavioral engagement?

It is expected that the teacher-student relationship is the strongest predictor of both cognitive and behavioral engagement. It is also assumed that the peer support do not predict either cognitive or behavioral engagement.

2. What kind of school engagement group profiles can be identified on the basis of cognitive and behavioral engagement?
3. Do the teacher-student relationships, family support, peer support, self-esteem, placement in part time special education, perceived family SES, truancy and gender predict the identified engagement groups?

METHOD

Participants and procedure

The data used in this study was gathered in autumn 2010 and spring 2011. There were 841 Finnish adolescent participants (413 girls and 428 boys), of which 265 were ninth-graders (Mean age=15.47, SD=.44), 261 eighth-graders (M=14.46, SD=.38) and 315 seventh-graders (M=13.47, SD=.42) from seven Finnish upper comprehensive schools. Two of the schools were urban and located in a middle-sized city in Finland, and five of the schools were rural and participating in KELPO-project (The Development Project of Special Education in Finnish Comprehensive Schools). All the schools were located in Western Finland.

The sample was gathered in two phases: the first sample was gathered during the autumn of 2010, and a complementary sample in February of 2011. As the amount of students placed in special education was fairly low (9,9 %) in the first phase data, the second sample was gathered to balance this low participation of special education students. In the final data, 13,8 % of the students were placed in part-time special education, which is still less than the national level 17,1 % (Statistics Finland, 2011). The percentage of the foreign-language speakers (Statistics Finland, 2010b), family characteristics (Statistics Finland, 2010a) and population sample (Statistics Finland, 2010c) are equal to the national population.

The school heads of the target school group were informed of the research in advance, and some schools' heads were asked to participate by letter. The schools were instructed to either draw lots to define participating classes randomly or pick classes by school head's decision. Two of the school heads used their right to pick classes. The parents' consent was asked and obtained from 84,9 % of the students who also responded to the study questions. The pupils answered the questionnaire on the internet in IT classroom while their teachers monitored the whole class. The teachers were also given accurate instructions to ensure the anonymity of the participants.

Measures

Supportive contexts. Supportive contexts (peer support, family support and teacher-student relationships) used in the study were drawn from the emotional engagement dimension of Student Engagement Instrument (SEI). Students responded using a 4-point Likert scale which indicates how much they agreed on items concerning supportive contexts (1= "strongly agree", 4= "strongly disagree"). Teacher-student relationship consists of 8 items ("Overall, my teachers are open and

honest with me"), peer support of 6 items ("Other students at my school care about me") and family support of 4 items. ("When I have problems at school my family/guardians are willing to help me") The SEI is developed by Appleton et al. (2006) and its factor structure has been replicated in Portugal (Moreira, Machado Vaz, Dias, & Petracchi, 2009) and in Finland (Nolvi, 2011). The factor structure was tested also in this study using Principal Axis Factoring and Promax rotation and it replicated the earlier results. Peer support scale was skewed but the usual transformations could not fix its distribution. We tried to improve distribution of this variable by deleting a few outliers but as the results of the regression analysis remained similar, the original sum variable was used in final analyses.

Cognitive and behavioral engagement. Student Engagement Instrument (SEI) was used in measuring the cognitive engagement dimensions. We used two subdimensions, Future aspirations (3 items) and Control and relevance of school work (7 items). The third dimension, External motivation was dropped out because it only consisted of two items, and the original authors have also moved from three subdimensions to two subdimensions because of the better model fit (Betts, Appleton, Reschly, Christenson, & Huebner, 2010). Future aspirations included items such as "My education will create many future opportunities for me" and "I plan to continue my education following comprehensive school". Control and relevance of school work asked students' thoughts about their learning strategies, attitudes and experiences of school relevance, e.g. "Learning is fun because I get better at something" and "After finishing my schoolwork I check over if it was correct". Cronbach's α for Future aspirations was .79 and for Control and relevance of school work .81. Future aspirations scale was also skewed, and the procedure was similar as concerning peer support (see above).

Behavioral engagement (4 items) was measured using *Ongoing engagement* dimension of Research Assessment Package for Schools (Institute for Research and Reform in Education, 1998). Items "I work hard for school" and "I pay attention in class" are examples of the items of this scale. Items 2 "I don't try very hard at school" and 4 "I often come to class unprepared" were reversed. The reliability for behavioral engagement scale measured by Cronbach's α was .71. For all school engagement measures, the items are anchored on a 4-point Likert scale (1= "strongly agree", 4="strongly disagree").

Self-reported truancy. Truancy was measured by a single question: "How many full schooldays have you been absent during the previous 30 days because of truanting?" (1= "not a single day", 4= "more than three days"). The question is derived from PISA 2000 study (Willms, 2003).

Self-esteem. To measure self-esteem, we used The Rosenberg Self-Esteem Scale (1965). The scale consists of 10 items like "On the whole, I am satisfied with myself" and "I feel I do not have much to be proud of". The response formats range from 1 = "strongly agree" to 4 = "strongly disagree". Five items (3, 5, 8, 9, 10) were reversed. Cronbach's α of the scale was found to be .82.

Background variables. In addition, the adolescents were asked about their age, grade, gender and perceived family SES. The perceived family SES ("How well off do you think your family is?") options were in scale from 1 to 6 (1= "very well off", 6= "not at all well off"). The placement in special education consisted of many options, like part-time hours spent with special education teacher and special education in the class. Almost all adolescents receiving special education in the study were in part time special education, so to make it simpler the variable was coded 1= "not receiving SE", 2= "receiving SE".

Data

There were only a few missing values (< 5 %) in the data. Missing values of the SEI subscales and Self-esteem scale were imputed by gender means if the case had only a few missing values in the row. If the case had more than 20 % missing values in a certain scale, the values of that scale were not imputed, but the listwise selection was used and therefore some cases dropped out of the analyses. Because of this, the number of cases in different analyses may vary. For instance, self-esteem scale had more missing data than other variables. However, the missing value analysis did not reveal any differences between those who answered and those who did not answer to self-esteem items.

Standard multiple regression and multinomial regression analysis were used to find the predictors for engagement subdimensions and profiles. In standard multiple regression, bootstrapping method was used to ensure the reliability of the analysis. All the initial variables were put into regression model once, and the unique contribution of the variables was tested with hierarchical method. Because the data was cross-sectional, regression results must be regarded as more of a correlational nature.

To identify different school engagement groups, variables were submitted to hierarchical cluster analysis. In cluster analysis, the clusters were formed by grouping cases into bigger clusters until all cases were members of a cluster. Ward's method and squared Euclidian distance were used. The decision of the cluster numbers was done with the help of dendrogram, graphs and substantive content considerations. After this, K-means cluster analysis was used to compute an agglomeration schedule, which confirmed the number of clusters. In K-means cluster analysis, each observation is associated with the nearest mean, which can change initial clusters and must be taken into

consideration. In this case, there were no differences between means created by hierarchical cluster analysis and means of the K-means cluster analysis method. The procedure of defining the number of clusters is described in more detail in the Results section.

RESULTS

Correlations of the three dependent and the independent variables are showed in Table 1. All of the independent variables were correlated with cognitive and behavioral engagement. Also the independent variables were from mildly to moderately correlated. Especially the supportive context variables were strongly correlated. Therefore, factor analysis was performed for supportive context variables and self-esteem. These seemed to load on a single factor. This factor was included in regression analysis to examine whether the original variables had unique effects on dependent variables, and unique effects were found. In addition, the tolerance/VIF values indicated variables being suitable for the analyses. After all, supportive context variables and self-esteem were used as separate variables according to the initial analysis plan.

Table 1. Means, Standard Deviations and Bivariate Correlations among Cognitive and Behavioral Engagement Dimensions, Supportive Context Variables and Background Variables

	M	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Control and relevance of school work	2.83	0.470	-											
2. Future aspirations	3.45	0.492	.49***	-										
3. Behavioral engagement	2.98	0.505	.56***	.40***	-									
4. Teacher Student RS	2.80	0.484	.67***	.34***	.39***	-								
5. Family support	3.36	0.485	.51***	.46***	.33***	.53***	-							
6. Peer support	3.15	0.480	.35***	.29***	.20***	.41***	.42***	-						
7. Self-esteem	2.77	0.438	.37***	.26***	.34***	.31***	.35***	.44***	-					
8. Special Education			-.13***	-.08*	-.20***	-.04	-.10**	-.08*	-.14***	-				
9. Grade level			-.14***	.02	-.10**	-.15***	-.14***	-.07	-.03	-.08*	-			
10. SES	3.10	0.785	.15***	.05	.14***	.09**	.14***	.09**	.23***	.10**	-.09*	-		
11. Truancy			-.18***	-.15***	-.28***	-.12**	-.12	-.06	-.19***	.22***	.07	.11**	-	
12. Gender			-.04	.14***	-.18***	.00	-.04	-.07	.19***	.05	.01	.08*	.01	-

Control and relevance of schoolwork

First we tested what are the factors that predict students' experience of their control and relevance of the school work by using standard multiple regression analysis. All the variables were first put into analysis at once, and their unique contribution was tested with hierarchical method. The model explained 52 % of the variance in the data. Especially the teacher-student relationship had an effect on control and relevance of school work: it explained 19 % of the variance after the effect of the

other variables was taken into account. It must be noticed that without controlling of other variables, teacher support explained even 45 % of the variance (see Correlation matrix), which held true for the other predictors as well, indicating common variance of the predictors. In addition, family support and self-esteem contributed statistically significantly to the control skills of the students and the valuing of the school, whereas truancy and gender had practically no effect after controlling of the other variables. Peer support had no effect on control and relevance of the school work, neither did placement in the special education, grade level nor socioeconomic status. To sum up, appreciation of the school and good metacognitive strategies are strongly and uniquely related to the relationship between students and teachers.

Table 2. Regression Results for Control and Relevance of Schoolwork

Variables	B	β	Correlation	ΔR (Unique)	Bootsrapped 95 % CI for B	
					Lower	Upper
Supportive Contexts						
Teacher Student Relationship	0.524 (0.030)	0.534***	.67***	.19 ***	0.453	0.599
Family Support	0.155 (0.031)	0.159***	.51***	.02 ***	0.087	0.220
Peer Support	0.006 (0.030)	0.006	.35***	.00	-0.064	0.075
Background						
Self-esteem	0.136 (0.032)	0.126***	.37***	.01***	0.054	0.216
Special Ed	-0.067 (0.034)	-0.050	-.13***	.00	-0.141	-0.003
Grade level	-0.017 (0.014)	-0.029	-.14***	.00	-0.044	0.010
SES	-0.021 (0.015)	-0.036	.15***	.00	-0.057	0.011
Truancy	-0.046 (0.018)	-0.066*	-.18***	.00	-0.085	-0.006
Gender	-0.057 (0.024)	-0.061*	-.04	.00	-0.106	-0.011
Intercept=0.823 (0.0148)		R=.73***		R²=.53	Adjusted R²= .52	

Future aspirations

Second, we examined the predictors for future aspiration of the students, again using regression analysis. The predictors for future aspirations were seemingly different from predictors of control and relevance of. The model could explain only 26 % of the variance and no clear predictors were found, when controlling of the variables was done. However, family support proved to be the best

predictor having unique R of 7 %. Thus, family tends to affect most on the future planning of the upper comprehensive school students. A high self-esteem, age and female gender predicted the future ambition uniquely as well. Other variables, including peer support, had no predicting power for the future aspirations of the students after other variables were taken into account.

Table 3. Regression Results for Future Aspirations

Variables	B	β	Correlation	ΔR (Unique)	Bootsrapped 95 % CI for B	
					Lower	Upper
Supportive Contexts						
Teacher Student Relationship	0.108 (0.039)	0.105**	.34***	.00**	0.025	0.190
Family Support	0.340 (0.040)	0.334***	.46***	.07***	0.244	0.434
Peer Support	0.057 (0.039)	0.054	.29***	.00	-0.036	0.154
Background						
Self-esteem	0.119 (0.042)	0.105**	.26***	.01**	0.033	0.207
Special Ed	-0.013 (0.045)	-0.009	-.08*	.00	-0.097	0.070
Grade level	0.060 (0.019)	0.101**	.02	.01**	0.026	0.097
SES	0.016 (0.020)	0.025	.05	.00	-0.024	0.056
Truancy	-0.053 (0.023)	-0.073*	-.15***	.00	-0.104	-0.003
Gender	-0.144 (0.032)	-0.146***	.14***	.02***	-0.204	-0.080
Intercept=1.776 (0.194)		R=.51**		R²=.26	Adjusted R²=.26	

Behavioral school engagement

Third, we used regression analysis to examine predictors of behavioral engagement. Behavioral engagement was predicted best by teacher-student relationship, self-esteem, gender and truancy, which all had a unique R 3-4 %. Thus, students that have best relations with school adults, strong trust to themselves and just little absences are also most behaviorally engaged. Girls were more behaviorally engaged than boys. Family support, peer support and placement in special education had small effects on behavioral engagement as well. Grade level and socioeconomic status had no effect on the behavioral engagement of the students. However, also here the predictors were

correlated with behavioral school engagement, but after controlling of the other variables predicting power stayed low. The model accounted for 32 % of the variance in the data.

Table 4. Regression Results for Behavioral Engagement

Variables	B (Std.e)	β	Correlation	ΔR (Unique)	Bootstrapped 95 % CI for B	
					Lower	Upper
Supportive Contexts						
Teacher-Student Relationship	0.270 (0.038)	0.256***	.39***	.04***	0.187	0.368
Family Support	0.124 (0.039)	0.118**	.33***	.01**	0.041	0.212
Peer Support	-0.123 (0.038)	-0.114**	.20***	.01**	-0.212	-0.032
Background						
Self-esteem	0.297 (0.042)	0.255***	.34***	.04***	0.198	0.402
Special Education	-0.156 (0.044)	-0.108***	-.20***	.01***	-0.249	-0.063
Grade level	-0.033 (0.019)	-0.054	-.10**	.00	-0.066	-0.003
SES	-0.032 (0.020)	-0.049	.14***	.00	-0.079	-0.011
Truancy	-0.124 (0.023)	-0.167***	-.28***	.03***	-0.179	-0.069
Gender	-0.215 (0.031)	-0.213***	-.18***	.04***	-0.270	-0.154
Intercept=2.424 (0.190)		R=.57***		R²=.33	Adjusted R²=.32	

The school engagement profiles

Here, our aim was to study what kind of different cognitive and behavioral engagement profiles could be identified in terms of three engagement variables: behavioral engagement, control and relevance of school work and future aspirations. We used hierarchical cluster analysis and k-mean cluster analysis. On the basis of the dendrogram, theoretical interpretation and agglomeration schedule, four school engagement clusters were identified. We wanted to find as broad picture of school engagement as possible without reporting useless information.

In the three cluster model, the means of all three subdimensions were approximately same and thus the model would not have revealed much new information about school engagement. The four cluster model offered new information about the differences of the engagement subdimensions, whereas the five and six cluster models would only have repeated its patterns. In addition, agglomeration schedule coefficients supported three or four cluster models. We also ran the analysis

with split data and it gave the same results, reinforcing the reliability of the model. The final number of cases in the cluster analysis was 834.

The clusters are showed in Figure 2. They depict school engagement in respect of three engagement subdimensions, Control and Relevance of School Work (CR), Future Aspirations (FA) and Behavioral Engagement (BE). The variables were measured with same scale, so they needed not to be standardized. The means are comparable to the original scale means.

The cluster 1, *Disengaged,* had fairly low engagement on all three subdimensions. However, these students had average levels of future aspirations. Control and relevance of school work and behavioral engagement of these students were low with means of approximately 2,2. This group was the smallest and accounted for 12, 8 % of the students.

The analysis revealed two clusters of moderate engagement. The cluster 2 differed from other groups because of its discrete engagement pattern. The students in this cluster had moderate BE and CR but significantly high future goals. This cluster was named *Future-oriented* and it covered as many as 26,9 % of the students. Furthermore, the cluster 3 differed from cluster 2 by having not only average CR and BE, but also average FA. They could be characterized *Moderately engaged.* The group was the largest and encompassed 35, 0 % of students.
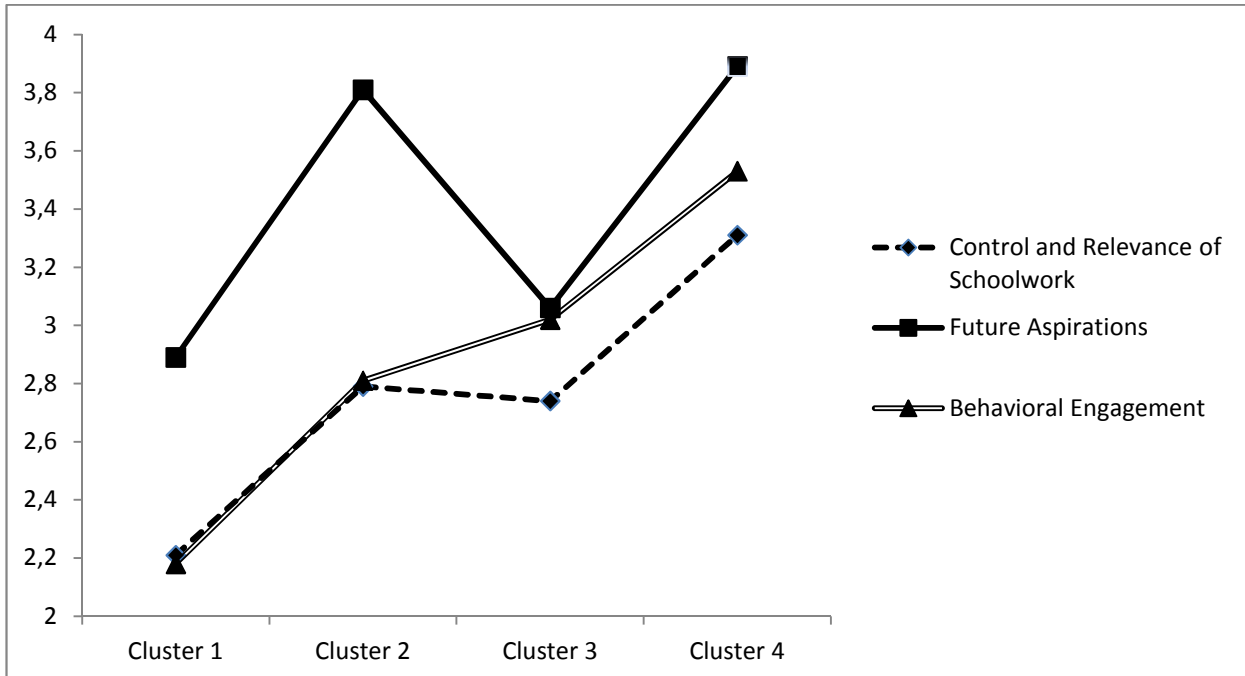

Figure 2. The School Engagement Clusters Based on the Three Engagement Subdimensions

The last Cluster 4 could be called *Strongly engaged.* Both their CR and BE were higher than average, and FA was very high with a mean of 3,9. This means that almost every student in this group answered "strongly agree" to the items of FA which figured out the future plans and goals of the students. This cluster covered 25,3 % of students.

The results indicate that Finnish upper comprehensive students divide into different engagement groups. The students' relationship with school and schoolwork is quite positive, as over 50 % of the students are moderately or strongly engaged, with even one quarter of adolescents who experience strong cognitive and behavioral engagement. There is a little (12,8%) group of students who are disengaged in all three aspects of engagement.

The predictors of the school engagement profiles

Finally, we examined which are the factors that predict the engagement groups identified in cluster analysis. We used multinomial regression analysis. *Moderately engaged* group was first chosen as a reference category. This way, the differences between *Future-oriented* and *Moderately engaged* could be compared to the other results. Second, *Strongly engaged* were picked as a reference group to reveal all predictors of the groups. The initial analysis revealed that peer support and socioeconomic status did not predict engagement groups in any of the comparison, so they were dropped out of the analysis. In final analyses, all the predictors were put in the analysis at once. There were two supportive context variables, teacher-student relationship (TS) and family support (FS). The other background variables were self-esteem, truancy, gender and placement in special education. Self-esteem had about 6 % of missing values, so this forced us to pick only 781 cases to the analysis.

The overall likelihood ratio test indicated that there were significant predictors of engagement groups in the model (χ^2=409,03 (24), p<.001). This overall classification accuracy of the model was 53,5 %. Considering that there were four clusters, the classification rate is good. The model could classify the cases of group *Moderately engaged* (68,8%), *Strongly engaged* (67,0 %) and *Disengaged* (39,8 %) but failed in classifying the members of *Future-oriented* (27,4 %). Thus, the model could explain relatively much of the variance in the data (Nagelkerke pseudo-R^2= .44). The predictors and observations offered by the model were also meaningful and plausible, and were supported by earlier standard multiple regression analyses in the study. Thus, results of the multinomial regression are interpreted more precisely in Tables 5 and 6.

First, we compared all the other groups to the group moderately engaged. As could be figured out on the basis of standard regression, teacher support and self-esteem predicted the membership of *Disengaged* best. In addition, truant behavior and special education had an effect: the odds for

being disengaged for those with truant behavior was two (2) times compared to non-truants, and odds for SE status was about three (3) times compared to those who were not placed in self-esteem. On the contrary, the only significant predictor for group *Future-oriented* was family support. Compared to those who had average levels of all three engagement subdimensions, the odds for becoming a future-oriented average student was three (3) times for those who had strong family support. Thus, the difference between these two moderate engagement groups was the family support.

Table 5. The Summary of Multinomial Logistic Regression for variables predicting the Cognitive and Behavioral School Engagement Groups Referenced to the Moderately Engaged

Group[1]	Variable	B	StdE	Wald[2]	p	OR	95 % CI	
							Lower	Upper
Disengaged	Intercept	6.121	1.334	21.06	<.001			
	Teacher-student	-1.682	0.316	28.33	<.001	0.186	0.100	.346
	Family Support	-0.097	0.321	0.09	*n.s.*	0.907	0.484	1.702
	Self-esteem	-0.922	0.341	7.31	<.01	0.398	0.204	0.776
	Truancy	0.657	0.166	15.64	<.001	1.929	1.393	2.672
	Female	-0.405	0.276	2.16	*n.s.*	0.667	0.389	1.145
	Not placed in SE	-1.023	0.322	10.10	<.01	0.359	0.191	0.676
Future-oriented	Intercept	-4.177	1.088	14.75	<.001			
	Teacher-student	-0.432	0.256	2.85	*n.s.*	0.649	0.393	1.072
	Family Support	1.277	0.249	26.30	<.001	3.585	2.201	5.839
	Self-esteem	0.331	0.261	1.61	*n.s.*	1.392	0.835	2.323
	Truancy	0.236	0.154	2.36	*n.s.*	1.366	0.937	1.711
	Female vs. Male	0.207	0.197	1.11	*n.s.*	1.231	.0837	1.809
	Not placed in SE	-0.486	0.281	2.98	<.09	0.615	0.354	10.068
Strongly engaged	Intercept	-16.103	1.454	122.69	<.001			
	Teacher-student	1.669	0.332	25.32	<.001	5.307	2.770	10.167
	Family Support	1.841	0.300	37.75	<.001	6.304	3.504	11.341
	Self-esteem	1.431	0.289	22.97	<.001	4.181	2.329	7.505
	Truancy	-0.208	0.214	0.94	*n.s.*	0.813	0.534	1.235
	Female	0.966	0.229	17.75	<.001	2.627	1.676	4.118
	Not placed in SE	0.230	0.386	0.36	*n.s.*	1.259	0.591	2.681

Note: N=781. OR=odds ratio. CI=confidence interval. SE=special education.

[1]The reference group is Moderately engaged.

[2]$df = 1$.

Strongly engaged students differed from *Moderately engaged* in respect of teacher-student relationship, family support, self-esteem and gender. Those with strong teacher relations were five (5) times more likely, those with strong self-esteem four (4) times more likely and those with strong family support six (6) times more likely to belong to *Strongly engaged* group. In the initial analyses these three variables had much common variance, so they may tell about the same factor. However, truant behavior and special education status did not predict *Strongly engaged* group. This may be because of low number of truants and SE students in this group.

The first analysis showed differences between average engagement and other groups, but the different prediction patterns between the extreme groups remained hidden. Therefore, we wanted to compare all the other groups to the *Strongly engaged* group (Table 6). Here, differences between *Disengaged* and *Strongly engaged* became evident: all the variables predicted belonging to the *Disengaged* group significantly. For instance, the odds for belonging to *Disengaged* was 20 times for those who had weak TS compared to those who had strong TS, and four (4) times higher for boys than girls. Also family support became significant: the odds for becoming *Disengaged* were six (6) times for those with weak FS compared to those with strong FS.

The both moderately engaged groups were quite similar referenced to the *Strongly engaged*. The students with strong TS and self-esteem were less likely to belong to these groups, and the odds for moderate engagement for boys was approximately two (2) times compared to girls in both groups. As we already noticed earlier, the only difference was the FS: the odds for moderate engagement for those with weaker FS were higher only in *Moderately engaged* group but not in *Future-oriented* group. Another detail is that odds for belonging to *Future-oriented* is 1.5 times higher for those with truant behavior and almost significantly (p=.055) two (2) times higher for those with SE status compared to those with no SE status.

Table 6. The Summary of Multinomial Logistic Regression for Variables Predicting the Cognitive and Behavioral School Engagement Groups Referenced to the Strongly Engaged

Group[1]	Variable	B	StdE	Wald[2]	p	OR	95 % CI	
							Lower	Upper
Disengaged	Intercept	22.224	1.834	146.78	<.001			
	Teacher-student	-3.351	0.413	65.93	<.001	0.035	0.016	0.079
	Family Support	-1.938	0.394	24.15	<.001	0.144	0.066	0.314
	Self-esteem	-2.353	0.408	33.22	<.001	0.095	0.043	0.212
	Truancy	0.865	0.231	13.97	<.001	2.374	1.509	3.737
	Female vs. Male	-1.371	0.323	18.02	<.001	0.254	0.135	0.478
	Not placed in SE	-1.254	0.437	8.215	<.01	0.285	0.121	0.673
Future-oriented	Intercept	11.926	1.425	70.02	<.001			
	Teacher-student	-2.101	0.329	40.80	<.001	0.122	0.064	0.233
	Family Support	-0.564	0.301	3.51	<.09	0.569	0.315	1.027
	Self-esteem	-1.100	0.293	14.18	<.001	0.333	0.188	0.591
	Truancy	0.443	0.202	4.83	<.05	1.558	1.049	2.3014
	Female vs. Male	-0.758	0.231	10.80	<.01	0.468	0.298	0.736
	Not placed in SE	-0.726	0.373	3.69	<.09	0.489	0.235	1.015
Moderately engaged	Intercept	16.103	1.454	122.69	<.001			
	Teacher-student	-1.669	0.332	25.32	<.001	0.188	0.098	0.361
	Family Support	-1.841	0.300	37.75	<.001	0.159	0.088	0.285
	Self-esteem	-1.431	0.298	22.97	<.001	0.239	0.133	0.429
	Truancy	0.208	0.214	0.94	*n.s.*	1.231	0.809	1.871
	Female vs. Male	-0.966	0.229	17.752	<.001	0.381	0.243	0.597
	Not placed in SE	-0.230	0.386	0.357	*n.s.*	0.794	0.373	1.691

Note: N=781. OR=odds ratio. CI=confidence interval. SE=special education.

[1]The reference group is Strongly engaged.

[2]$df = 1$.

DISCUSSION

The major aim of this study was to examine which factors predict the Finnish adolescents' cognitive and behavioral school engagement. Cognitive engagement was measured by two subdimensions, control and relevance of schoolwork and future aspirations, whereas behavioral engagement consisted of one set of items. Secondly, we examined different school engagement profiles to find correlates for these profiles.

There is a vast evidence of the significance of teacher-student relationships for children and adolescents. A strong, warm relationship between teacher and student strengthens engagement (Anderson et al., 2004; Fredricks et al., 2004; Juvonen, 2007; Zimmer-Gembeck, Chipuer, Hanisch, Creed, & McGregor, 2006), protects from dropping out (Woolley & Bowen, 2007) and predicts favorable school outcomes (Gregory & Weinstein, 2004; Hamre & Pianta, 2001). In this study, teacher-student relationship was found to predict adolescents' experience of control and relevance of school work and behavioral engagement. In fact, teacher support explained even 19 % of the variance in the Control and relevance subdimension, i.e., students' metacognitive strategies, mastery orientation and appreciation of school. Moreover, teacher-student relationship predicted 4 % of the behavioral engagement. This emphasizes the significance of the teachers' actions and supports the idea of school being more of a social network than a theoretical workshop. Schools are not to focus only on academic indicators (Li et al., 2010) but also on identifying their role in providing experiences, skills and several resources for the students' lives. This enables the emphasis on learning mastery and relationships in school, which has a possible effect on school engagement and student well-being. It should be remembered that social well-being of the students goes well together with school achievement, and actually school achievement is also very important for adolescents (see Uusitalo-Malmivaara, 2011), not something opposite of social goals.

However, teacher-student relationship did not predict future aspirations of the students. Instead, family support was the best predictor of the appreciation of future education. Parents' beliefs about school and the outlook on the world affect engagement (Eccles, 1992). This is best evident in terms of future education, as students' of high educated parents will choose higher education. It may be that the concrete attitudes towards education are derived from the family culture, but the everyday experience and action in the school is more associated with the teachers.

This result also suggests that there are differences between these two cognitive engagement domains. The students may not perceive that schoolwork and their future are associated, which signifies a gap between a school and "the real world". Still, students who fare well in the school

also have favorable trajectories in their later life. This is the message that should get communicated to the adolescents to foster everyday school work.

Gender differences are a common finding in engagement and school satisfaction studies, usually communicating better school relationships of the girls (e.g. Covell, 2010). However, the gender did not predict the control and relevance of the Finnish adolescents. We found similar results in our previous study (Nolvi, 2011). Thus, if engagement is measured by appreciation of school work and metacognitive strategies, girls and boys do not differ. At the same time, girls are more behaviorally engaged and future-oriented than boys. These results are consisted with earlier research (Blackhurst & Auger, 2008; Johnson, Crosnoe, & Elder, 2001; Uusitalo-Malmivaara, 2012; Wang et al., 2011). Perhaps the expected behavior and enthusiasm is not the way adolescent boys are used to identify themselves with the school, or the schools expect girls to be more conventional than boys. I believe that the peer groups can also put more pressure on boys, demanding more school-rejecting behaviors than those of the girls. This can have something to do with a masculine culture. Qualitative examinations of the different meanings boys and girls give to the school and education may shed more light to this issue.

Peer support had practically no effect on dimensions of engagement. This was what we expected and can be partially because relationships are fairly unstable at this stage of development (Li, Lynch, Kalvin, Liu, & Lerner, 2011). The only exception was the behavioral engagement, which may indicate that the adolescents change especially their visible behavior according to their environment: if they want to promote social relationships in class, they may ignore classroom rules. Given the need for autonomy of the young people, teachers should not force to choose between social goals and academic goals (Urdan & Schoenfelder, 2006). The best way to solve problematic goal issues is to find ways in which adolescents can work for the both social and learning goals. For instance, this could be done by giving the students a task and having them work on it in their own social groups. (Urdan & Schoenfelder, 2006.) Further, the schools could also think about and identify the significance of relationships in their objects. Probably this kind of teacher practices would show as high experienced teacher support.

What is more, special education was nonsignificant predictor of the inner feelings about school work and explained only slightly the behavioral engagement. This is contrary to our previous analyses, in which SE students differed from non-SE students significantly (Nolvi, 2011). It is possible that SE has a statistically significant but very small effect on engagement. This is a positive message signaling about the equality in Finnish comprehensive schools, knowing that special education status may mediate the effects of socioeconomic status and parents' educational status. In this study, SES had no straight effects on any of the engagement subdimensions or groups. The

recent study did not investigate how much attention students are receiving from their teachers; however, in our previous study the teacher support was experienced equally in both SE and non-SE groups (Nolvi, 2011). It is possible that teachers tend to pay more attention to SE students, which helps also SE students identify themselves with school and plan their future actively. This is important, as students with disabilities are at risk for dropping out and need more support from their environment (Hamre & Pianta, 2005; Murray & Pianta, 2007; Roorda et al., 2011).

The second major aim of the study was to identify different school engagement profiles. We found four school engagement clusters: *Disengaged* (12,8 percent of the students), who were on the low end of engagement on all three aspects; *Moderately engaged* (25,9 %) who had average levels of both cognitive dimensions and behavioral engagement; *Future-oriented* (35,0 %), who were moderately engaged otherwise but put a high value on their future education; and *Strongly engaged* (25,3 %) who showed high engagement by all odds. Disengaged group was the smallest of the groups, and almost one quarter of the students belonged to the strongly engaged group. This is even slightly more than the amount of the "Well-rounded students" (21,9 %), an engagement profile of Finnish students in PISA study (Willms, 2003).

The results of our study offer a relatively positive picture of the engagement of the Finnish students. However, more than one student out of ten thinks that the school is irrelevant and that his/her everyday action in school is unsatisfactory. *Disengaged* group was predicted by weaker teacher-student relationships and weaker self-esteem. Contrary to the other groups, placement in special education and truant behavior predicted this group significantly. Compared to *Moderately engaged*, gender did not explain disengagement, but became a significant predictor when compared to the strongly engaged. It is likely that in the strongly engaged group the power of girls is more significant (see also Linnakylä & Malin, 2008) and therefore it is possible that both girls and boys have similar odds for becoming disengaged in school. These risk factors should be monitored and disengaged students identified and get involved in the school again. Check and Connect (Anderson et al., 2004) is one useful intervention for re-connecting students with school.

What's remarkable, all the clusters had from average to high future aspirations, indicating fairly high appreciation of further education. In Finland, the appreciation of education has traditionally been high. In our data this holds true for even those students who do not invest in school in their everyday life (Cluster 1: Disengaged). Thus, the appreciation of the education appears not to have weakened among adolescents during the last years. The high future aspirations is visible also in a high number of students who are only moderately engaged otherwise but put very high value on future education (Cluster 2: Future-oriented). For them, school has utility value but they still do not work for the future on day-to-day basis. As we noticed in multinomial regression

analyses, this could be associated with experience of weaker teacher-student relationships. Maybe these are the students who strive their way through the comprehensive school due to future goals and attitudes that might originate from parent values. However, these students do not find school interesting. These students probably fare well in their lives but feel no enthusiasm related to learning in school. In addition, the *Future-oriented* group was more often than the *Moderately engaged* group predicted by truant behavior and placement in special education, which may be suggesting more severe difficulties in school and communicates a need for the identification of these students.

Finally, when talking about *Strongly engaged* students, they stand out from the other groups in many ways. These students, especially girls, with strong teacher relationships, strong family support and strong self-esteem are clearly more likely to be strongly engaged. When talking about upper comprehensive students, students' positive past in school may be a major predictor of their engagement. It would be interesting for the teaching personnel to find out how to create active teacher-student relationships to prevent disengagement in risk groups. In this effort, the interaction between students and teachers may not be enough, but also school system must change from learning-related institution to a community that recognizes social skills and relationships as part of their priorities. Thus, besides teaching practices, the school and studies must have more focus on curricula and school systems (Zimmer-Gembeck et al., 2006) to analyze their opportunities to affect students' motivation and prevention of alienation.

Limitations of the study

Our study has several limitations. Firstly, although the sample of participants represented national population quite well, the percentage of students in special education remained quite low (13, 8 %). This may be due to the procedures in data collection or to the students being absent during the study were also students placed in special education. The lower number of special education students could have an effect on the results of the study. There were five schools which simultaneously took part in a development project of special education. These schools, willing to improve their practices and educate their teacher, may have differed from average Finnish schools.

Second, all the data gathered were self-reports, which may mean that the neutral aspect of the school engagement lacks in our study. The use of self-reports fits well in the phenomenon like cognitive engagement which is to describe experience of the student, but especially the behavioral engagement would have benefited from using teacher observations. In addition, it could be questioned whether the adolescents were able to answer objectively to questions concerning about their absences and behavior. However, self-reported information of grade point averages has been

shown to have very high correlation with actual numbers in Finland (Holopainen & Savolainen, 2005).

Third major weakness of our study was the common variance of the independent variables. During initial examinations we noticed that the supportive context variables and self-esteem load on a single factor. Although these variables had also unique effect on dependent variables, it remains unclear whether they partially tap the same construct. This construct was not researched in this study and must be investigated in the future. Generally, the fuzziness of the engagement concepts should be assessed even more accurately in the future, and use other engagement measures simultaneously with SEI could be necessary to ensure the validity of the study. For instance, the theoretical model presented by Wang et al. (2011) and engagement measure proposed by Fredricks, Blumenfeld, Friedel, and Paris (2005) could be used in the future researches of engagement. Nevertheless, we got more knowledge of the subdimensions of SEI and noticed that two cognitive engagement subdimensions, future aspirations and control and relevance of schoolwork, behaved quite differently. Future aspirations was high in all engagement clusters and was predicted by family support, whereas Control and relevance of school work was predicted by teacher-student relationship. The further examinations of OKI and the correlations between its dimensions must be conducted to confirm the measure's reliability and validity.

Fourth, regression analyses are at their best when analyzing longitudinal data. Anyhow, our data was cross-sectional and could not take advantage of the main function of the analyses. Thus, the results are more of a correlated nature, and do not tell about direction of impact relations between variables. In the future it would be necessary to study engagement in Finnish school environment with longitudinal research frame, preferably the one with several different measurement points of time.

Conclusion

Our study contributed to the Finnish engagement literature, which is yet developing. It managed to confirm the assumption we had about the teacher-student relationship: teacher support has a considerable effect on the cognitive engagement, at least if it is measured by strategies and everyday appreciation of the school work. We noticed that future aspirations of the students relate to their families. Moreover, we managed to confirm that weak teacher-student relationships, weak self-esteem and truant behavior were risk factors for low engagement.

From the point of view of the teachers and school personnel, considerably more work needs to be done to understand teaching characteristics and teacher-student interaction better. The mechanisms of teacher support, for instance, the teacher support of the goal structures (Urdan &

Schoenfelder, 2006) and cohort cultures (Conner, 2010) would be possible and relatively little studied focus of research. Also the ways in which skilled teacher-student relationship moderates the relationship between, say, family and engagement require more attention. Especially the knowledge about compensation a teacher can offer (e.g. Furrer & Skinner, 2003) to a disengaged student would be valuable for the schools. Likewise, the mechanisms between self-esteem and cognitive and behavioral engagement should be further examined. For instance, Gregoire, Ashton, and Algina, (2001) argued that there would be a path from self-perceived ability via mastery goals to cognitive engagement indicators. Thus, self-esteem can also be an external indicator of competence defined in theory of needs (Deci & Ryan, 1985; Connell, 1990).

Taken together, engagement is not a motivational trait that exists in a vacuum. It is dynamic and changes along with the spectrum of contexts, including relationships with school personnel, parents, peers and with individual self (self-esteem). What is remarkable for educators is that their actions clearly matter. Task for the researchers is to investigate which subtle functions in these environments make the school experience meaningful. Especially the strategies which foster positive engagement circles and prevent negative ones among the students placed at risk would be valuable to recognize. This could help us to make adolescents grow to be skillful students, well-being workers and, hopefully, life-long learners.

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