Original Article

The Schoolwork Engagement Inventory

Energy, Dedication, and Absorption (EDA)

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Abstract. This study introduces the Schoolwork Engagement Inventory (EDA), which measures energy, dedication, and absorption with respect to schoolwork. Structural equation modeling was used to assess the validity and reliability of the inventory among students attending postcomprehensive schools. A total of 1,530 (769 girls, 761 boys) students from 13 institutions (six upper-secondary and seven vocational schools) completed the EDA 1 year apart. The results showed that a one-factor solution had the most reliability and fitted best among the younger students, whereas a three-factor solution was most reliable and fit best among the older students. In terms of concurrent validity, depressive symptoms and school burnout were inversely related, and self-esteem and academic achievement were positively associated with EDA. Boys and upper-secondary-school students experienced lower levels of schoolwork engagement than girls and vocational-school students.

Keywords: schoolwork engagement, upper-secondary school, vocational school, academic achievement, school burnout

Introduction

In recent years the concept of engagement has received a lot of attention in both school (Fredricks, Blumenfeld, & Paris, 2004) and work contexts (Schaufeli, Martinez, Pinto, Salanova, & Bakker, 2002). Schools are settings in which students work, attend classes, and carry out projects and assignments, so that the concept of engagement can reasonably be extended to the context of schoolwork. However, there is no short, valid, and reliable instrument to capture the key factors of schoolwork engagement (energy, dedication, absorption) and its potential transformation into work engagement. This study reports on the development of such an instrument for measuring students' energy, dedication, and absorption (EDA) with regard to their schoolwork.

Engagement in the work context is defined as a positive, fulfilling, work-related state of mind characterized by energy, dedication, and being absorbed (Schaufeli et al., 2002). Energy refers to high levels of mental resilience while working, dedication to being strongly involved in one's work and experiencing a sense of significance, and absorption to being fully concentrated on work so that time seems to pass quickly. In line with this theory and definition (Schaufeli et al., 2002), schoolwork engagement could be described as energy, dedication toward, and absorption in schoolwork. Energy in this context refers to a positive approach to schoolwork, dedication to a positive cognitive attitude and perceiving schoolwork as meaningful, and absorption to full concentration on studying so that time seems to pass quickly. We investigated whether these three theoretically derived dimensions constituted separate constructs, or whether they represented a single overall construct of schoolwork engagement. The present study includes data on students from postcomprehensive schools where they begin to focus on their careers, and where engagement with work might be assumed to originate.

Research on school engagement has a long tradition (Newmann, 1991). Fredricks et al. (2004) and Appleton, Christenson, Kim, and Reschly (2006) describe it as a broad and multidimensional construct including academic, affective (enjoyment and interest in school-related challenges), cognitive (a willingness to learn languages and mathematics) and behavioral (presence at school and compliance with school discipline) components. Schoolwork engagement, in turn, is a multidimensional but more focused construct comprising emotional (energy), cognitive (dedication), and behavioral (absorption) components. The concept of flow (Csikszentmihalyi, 1990) is defined as a short-term peak experience (which is unlikely to happen at school), whereas absorption is a more persistent state of mind. It would be interesting to investigate the extent to which energy, dedication, and absorption in the context of schoolwork engagement persist during the transition from student to worker (Hartung, Porfeli, & Vondracek, 2005). There is thus a need for an inventory that would shed light on the process related to this transition and on the origins of work engagement.

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Previous research has shown that schoolwork engagement is associated with various adjustment outcomes: The lower the level of engagement, the more depressive symptoms and the more school burnout the adolescents under investigation experienced (Salmela-Aro, Kiuru, Leskinen, & Nurmi, 2009). This is in line with the demands-resources model, which constitutes two processes (Bakker & Demerouti, 2007): an effort-driven energetic process of becoming overtaxed and worn out, in which high study demands exhaust the student's energy and lead to diminished mental health such as depression; and a motivational process in which the availability of resources to deal effectively with high study demands leads to engagement and fosters life satisfaction.

The transition from comprehensive school to secondary education is the key educational change during adolescence in many European systems. According to the stage-environment fit theory (Eccles & Midgley, 1989), positive outcomes result if the changes in school opportunities are in alignment with the changes in student needs. Entry into the academic track is challenging and stressful as students face unfamiliar expectations: The academic workload increases suddenly, the length of the school day increases, and at the same time there is less social support from teachers and peers. As a result, many students start to perform poorly academically, which may have a strong negative impact on their schoolwork engagement (Roderick & Camburn, 1999). Given these considerations, the researchers assumed that those in vocational school would experience higher levels of engagement than their counterparts in upper-secondary schools.

The objective of this study was to develop the EDA inventory and test its validity and reliability among students at postcomprehensive schools. The first aim was to determine its construct validity in two sets of data obtained 1 year apart. In the light of research on work engagement (Schaufeli, Bakker, & Salanova, 2006), we tested the structure of the EDA by comparing the goodness of fit of a one-factor model to that of a three-factor model. Two alternative hypotheses were posited:

- Hypothesis 1: A model consisting of three correlated factors that measures energy, dedication, and absorption with regard to schoolwork describes EDA (Schaufeli et al., 2006).
- Hypothesis 2: Overall EDA describes schoolwork engagement better than the three-factor model.

The second aim was to investigate the stability of the different aspects of reliability (i.e., item and scale reliability), and to determine whether schoolwork engagement was a stable rather than a transient state (Schaufeli et al., 2006). Discriminant and concurrent validity were therefore tested in the context of the demands-resources model (Bakker & Demerouti, 2007) by adding meaningful antecedents such as self-esteem, school burnout, and depressive symptoms in the final models. Gender and school track were entered as control variables. Two further hypotheses were posited:

- Hypothesis 3: Depressive symptoms and school burnout are related to a low level and self-esteem to a high level of EDA.
- Hypothesis 4: Vocational-school students have higher EDA scores than students at upper-secondary school.

Materials and Methods

The participants were adolescents who had undergone the transition to postcomprehensive school. The data were collected from all the secondary schools in one city in Eastern Finland. Finnish children start comprehensive school, which lasts for 9 years, at the age of 7, and they all receive a similar basic education up to age of 16. The majority then go on to either upper-secondary or vocational school (55% and 37%, respectively); 2% remain at comprehensive school for a voluntary tenth year, and 6% exit formal education altogether. All schooling is tuition-free. Selection to upper-secondary schools is based mainly on previous academic achievement, whereas criteria used by vocational schools also include work experience. The maximum time allowed for the completion of secondary education is 4 years.

A total of 1,530 students (769 girls, 761 boys) from 13 postcomprehensive schools (six upper-secondary, seven vocational schools; all secondary schools in one medium-sized city) completed a questionnaire on schoolwork engagement during their first year (Time 1), and then 1 year later (Time 2). Self-esteem, school burnout, and depressive symptoms were also measured at both Time 1 and Time 2. The participation rates among the total population of students in the schools ranged from between 65% and 100%, the average rate being 84%.

In terms of background variables, the mean age of the participants was 16 years ($M = 16.47$; $SD = 1.73$). The majority of them (99%) were Finnish-speaking, which corresponds well with the figures for ethnic minorities in this area, while 1% did not have Finnish as their first language. The parental occupational distribution was as follows: 27% of the fathers and 20% of the mothers worked in high-level white-collar occupations, 16% and 49%, respectively, in low-level white-collar occupations, 36% and 17%, respectively, in blue-collar jobs, 11% and 4%, respectively, were private entrepreneurs, and 9% and 10% had another status (e.g., unemployed). The questionnaires were group administered and were completed by the students in the classroom during regular school hours.

Schoolwork engagement (EDA; Appendix A) was measured on the abbreviated student version of the short Utrecht Work Engagement Scale originally developed by Schaufeli et al. (2006). The scale consists of nine items measuring energy (e.g., "At school, I am bursting with en-

ergy"), dedication (e.g., "I am enthusiastic about my studies"), and absorption (e.g., "Time flies when I am studying") with regard to schoolwork. The responses are rated on a seven-point scale ranging from 0 (*never*) to 7 (*daily*). The scale was translated in Finnish and then backtranslated to English by two official translators.

The School Burnout Inventory (Salmela-Aro et al., 2009) consists of nine items measuring: exhaustion at school (e.g., "I feel overwhelmed by my schoolwork"); cynicism regarding the significance of school (e.g., "I lack motivation for my schoolwork and often think of giving up"), and a sense of inadequacy as a student (e.g., "I often feel inadequate with regard to my schoolwork") rated on a six-point scale (1 = *strongly disagree*; 6 = *strongly agree*). Cronbach's αs were 0.90 and 0.88 for the calculated sum scores at Time 1 and Time 2, respectively.

Academic achievement was measured in accordance with the grade point average (GPA) of the final comprehensive school report on a scale ranging from 4 (lowest) to 10 (highest).

Depressive symptoms were measured on the Finnish Depression Scale (DEPS-10; Salokangas, Stengård, & Poutanen, 1994), which consists of 10 questions concerning the moods of respondents during the previous month (e.g., "I felt sad") rated on a 4-point Likert-type scale ranging from 1 (*not at all*) to 4 (*very much*). The Cronbach's αs were 0.92 and 0.90.

Self-Esteem was assessed on an abbreviated version (Salmela-Aro & Nurmi, 2007) of the Rosenberg, Schooler, Schoenbach, and Rosenberg (1995) self-esteem scale consisting of five items (e.g., "On the whole, I am satisfied with myself"), rated on a seven-point Likert-scale ranging from 1 (*totally disagree*) to 7 (*totally agree*). The Cronbach's αs were 0.78 and 0.81.

We used the Mplus statistical package (Version 5.2; Muthén & Muthén, 1998–2008) for the statistical analyses; in line with the missing-data method, we used all the available data in order to estimate the model without inputting the missing data. We estimated the model parameters by means of maximum likelihood robust (MLR) estimation, which is robust to the nonnormality of the observed variables.

The analyses proceeded as follows: First, we determined the structure of the EDA by means of confirmatory factor analysis. We estimated two alternative models separately for each of the two times and compared their goodness-of-fit using the Satorra-Bentler scaled χ^2 test for difference (Muthén & Muthén, 1998–2008): (1) a one-factor model (M1) that assumes there is one latent factor underlying all the EDA items, and (2) a three-factor model (M2) that assumes that three correlated latent factors, namely, energy, dedication, and absorption, underlie the items.

Second, we determined the reliability and validity of the EDA items based on the confirmatory factor analysis. We measured the item reliability by estimating the reliability coefficients, which was the squared correlation between the item and the factor (Bollen, 1989). In order to measure the structural validity, we estimated the standardized validity coefficients, i.e., the standardized factor loadings, which indicate the direct structural relations between the factor and the item (Bollen, 1989). We then determined the internal consistency of the EDA by estimating the factor-score scale reliabilities (e.g., the squared correlations between the factor-score scale and its relevant latent factor) and Cronbach's αs.

We then added the predictors to the final models in order to assess the stability of EDA and whether the meaningful predictors would provide evidence of concurrent validity. The relevant paths were from self-esteem, school burnout, depressive symptoms, GPA, gender and school track (Time 1 and Time 2) to the latent factors at Time 1 and Time 2.

We then used the following absolute goodness-of-fit indices goodness-of-fit of the estimated models: (1) χ^2 test, (2) root mean square error of approximation (RMSEA), and (3) the standardized root mean square residual (SRMR) (Schweizer, 2010). Because the χ^2 test is sensitive to sample size, we also used the relative goodness-of-fit indice to evaluate the model fit: the comparative fit index (CFI). Finally, we obtained the Akaike's information criterion (AIC) indices of the alternative models.

Results

The means, variances, and correlations for the observed EDA items are presented in Table 1. The first step of the confirmatory factor analysis was to include all of nine items by measuring the three different aspects of EDA: energy (ENE; 3 items), dedication (DED; 3 items), and absorption (ABS; 3 items).

We then estimated the M1 and M2 theoretical models for the nine EDA items for Time 1 and Time 2. The correlations between the three separate factors and the sum scores for energy, dedication, and absorption are presented in Table 2, and the goodness-of-fit indices of the estimated models are shown in Table 3. According to the M2 estimates for Time 1, the correlations for the energy and dedication factors were above 1 ($r = 1.01$, $p < .001$), suggesting that these factors were statistically indistinguishable. Consequently, an alternative two-factor model (M3) was estimated, which included one latent factor for energy and dedication, and another for absorption. Similarly, the results of the estimates at Time 2 revealed very high correlations between the energy and absorption factors ($r = 1.00$, $p < .001$). Consequently, an alternative two-factor model (M3) was estimated, which included one latent factor for energy and absorption and another for dedication.

The Satorra-Bentler scaled χ^2-test for difference was then applied to compare the models. The goodness of fit of models M2 and M3 at Time 1 were not superior to that of M1, suggesting that the initial one-factor model (M1) for schoolwork engagement best described it. However, at

Table 1. Correlation matrix of the raw scores of the EDA items at Time 1 and Time 2, their means and variances

EDA items	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. ENE1[1]	1.00																	
2. DED1[1]	.70	1.00																
3. ABS1[1]	.65	.65	1.00															
4. ENE2[1]	.72	.70	.73	1.00														
5. DED2[1]	.70	.70	.69	.77	1.00													
6. ABS2[1]	.46	.46	.50	.56	.56	1.00												
7. ENE3[1]	.56	.55	.55	.62	.67	.52	1.00											
8. DED3[1]	.61	.63	.62	.71	.74	.64	.66	1.00										
9. ABS3[1]	.58	.62	.61	.66	.67	.60	.63	.69	1.00									
10. ENE1[2]	.52	.45	.46	.46	.50	.32	.41	.42	.42	1.00								
11. DED1[2]	.44	.52	.44	.42	.46	.31	.40	.40	.41	.70	1.00							
12. ABS1[2]	.39	.38	.50	.43	.43	.30	.39	.41	.42	.66	.66	1.00						
13. ENE2[2]	.46	.46	.45	.50	.48	.35	.41	.45	.44	.75	.69	.76	1.00					
14. DED2[2]	.47	.48	.46	.48	.54	.36	.47	.47	.45	.73	.73	.70	.77	1.00				
15. ABS2[2]	.31	.31	.34	.33	.35	.44	.32	.38	.36	.54	.51	.56	.62	.59	1.00			
16. ENE3[2]	.37	.37	.34	.38	.44	.29	.51	.39	.37	.61	.58	.58	.62	.71	.54	1.00		
17. DED3[2]	.42	.44	.41	.44	.46	.36	.44	.49	.44	.66	.66	.65	.72	.78	.70	.70	1.00	
18. ABS3[2]	.40	.44	.33	.43	.45	.38	.44	.45	.53	.63	.62	.62	.67	.70	.66	.65	.71	1.00
Means	4.15	4.58	4.20	3.87	3.86	2.94	3.04	3.46	3.38	3.83	4.25	3.87	3.69	3.65	2.84	3.03	3.38	3.29
Variances	1.85	1.76	2.48	2.17	2.28	3.16	3.36	2.64	2.66	2.14	1.93	2.79	2.20	2.28	3.15	3.23	2.60	2.69

Notes. [1] = Time 1; [2] = Time 2, ENE = energy; DED = dedication; ABS = absorption.

Table 2. Correlation matrix between the separate factors (below the diagonal) and for the item sum scores (above the diagonal), separately for Time 1 and Time 2

	ENE	DED	ABS
Time 1			
ENE	–	0.87***	0.80***
DED	1.01***	–	0.83***
ABS	0.99***	0.99***	–
Time 2			
ENE	–	0.87***	0.82***
DED	0.99***	–	0.83***
ABS	1.00***	0.97***	–

Notes. ***$p < .001$, **$p < .01$, *$p < .05$, ENE = energy; DED = dedication; ABS = absorption.

Time 2 the goodness of fit of models M2 and M3 turned out to be superior to that of M1, indicating that either the three-factor or the two-factor model would best describe the phenomenon. There were no statistically significant differences in the goodness of fit of the two models between the measurement times. In line with the work-engagement inventory and the supporting hypothesis, M2 fit the data among older students.

The item reliabilities and validities of the EDA were explored in the subsequent estimations, which included all nine items: (1) the one-factor model M1; (2) the correlated three-factor models for energy, dedication, and absorption (M2); and (3) the correlated two-factor model M3 at Time 1 and Time 2. Separate one-factor models for each engagement dimension were also estimated in order to compare their reliability and validity properties with those of the

Table 3. Goodness-of-fit summary for the tested factor models of schoolwork engagement

Model	*N*	χ^2	*df*	*p*	CFI	RMSEA	SRMR	AIC
Time 1								
M1	1397	298.06	27	0.001	0.96	0.09	0.03	37706.95
M2	1397	291.07	24	0.001	0.96	0.09	0.03	37705.76
M3	1397	293.90	26	0.001	0.96	0.09	0.03	37705.05
Time 2								
M1	1222	266.37	27	0.001	0.96	0.09	0.03	32729.42
M2	1222	255.14	24	0.001	0.96	0.09	0.03	32718.55
M3	1222	259.91	26	0.001	0.96	0.09	0.03	32720.98

Table 4. Estimated item reliability and standardized validity coefficients (in parentheses) for the EDA models

	M1	Each factor in separate model			M2			M3 (Time 1)		M3 (Time 2)	
EDA	EDA	ENE	DED	ABS	ENE	DED	ABS	ENEDED	ABS[a]	ENEABS	DED
Item ENE1[1]	.62 (.79)	.65 (.81)	–	–	.62 (.79)	–	–	.63 (.79)	–	–	–
Item ENE2[1]	.77 (.88)	.79 (.89)	–	–	.76 (.87)	–	–	.77 (.88)	–	–	–
Item ENE3[1]	.54 (.74)	.48 (.69)	–	–	.54 (.74)	–	–	.54 (.74)	–	–	–
Item DED1[1]	.63 (.80)	–	.59 (77)	–	–	.63 (.79)	–	.63 (.80)	–	–	–
Item DED2[1]	.77 (.88)	–	.82 (.91)	–	–	.77 (.88)	–	.78 (.88)	–	–	–
Item DED3[1]	.69 (.83)	–	.67 (.82)	–	–	.68 (.83)	–	.69 (.83)	–	–	–
Item ABS1[1]	.62 (.79)	–	–	.50 (.71)	–	–	.63 (.79)	–	.63 (.80)	–	–
Item ABS2[1]	.44 (.66)	–	–	.50 (.71)	–	–	.45 (.70)	–	.45 (.67)	–	–
Item ABS3[1]	.61 (.78)	–	–	.73 (.85)	–	–	.63 (.79)	–	.62 (.79)	–	–
Item ENE1[2]	.66 (.81)	.73 (.85)	–	–	.66 (.81)	–	–	–	–	.67 (.82)	–
Item ENE2[2]	.75 (86)	.76 (.87)	–	–	.75 (.86)	–	–	–	–	.75 (.87)	–
Item ENE3[2]	.58 (.76)	.50 (.71)	–	–	.58 (.76)	–	–	–	–	.58 (.76)	–
Item DED1[2]	.63 (.79)	–	.61 (.78)	–	–	.63 (.79)	–	–	–	–	.63 (.79)
Item DED2[2]	.79 (.89)	–	.85 (.92)	–	–	.81 (.90)	–	–	–	–	.81 (.90)
Item DED3[2]	.73 (.85)	–	.71 (.84)	–	–	.58 (.86)	–	–	–	–	.74 (.86)
Item ABS1[2]	.63 (.80)	–	–	.52 (.72)	–	–	.65 (.81)	–	–	.64 (.80)	–
Item ABS2[2]	.50 (.71)	–	–	.60 (.77)	–	–	.52 (.72)	–	–	.51 (.71)	–
Item ABS3[2]	.63 (.79)	–	–	.71 (.84)	–	–	.65 (.80)	–	–	.63 (.80)	–

Notes. M1 = one-factor model; M2 = three-factor model; M3 = two-factor model. OSE = overall schoolwork engagement; ENE = energy; DED = dedication; ABS = absorption. [a]Residual variance of Absorption is fixed to zero. [1]= Time 1; [2] = Time 2.

Table 5. Coefficients and reliabilities for the factor-score scales and the Cronbach's αs

	M1	Each factor in separate model M2						M3 (Time 1)		M3 (Time 2)	
EDA	EDA	ENE	DED	ABS	ENE	DED	ABS	ENEDED	ABS[a]	ENEABS	DED
Item ENE1[1]	.09	.25	–	–	.08	.10	.09	.09	.09	–	–
Item ENE2[1]	.15	.42	–	–	.13	.16	.15	.15	.16	–	–
Item ENE3[1]	.05	.10	–	–	.05	.06	.05	.05	.05	–	–
Item DED1[1]	.10	–	.16	–	.11	.09	.11	.10	.10	–	–
Item DED2[1]	.15	–	.38	–	.17	.13	.16	.15	.16	–	–
Item DED3[1]	.10	–	.17	–	.11	.08	.10	.10	.10	–	–
Item ABS1[1]	.08	–	–	.18	.07	.07	.12	.07	.12	–	–
Item ABS2[1]	.04	–	–	.16	.03	.04	.06	.04	.06	–	–
Item ABS3[1]	.07	–	–	.38	.07	.07	.11	.07	.11	–	–
Item ENE1[2]	.10	.35	–	–	.09	.08	.12	–	–	.11	.08
Item ENE2[2]	.14	.38	–	–	.13	.12	.16	–	–	.15	.19
Item ENE3[2]	.06	.13	–	–	.06	.05	.07	–	–	.07	.05
Item DED1[2]	.09	–	.14	–	.09	.10	.07	–	–	.08	.10
Item DED2[2]	.17	–	.42	–	.17	.20	.15	–	–	.05	.04
Item DED3[2]	.12	–	.18	–	.11	.13	.09	–	–	.10	.13
Item ABS1[2]	.08	–	–	.18	.09	.05	.12	–	–	.09	.06
Item ABS2[2]	.05	–	–	.22	.05	.03	.07	–	–	.05	.04
Item ABS3[2]	.08	–	–	.36	.09	.05	.12	–	–	.09	.06
Factor score scale reliability[1]	.97	.93	.94	.91	.97	.97	.96	.97	.97		
Cronbach's α[1]	.94	.82	.87	.80							
Factor score scale reliability[2]	.98	.93	.95	.91	.98	.97	.97			.97	.97
Cronbach's α[2]	1.00	1.00	1.00	1.00							

Notes. M1 = one-factor model; M2 = three-factor model; M3 = three-factor model. EDA = overall schoolwork engagement; ENE = energy; DED = dedication; ABS = absorption. [a]Residual variance of absorption is fixed to zero. [1]= Time 1; [2] = Time 2.

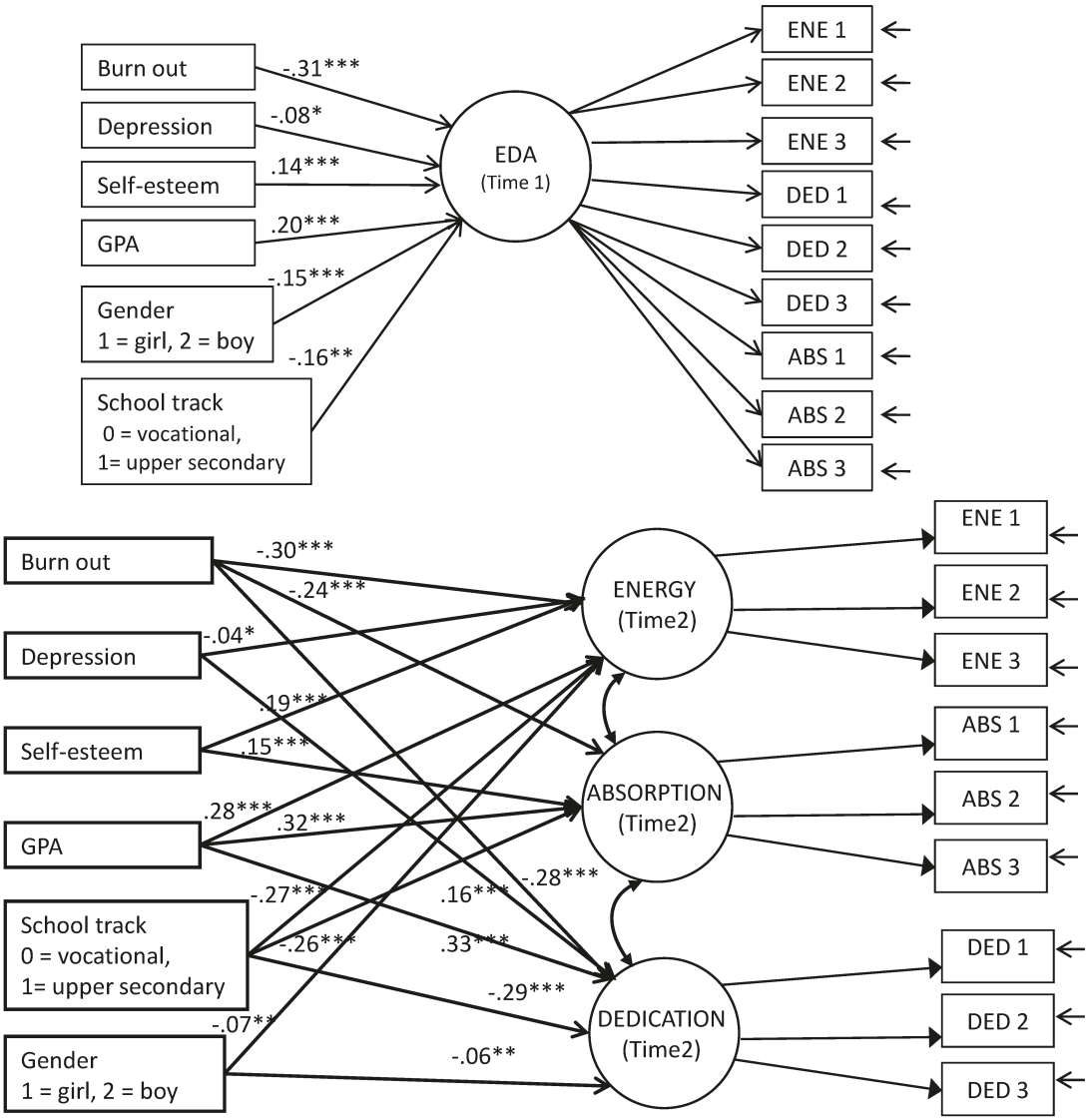

Figure 1. Concurrent validity of the estimated one-factor model (EDA overall schoolwork engagement) at Time 1 and the estimated three-factor model of schoolwork engagement at Time 2. *Note.* [1]1 = girl, 2 = boy; [2]0 = vocational school, 1 = upper-secondary school, **p* < .05, ** *p* < .01, *** *p* < .001.

other models. The coefficients were very similar in all of the models (Table 4).

We assessed the internal consistency by calculating the factor-score scale coefficients, their reliabilities, and the Cronbach's α values for the direct sums of the items at Time 1 and Time 2 (Table 5). The factor-score coefficients were estimated by means of regression analysis. All the factor-score scales showed good internal consistency, and the reliabilities were similar for M1, M2, and M3 at both measurement times. However, M2 and M3 also fit the data. According to these results, the one-dimensional model seems to describe schoolwork engagement among younger students, whereas the three-dimensional model is more relevant to older students.

Next, we examined the stabilities of the M1 (Time 1) and M2 (Time 2) models EDA at Time 1 positively predicted the energy (standardized estimate = 0.65, $p < .001$), absorption (standardized estimate = 0.64, $p < .001$), and dedication (standardized estimate = 0.64, $p < .001$) factors at Time 2. The predictors were then added by estimating the regression coefficients for school burnout, depressive symptoms, self-esteem, GPA, school track, and gender for the M1 (Time 1) and M2 (Time 2) models of schoolwork engagement. The modification indices suggested that the fit of the model at Time 1 would improve significantly if the residual variances between the second and third items of absorption, and the third and second items of dedication and absorption, respectively, were allowed to correlate. Consequently, these modifications were added. The final model ($\chi^2(73, N = 1560) = 412.48$, $p < ns$, RMSEA = 0.06, CFI = 0.96, SRMR = 0.03) is presented in Figure 1. Similarly, the fit

of the model at Time 2 would improve significantly if the residual variances between the second and third items of absorption, and the first and second items of energy were allowed to correlate. These modifications were therefore also added. The final model ($\chi^2(61, N = 1708) = 314.95$, $p < ns$, RMSEA = 0.05, CFI = 0.97, SRMR = 0.03) is presented in Figure 1. The results showed that the more burnout and depressive symptoms the students suffered, and the lower their self-esteem and GPA, the lower was their EDA at Time 1. In addition, the girls and the vocational-school students experienced higher levels of EDA than the boys and their counterparts in upper-secondary schools at Time 1. At Time 2, the higher the level of self-esteem and the GPA and the lower the burnout level, the higher were the EDA levels. The students at vocational school experienced higher EDA levels than their counterparts in upper-secondary schools. Finally, the girls scored more higher on energy and dedication than the boys at Time 2.

Discussion

This study introduces a new schoolwork-engagement inventory focusing on energy, dedication, and absorption (EDA) with regard to schoolwork. To this end we examined the extent to which the work-engagement inventory (Schaufeli et al., 2002) fit the postcomprehensive-school context. The results showed that a one-factor solution best fit the data for the younger students, and also gave the best reliability and validity indices, thereby supporting our Hypothesis 2: Energy, dedication, and absorption were closely related, thus describing overall schoolwork engagement. It is possible that, even though these three dimensions effectively describe schoolwork engagement, it is not as differentiated among younger students as work engagement is among adults: Younger students may not comprehend the subtleties in the meaning of the concept. However, the three-factor model fit well the older students, thereby supporting the work-engagement inventory and Hypothesis 1. As they approach the transition to working life, students start doing assignments that are more interesting and relevant to them.

EDA showed very high and well-rounded stability levels: It very well predicted all three factors (energy, absorption, and dedication) 1 year later. It was also found to have good concurrent validity (Hypothesis 3): In line with the demands-resources model (Bakker & Demerouti, 2007), the more depressive symptoms and school burnout adolescents suffered and the lower their GPA and self-esteem, the lower was their EDA. In accordance with Hypothesis 4, those on the academic track had lower schoolwork engagement than those on the vocational track. This supports earlier findings showing that students following the academic track experience more exhaustion than those on the vocational track because the academic demands are typically higher (Salmela-Aro, Kiuru, & Nurmi, 2008). Upper-secondary schools are typically larger and more bureaucratic than comprehensive schools, and they provide fewer opportunities for students and teachers to get to know each other. Such environments are likely to undermine further the motivation and involvement of many students, especially those not doing particularly well academically. These signs of disaffection might be signs of impending school failure, school dropout, and risk behaviors. By comparison, the vocational track focuses more on hands-on and practical activities, which might lead to improved schoolwork engagement.

The study was conducted in Finland and thus one must be cautious about generalizing the results to education and schooling in other countries. However, many European countries have similar educational systems in which students attend comprehensive school and then proceed to postcomprehensive education. The EDA might be more appropriate to postcomprehensive schools rather than the comprehensive schools.

The present findings could help teachers to understand schoolwork engagement among adolescents and how it starts to differentiate in the transition to working life. Schools should recognize and support at-risk groups in particular in terms of fostering engagement and thereby reducing the risk of alienation from school.

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Appendix

Schoolwork Engagement Inventory (EDA)

Please choose the alternative that best describes your situation (estimation from the previous month)

0	1	2	3	4	5	6
Never	A couple of times a year	Once a month	A couple of times a month	Once a week	A couple of times a week	Daily

1. (ENE1) At school I am bursting with energy.
2. (DED1) I find the schoolwork full of meaning and purpose.
3. (ABS1) Time flies when I am studying.
4. (ENE2) I feel strong and vigorous when I am studying.
5. (DED2) I am enthusiastic about my studies.
6. (ABS2) When I am working at school, I forget everything else around me.
7. (DED3) My schoolwork inspires me.
8. (ENE3) I feel like going to school when I get up in the morning.
9. (ABS3) I feel happy when I am working intensively at school.

Note. ENE = Energy; DED = Dedication; ABS = Absorption.