PERSEVERANCE AND CONSCIENTIOUSNESS SCALES AS INDICATORS OF STUDENTS' SCHOOL SUCCESS

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ABSTRACT

When thinking about students' achievement, the first thing associated with it is future success. When trying to explain why all things being equal some students may achieve highly and others may not, researchers have identified a variety of influencing factors, both those that can be measured by the tests of cognitive abilities and intelligence, and those that represent student's personality and temperament. While cognitive achievement is usually closely related to intelligence, personality and temperament are not. Researchers are still searching for the best factors to explain the impact of personality on student's achievement in learning and in everyday life and work. One such factor is perseverance that is measured in Grit scale; according to research, students with higher perseverance show better academic performance and achieve higher results in later career. Similarly, student's personality in various personality tests have shown a high correlation between achievement and personality trait Conscientiousness.

The aim of this study is to adapt an instrument for measuring perseverance, to create an instrument for measuring conscientiousness in the Latvian language, and to test whether these instruments can be used in adolescent population. The study involved 219 sixth and ninth grade students from 15 schools in Latvia. The factor structure of these two concepts were created and approved using exploratory and confirmatory factor analysis. The factor analysis resulted in two scales – one for each concept, which were compared with the students' self-reported diligence, working hard and academic achievement at current school year. Results showed that students' conscientiousness is closely related to perseverance and academic achievement. Overall, students' self-reported academic achievement can be explained by perseverance ($R^2 = 0.48$) and conscientiousness ($R^2 = 0.59$). Both constructs explain 62% of student self-reported academic achievement.

Keywords: Academic achievement, Grit, perseverance, conscientiousness, school specific Grit, Short Grit Scale, Non-cognitive skills.

Introduction

It has been a "black box" for educators to understand why there are differences in students' performance if all measurable features like socio-economic background, gender, age, intellect are similar (Kampmane et al., 2023). It was believed that intellect explains

academic achievement, but several meta-analysis studies showed that this correlation is only 0.5 (Roth et al., 2015) and that cognitive abilities did not explain income distribution later in students' life (Osborne et al., 2001). Scholars and practitioners have suggested that other students' features like attitudes, personality, perseverance and conscientiousness as well as self-concept, self-efficacy are as important as students' cognitive abilities (Chuna & Heckman, 2007; Humphries & Kosse, 2017; Kampmane et al., 2023; Kampmane & Ozola, 2022; Geske et al., 2021a; Geske et al., 2021b). Although it is believed that some students' features like personality traits are relatively stable, researchers suggest calling all these features as skills (Roberts et al., 2014) and believe that they can be trained (Bleidorn et al., 2016).

Perseverance and conscientiousness are highly popular words among educators when talking about students' success. Both are associated with responsibility, habit of hard work, diligence and achievement striving (Crede et al., 2017; John & Srivastava, 1999; Meyer et al., 2023). Some researchers have concluded that perseverance explains educational attainment better than intelligence, whereas conscientiousness explains financial income better than cognitive abilities (Palczynska & Swist, 2018).

Perseverance is defined as non-cognitive feature that can be measured by persistence and passion to achieve long-term goals (Duckworth et al., 2007). Duckworth and colleagues created and validated perseverance measurement scale and called the concept as Grit. Meta-analysis studies have found that perseverance that was measured in Grit scale was strongly and positively correlated with academic achievements (Lam & Zhou, 2019). Schmidt and colleagues (Schmidt et al., 2017; Schmidt et al., 2019) suggest adapting Grit scale to schooling in order to help students to give more precise answers, and suggest naming scale's two factors as interest and effort. Researchers have found that if perseverance was measured in domain (for example, Mathematics) specific Grit scale, it was not related to academic achievement as strong as if it was measured as school specific. Whereas Abu Hassan and colleagues (Abu Hassan et al., 2020) have concluded that results of perseverance measurement instruments that used Grit scale were not consistent among age, nationalities and languages. Some authors have argued that perseverance is the same concept as conscientiousness (Rimfeld et al., 2016; Dumfart & Neubauer, 2016). Conscientiousness have been defined as one of the five personality traits that is characterized as socially acceptable impulse control, high self-efficacy, ability to wait one's turn, ability to plan ahead and prioritize tasks in a manner that helps to accomplish them (John & Srivastava, 1999; Costa & McCrae, 2008). Several studies have provided evidence that among all personality traits, conscientiousness had the highest correlation with students' academic achievement (Poropat, 2009; Hattie, 2023), although Bardach and colleagues (Bardach et al., 2023) conclude the opposite that conscientiousness did not have significant correlation with academic achievement.

Purpose, Hypothesis and Research Questions

The purpose of this study is to 1) adapt and validate the perseverance instrument, 2) to create, adapt and validate instrument for conscientiousness measurement as stand-alone

concept without associating it as a personality trait, and 3) to evaluate the shared variance of academic achievement distribution of perseverance and conscientiousness.

The hypothesis of this study is that if perseverance is measured with school specific Grit scale's questionnaire, the construct consists of two factors – interest and effort, and both factors can be added as second order factors that represent perseverance as one concept.

The first research question of this study is – what would be the best factor structure for conscientiousness measurement? The second research question of this study is – how perseverance is related to conscientiousness and if they are related, do they share common variance of students' academic achievement distribution?

Methodology

The Sample

The sample in this study consists of two student groups that were attending 6th and 9th grades during data collection in May 2023 and January 2024. Randomly chosen schools from convenience sample were contacted and volunteering students were searched. Altogether there were 254 students from 15 schools – one class from every school. After data cleaning 219 students were eligible as respondents – 107 students from 6th grade and 112 students from 9th grade, 108 girls and 92 boys and 19 students that did not indicate their gender. All students were divided in three groups – 54 students responded to all questions, 79 students responded to questions about their conscientiousness and 86 students responded about their perseverance. In total, 132 respondents participated in conscientiousness questionnaire and 139 respondents participated in perseverance questionnaire.

Measurement Instrument of Perseverance

Perseverance is measured by Grit scale's questionnaire items that were translated from Schmidt et al. (2017). The instrument consisted of 8 items as described in appendix. As neither Duckworth and Quinn (2009) nor Schmidt et al. (2017) scales were previously translated into the Latvian language, the author of this research asked two independent translators to approve translation and conducted field study or pre-study by interviewing six 6th grade students via parents' e-mail and all 9th grade students from one 9th grade with a help of their teacher. As none of selected students had any questions or misunderstandings about the translation or meaning of questionnaire's items, the author used the translation approved by translators. Original items in Grit scale were evaluated into 5-point Likert type scale from fully agree to fully disagree. The translated questionnaire was adapted according to the Likert type scale used in large international comparative studies like IEA PIRLS and TIMSS and in other studies that are used at schools in Latvia with four items from fully agree (value 4) to fully disagree (value 1).

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Measurement Instrument of Conscientiousness

Conscientiousness scale items were constructed using several personality trait tests (Goldberg, 1999; Schmitt et al., 2007; Johnson, 2014; Maples-Keller et al., 2019; Perkona, 2022). Two instruments of Schmitt et al., 2007 and Perkona, 2022 were already translated and adapted into the Latvian language in the adult population, but none of the instruments was adapted for an adolescent population. Using Schmidt et al. (2017) suggestion to specify the items for students to think of an academic setting when answering, the author created her own conscientiousness questionnaire with 12 items as described in appendix. Items in questionnaire were evaluated into 6-point Likert type scale from "This is exactly like me" (value 6) to "This is not at all like me" (value 1).

Other Measured Items in the Research Questionnaire

Other items included general information about respondents – gender (girl, boy, do not want to indicate), current grade (6th or 9th) and age (11–16). Respondents made self-assessment about how hard they worked for schoolwork by marking values from 0 (not at all) to 10 (very hard), diligence – how diligent they were during their study semester by marking "Not diligent enough" (value 1), "Somewhat diligent" (value 2), "Quite diligent" (value 3), "Very diligent" (value 4) and academic achievement in current school year:

- Mostly what are your marks/grades in mother tongue?
- Mostly what are your marks/grades in reading (literature)?
- Mostly what are your marks/grades in Mathematics?

Students marked one of four options: "Very weak" (marks from 0 to 3, value 1), "Weak" (marks from 4 to 5, value 2), "Optimal" (marks from 6–8, value 3), "Very good" (marks from 9–10 , value 4)

Data Analysis Methods

To confirm internal factor structure of perseverance that was measured in Grit scale as it was already discovered in Schmidt et al. 2017, confirmatory factor analysis was performed. To obtain internal factor structure of conscientiousness that was measured by different items from different questionnaires, explanatory factor analysis was performed. To estimate model fit (whether retained number of factors are enough) four fit measures were applied – Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA) and Goodness of Fit (GFI) index. TLI and CFI compare how well null model fits with a currently tested model where TLI returns higher values for simpler (parsimonious) models but CFI – evaluates improvement of fit. Goodness of fit index (GFI) compares correlation matrix that of factor structure and base model. Values for all three indices varies from 0 to 1, values above 0.9 are considered to be good (Finch, 2020; Hu & Bentler, 1999). RMSEA is absolute fit index that analyses base model degrees of freedom and existing model degrees of freedom. The smaller the difference, the better model fit. Traditionally, the value of 0.06 or lesser identifies good model fit (Hu & Bentler, 1999), although there are no such "golden standard" for all cases that is why researchers suggest using more than one fit measure (Chen et al., 2008).

After factor structure was approved, scales were created from composite variables by calculating average values per each respondent (Song et al., 2013) and the scale internal consistency test was performed by calculating Cronbach's Alpha coefficients (Taber, 2018).

Before correlation analysis test of normality was performed. Following recommendations Shapiro-Wilkinson test was used. Data is normally distributed if the result of this test is not significant (Yap & Sim, 2011). Correlation analysis was performed to calculate the concurrent criterion validity of constructs (Kimberlin & Winterstein, 2008) between perseverance and conscientiousness. Correlation analysis was performed also between these two constructs and students' self-reported academic achievement, diligence and hard work. Linear regression models were analysed to calculate the predictive validity of instruments and to find the explained variance in students' self-reported academic achievement that could be explained by conscientiousness and perseverance.

For data analysis IBM SPSS 29.0.0 and Jasp 0.18.3. software was used.

Results

Perseverance Factor Structure and Dimensional Reliability

To test the hypothesis of this study that perseverance that is measured with school specific Grit scale's questionnaire is constructed of two factors – interest and effort, Confirmatory Factor Analysis (CFA) with two factor model was built as described in the previous studies (Duckworth & Quinn, 2009; Schmidt et al. 2017). Figure 1 shows factor structure and standardized loadings with sample of 140 respondents.

As it is displayed in Figure 1, perseverance consists of two factors (Fc1 and Fc2) that are moderately correlated. Both factors have 4 items with loadings above 0.4. As a sample size N<200 is considered to be fair (Comfrey & Lee, 1992), 3 to 4 items per factor were recommended (Marsh & Hau, 1999). Factors were estimated using Generalized Least Squares Method (Yuan et al., 2017), excluding cases listwise. Other fit indices are summarised in Table 1.
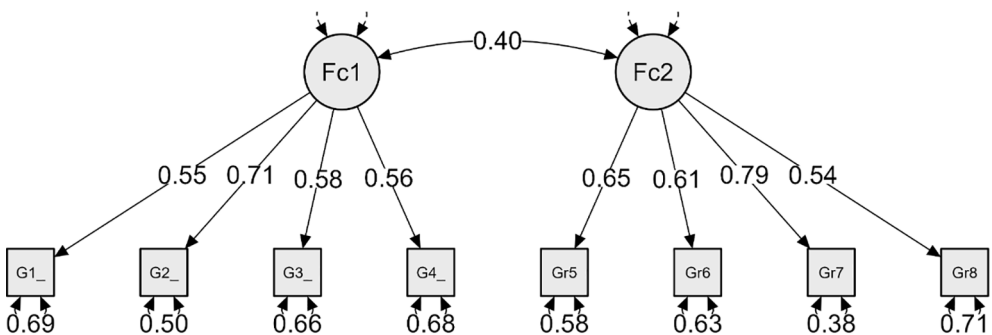

Figure 1 Two Factor Model with Standardized Loadings of Grit Scale

Note. Fc1 – factor represents Interest and Fc2 – factor represents Effort. G1_ – G4_ and Gr5 – Gr6 are Grit Scale items (see appendix)

Table 1   Two Factor Model Grit Scale Fit Indices

Indices	Value
Comparative Fit Index (CFI)	1.000
Tucker-Lewis Index (TLI)	1.046
Root mean square error of approximation (RMSEA)	0.000
Goodness of fit index (GFI)	0.967
Kaiser-Meyer-Olkin (KMO) test (Overall)	0.742
Bartlett's tests of sphericity ($p < 0.001$) degrees of freedom	205.084

All three indices – CFI, TLI and GFI were larger than 0.95 demonstrating excellent model fit as well as RMSEA is less than 0.06 (Finch, 2020; Hu & Bentler, 1999). KMO test result was larger than 0.7 and Bartlett's tests of sphericity was significant demonstrating adequacy of the sample size (Watkins, 2018). As Smidth and colleagues (Smidth et al. 2017) suggested, both factors could be extracted as a second order factors, thus both created one higher order factor perseverance. Interest and effort were moderately correlating with perseverance – 0.63 and 0.64 respectively.

To evaluate the impact of perseverance on academic achievement, a scale was created by calculating average values. According to Gerbing and Anderson (1988), the scale must be unidimensional, and its reliability coefficient Cronbach's alpha (CA) should be greater than 0.7 (Taber, 2018). As both factors could be extracted as second order factors, a perseverance scale was created. In this case CA = 0.713 (excluding cases listwise) what is considered to be reasonable.

Conscientiousness Factor Structure and Dimensional Reliability

As the conscientiousness questionnaire was created from scratch, there were no previous studies about its factor structure. To find the answer to the first research question, Exploratory Factor Analysis (EFA) was performed. Factors were extracted using Generalized Least Square Method (Yuan et al., 2017) with Oblique Promax rotation (Matsunaga, 2010), based on assumption that eigenvalue > 1 (Zwick & Wayne, 1986). As a result, the analysis suggested to extract three factor structure (see Table 2).

Table 2   Factor Model of Conscientiousness Questionnaire Items

Item name	Factor 1	Factor 2	Factor 3	Uniqueness
In school stuff like order and systematicity	0.870	–	–	0.336
Strive to excel in my schoolwork	0.708	–	–	0.408
Fulfil my commitments to schoolwork	0.674	–	–	0.438
Do schoolwork according to a plan	0.657	–	–	0.441

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Item name	Factor 1	Factor 2	Factor 3	Uniqueness
Like order	0.558	–	–	0.694
Am always prepared for my schoolwork	0.436	–	–	0.542
Always do my homework	0.420	–	–	0.663
*Leave my school belongings unordered	–	0.740	–	0.479
*Neglect my duties at school	–	0.441	–	0.677
*Often forget to put school things back in their proper place	–	0.424	–	0.744
*In schoolwork am often confused	–	–	0.742	0.495
*Shirk my schoolwork duties	–	–	0.482	0.588

Note. Applied rotation method is promax; * Items reversely coded

Factor 3 consisted only of two items, and Factor 2 – only of three items. In both cases only one item was loaded more than 0.7. It is not suggested to assume that the extracted factor structure is good (Velicer & Fava, 1998; Watkins, 2018). Bartlett's test was significant and overall KMO was equal to 0.755; that shows adequacy of sample size for this model (Shrestha, 2021), but other fit measures were not satisfactory TLI = 0.663, CFI = 0.727 and RMSEA = 0.125 (Schermelleh-Engel et al., 2003). As any of the reversely coded items did not load on Factor 1, the author of this research deleted these items along with items that were not from questionnaire adapted in the Latvian language by Perkona (2022) leaving only these 5 items:

- In school stuff (things) like order and systematicity (factor loading = 0.741),
- Do schoolwork according to a plan (factor loading = 0.724),
- Strive to excel in my schoolwork (factor loading = 0.631),
- Am always prepared for my schoolwork (factor loading = 0.612),
- Like order (factor loading = 0.585).

After modifications overall KMO was 0.818, additional fit indices indicated good model fit – RMSRA = 0.00, TLI = 1.002 and CFI = 1.000 (Schermelleh-Engel et al., 2003). Besides, out of all tested combinations, this factor structure was considered to be the best fitting structure of all tested models. As all items loaded on one factor the conscientiousness scale was created as average values (Gerbing & Anderson, 1988). Its unidimensional reliability CA = 0.792 with excluding cases listwise, is considered to be good (Taber, 2018). As the reliability of the scale could be improved by adding one more item to the scale "Fulfil my commitments to schoolwork" to CA = 0.822, the author created this scale with six items, although when adding the item to EFA, it lessened the model fit.

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Relationships Between Conscientiousness, Perseverance, Diligence and Achievement

Before answering the second research question, the test of normality was performed on all variables (see Table 3).

Conscientiousness and perseverance scales were normally distributed whereas other scales were not. If data is not normally distributed (Shapiro-Wilkinson test is significant), to obtain significancy in corelation analysis bootstrapping method is suggested (Bishara & Hittner, 2012). The correlation analysis between all five variables were performed (see Table 4).

Table 3   Variables Used in Correlation and Linear Regression Analysis

Variable	Shapiro-Wilk (*p* value)
Working hard	‹.001
Diligence	‹.001
Mean self-reported academic achievement	‹.001
Mean conscientiousness (scale)	0.066
Mean perseverance (scale)	0.172

Table 4   Pearson's Correlations with Bootstrapping Method Between Perseverance, Conscientiousness, Working-hard, Student Self-reported Marks and Diligence

			Perseverance	Conscientiousness	Average marks	Diligence	Working hard
Perseverance	Pearson Correlation		1	0.602**	0.352*	0.527**	0.420**
	Sig. (2-tailed)		–	‹.001	0.01	‹.001	0.002
	Bootstrap	Bias	0	−0.01	0.003	−0.002	−0.009
		Std. Error	0	0.099	0.107	0.099	0.124
		BCa 95% CI Lower	–	0.37	0.111	0.287	0.133
		Upper	–	0.751	0.557	0.695	0.619
Conscientiousness	Pearson Correlation		0.602**	1	0.619**	0.474**	0.484**
	Sig. (2-tailed)		‹.001	–	‹.001	‹.001	‹.001
	Bootstrap	Bias	−0.01	0	0.005	−0.004	−0.005
		Std. Error	0.099	0	0.067	0.092	0.106
		BCa 95% CI Lower	0.37	–	0.46	0.276	0.242
		Upper	0.751	–	0.768	0.64	0.673

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			Perseverance	Conscientiousness	Average marks	Diligence	Working hard
Average marks	Pearson Correlation		0.352[*]	0.619[**]	1	0.464[**]	0.546[**]
	Sig. (2-tailed)		0.01	‹.001	–	‹.001	‹.001
	Bootstrap	Bias	0.003	0.005	0	0.003	−0.003
		Std. Error	0.107	0.067	0	0.112	0.101
		BCa 95% CI Lower	0.111	0.46	–	0.224	0.328
		Upper	0.557	0.768	–	0.694	0.708
Diligence	Pearson Correlation		0.527[**]	0.474[**]	0.464[**]	1	0.484[**]
	Sig. (2-tailed)		‹.001	‹.001	‹.001	–	‹.001
	Bootstrap	Bias	−0.002	−0.004	0.003	0	−0.006
		Std. Error	0.099	0.092	0.112	0	0.131
		BCa 95% CI Lower	0.287	0.276	0.224	–	0.143
		Upper	0.695	0.64	0.694	–	0.702
Working hard	Pearson Correlation		0.420[**]	0.484[**]	0.546[**]	0.484[**]	1
	Sig. (2-tailed)		0.002	‹.001	‹.001	‹.001	–
	Bootstrap	Bias	−0.009	−0.005	−0.003	−0.006	0
		Std. Error	0.124	0.106	0.101	0.131	0
		BCa 95% CI Lower	0.133	0.242	0.328	0.143	–
		Upper	0.619	0.673	0.708	0.702	–

Note. [*] significant at $p < 0.05$ [**]significant at $p < 0.01$
Bootstrap results are based on 1000 bootstrap samples, Listwise $N = 52$

All correlations were significant as none of the bootstrapping confidence intervals (CI) crossed zero (Field, 2017). Correlation between perseverance and conscientiousness was 0.602, but between conscientiousness and student self-reported marks – 0.619. Correlation between diligence and perseverance was 0.527 and correlation between diligence and conscientiousness (0.474) and diligence and marks were 0.464. All these correlation coefficients can be considered as moderate (Schober et al., 2018). Moderate correlations between perseverance and conscientiousness in this study prove the concurrent criterion validity of constructs (Kimberlin & Winterstein, 2008).

To evaluate the impact of conscientiousness and perseverance on academic achievement, three linear regression models were constructed. In all three models the student self-reported academic achievement was a dependent variable.

Table 5   Coefficients of Determination of Linear Regression Equations
Representing How Student's Self-reported Achievement Was
Affected by the Selected Independent Variable

Independent variable	R²
Conscientiousness	0.59
Perseverance	0.48
Conscientiousness (C) and Perseverance (P)	0.62

If in a linear regression model both perseverance and conscientiousness were analysed, the model explained 62% of academic achievement distribution whereas conscientiousness alone explained 59% of distribution but perseverance alone – 48%. Thus, both constructs shared the same variance, but conscientiousness explained students' academic achievement more than perseverance. If conscientiousness was considered, perseverance added only three additional percent to explained variance of students self-reported academic achievement. The linear regression models provided construct predictive validity on students' academic achievement.

Conclusions

The hypothesis of this study was proved successfully and the answers to both research questions were found. As hypothesized, perseverance that was measured in the Grit scale was constructed of two factors – interest and effort. Both factors could be extracted as second order factors, thus, of perseverance. In this case a unidimensional measurement scale of perseverance was created. The answer to the first research question was found by extracting factors of conscientiousness questionnaire with EFA. After the analysis, only five items were left as these created the best fitting one factor structure. To answer the second research question, a unidimensional measurement scale of conscientiousness was created. To add more reliability to the scale, one more item from the conscientiousness questionnaire was added additionally to the factor structure extracted by EFA. The correlation analysis between perseverance and conscientiousness provided the concurrent criterion validity of both constructs. Linear regression models provided the predictive validity of both constructs on students' academic achievement. Conscientiousness explained the academic achievement better than perseverance, but both constructs together explained 62% of academic achievement variance. This research has provided evidence that conscientiousness is closely related with perseverance, however, these constructs are not the same. The results indicate the significance of students' non-cognitive skills. Thus, the author suggest that educators and parents dedicate more attention to developing conscientiousness and perseverance skills, as these are closely related to academic achievement.

The main limitation of this study is the sample – 6th and 9th grade students from only 15 schools in Latvia participated, and in each school whole class was selected. The results of this study might be biased by student's personality and classroom environment.

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Students whose personality is more conscientious and who are more persistent might invest more attention and energy in answering questionnaire questions more thoroughly. Students' answers might be biased by social desirability. As the results of this study were consistent with previous studies none of biases mentioned before can be taken as a reason of veracity. Thus, further studies are needed with adapted instruments to continue the validation process in Latvian language. Students' self-reported perseverance and conscientiousness should be compared with actual not self-reported academic achievement longitudinally. Students throughout primary and secondary school should be researched to generalize the results of the study.

Ethic's statement

This research was conducted in full accordance with the ethical guidelines governing social research. All participants were instructed on the purpose of this study and their free choice to participate – participation was entirely voluntary. Participants' confidentiality and anonymity were strictly maintained throughout the study, with data being anonymous – no information was gathered that would let anyone to be identified. The data were securely stored to prevent unauthorized access.

There were no conflicts of interest that could have influenced the research outcomes. Additionally, cultural norms and values were respected throughout the research process, ensuring that the study was sensitive to the diverse backgrounds of the participants.

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Appendix

Table 1 Girt Scale Items and Translation into the Latvian Language (Schmidt et al. 2017)

Items in English	Abbreviation in Figure 1	Items' Translation into Latvian
I often set a goal in school but later choose to pursue a different one	G1_	Bieži mainu savus mācību mērķus
New ideas and plans sometimes distract me from my goals in school	G2_	Jaunas idejas un plāni novērš manu uzmanību no mācību mērķiem
In school I have been obsessed with a certain plan or project for a short time but later lost interest	G3_	Mācībās esmu bijis(usi) ar kaut ko ļoti aizrāvies(usies), bet vēlāk zaudēju par to interesi
I have difficulty maintaining my focus on school projects that take more than a few weeks to complete	G4_	Man ir grūtības koncentrēties mācību projektiem, kas ir ilgāki par dažām nedēļām
In school I finish whatever I begin	Gr5	Mācību darbā es pabeidzu visu, ko esmu iesācis(kusi)
In school setbacks don't discourage me	Gr6	Turpinu mācīties arī tad, ja man neveicas
I work hard for school	Gr7	Es uzcītīgi pildu mācību uzdevumus
I am a diligent student	Gr8	Esmu centīgs skolēns

Table 2 Conscientiousness Scale Items and Translation into the Latvian Language (adapted from Goldberg, 1999; Schmitt et al., 2007; Johnson, 2014; Maples-Keller et al., 2019; Perkona, 2022)

The name of the variable	Items in English	Items translation into Latvian	Items' adapted translation into Latvian	Back translation into English
Consc8_rec	Often forget to put things back in their proper place (Goldberg, 1999; Johnson, 2014)	Bieži aizmirstu nolikt lietas atpakaļ savās vietās (Perkona, 2022)	Bieži aizmirstu skolas lietas nolikt atpakaļ savās vietās	Often forget to put school things back in their proper place
Consc9	Like order (Goldberg, 1999)	Patīk kārtība (Perkona, 2022)	Patīk kārtība	Like order
Consc4_rec	Leave my belongings around (Goldberg, 1999; Johnson, 2014)	Atstāju savas mantas nesakārtotas (Perkona, 2022)	Atstāju savas skolas lietas nesakārtotas	Leave my school belongings unordered
Consc3	Am always prepared (Goldberg, 1999; Johnson, 2014)	Esmu vienmēr sagatavojies (Perkona, 2022)	Esmu vienmēr sagatavojies(usies) mācībām	Am always prepared for my schoolwork

The name of the variable	Items in English	Items translation into Latvian	Items' adapted translation into Latvian	Back translation into English
Consc6	Mess things up (Goldberg, 1999) Like to tidy up (Johnson, 2014; Maples-Keller et al., 2019)	Patīk kārtība un sistemātiskums (Perkona, 2022)	Skolas lietās patīk kārtība un sistemātiskums	In school stuff like order and systematicity
Consc5_rec	Neglect my duties (Goldberg, 1999)	Nevērīgi izturos pret saviem pienākumiem (Perkona, 2022)	Nevērīgi izturos pret saviem pienākumiem skolā	Neglect my duties at school
Consc12_rec	Is easily distracted (Schmitt et al., 2007)	Viegli apjūk (Schmitt et al., 2007)	Mācību darbā bieži apjūku	In schoolwork am often confused
Consc10_rec	Shirk my duties (Goldberg, 1999)	Izvairos no savu pienākumu pildīšanas (Perkona, 2022)	Izvairos no savu skolas pienākumu pildīšanas	Shirk my schoolwork duties
Consc11	Do things according to a plan (Goldberg, 1999) Carry out my plans (Maples-Keller et al., 2019)	Daru darbus saskaņā ar plānu (Perkona, 2022)	Daru mācību darbus saskaņā ar plānu	Do schoolwork according to a plan
Consc7	Usually do my homework	Parasti izpildu mājas darbus (Perkona, 2022)	Vienmēr izpildu mājas darbus	Always do my homework
Consc1	Follow through on my commitments (Goldberg, 1999) Complete tasks successfully (Johnson, 2014)		Mācībās izdaru to, ko esmu apņēmies(usies)	Fulfil my commitments to schoolwork
Consc2	Excel in what I do (Goldberg, 1999; Johnson, 2014)		Mācību darbā tiecos būt izcils(a)	Strive to excel in my schoolwork

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