



Emotional, Behavioural and Cognitive Engagement, Self-Efficacy and Satisfaction of Primary School Students

Tomislava Vidić

University of Zagreb Faculty of Teacher Education, Zagreb, Croatia

Abstract

Recently, the interest of researchers in children's wellbeing has increased markedly. This growing body of research aims to understand and secure children's development into healthy and happy individuals. The conceptualization of school satisfaction is perceived as pivotal in affecting children's happiness and subsequent healthy functioning across various developmental domains. Regarding the amount of time children spend in school, it is important to determine the levels of their school satisfaction and self-assurance, and the measure of their cognitive, emotional and behavioural engagement. This research sought to examine the extent to which demographic characteristics (age, gender and final grades), self-efficacy and cognitive, emotional and behavioural student engagement contribute to the explanation of school satisfaction. The research was implemented in two primary schools in Zagreb, Croatia. It involved students from the fourth to the eighth grade of primary school (age range: 9 – 14). A total of 659 students completed measures of self-efficacy, engagement and school satisfaction. The results of the correlation analysis found moderate positive correlation between all examined variables. The implemented hierarchical regression analysis showed that the included predictors explained 68.6% of the school satisfaction variance. Emotional engagement, student self-efficacy, and cognitive and behavioural engagement were proven as significant predictors. Students' age had a lesser contribution, whereas gender and final grades had no significant predictive value. These findings impart a comprehensive understanding of the factors that intervene in primary school students' school satisfaction in Croatia and enrich theoretical implications.

Keywords: engagement; primary school; self-efficacy for self-regulated learning; school satisfaction; students

1. Introduction

Two decades ago, Noddings (2003) pointed out that student happiness should be the central aim of education, and ever since, authors have invested their interest in this research area. Although at the time there was no scientific backing to this claim, consequent studies have found that school-related experiences have a significant role in numerous benefits for children and play a major role in life satisfaction (Huebner et al., 2014). It was proven that students' everyday experiences contribute to their life satisfaction more than various acute life events.

Subjective wellbeing (SWB) refers to several separable components: life satisfaction and satisfaction with life domains (e.g., school satisfaction), frequent positive affect, infrequent negative affect and positive thoughts about life, that is, perceiving it as fulfilling and meaningful (Diener et al., 2018). Considering the time students spend in school, it can be said without a doubt that school satisfaction bears importance for their overall subjective wellbeing, which was confirmed in research conducted in Australia (Tomin & Cummins, 2011) and Europe (Mínguez, 2020). Research heretofore confirmed the correlation between SWB and students' mental and physical health, academic achievement (Steinmayr et al., 2019), engagement (Elmore & Huebner, 2010) and self-efficacy (Simonsen & Rundmo, 2020).

1.1 Self-efficacy

The concept of self-efficacy, which was presented in the frame of social-cognitive theory by Bandura, has significantly influenced education and the psychology of education. Self-efficacy (SE) is defined as individual belief in the ability to perform tasks and realise the set goals (Bandura, 1997). There are numerous advantages of self-efficacy, and one of the most researched consequences is its correlation to student academic achievement. Meta-analysis conducted by Honicke and Broadbent (2016) proved that student self-efficacy is one of the most important predictors of academic achievement.

Previous studies mostly focused on measuring self-efficacy in different areas. In the field of education, self-efficacy is most often described in terms of academic self-efficacy (ASE). Elias and MacDonald (2007) define ASE as learner judgements about their ability to achieve educational goals successfully. Apart from academic self-efficacy, the research on self-efficacy for self-regulated learning (SESRL) is also frequent. SESRL is defined as the confidence to achieve control over one's own attention and actions in different task situations and use adaptive strategies; it is associated with motivation, persistence and effort in a variety of academic learning situations (Klassen, 2010). Generally, students can be described as self-regulated based on how actively they participate in their own learning process on a metacognitive, motivational and behavioural level (Zimmerman, 1989).

Self-regulated learners direct their learning process and accomplishments by setting ambitious goals, employing appropriate strategies to achieve those goals and activating self-regulatory influences that motivate and guide their efforts. These students strongly believe in their abilities, whereby they shape both knowledge and the set skill objectives and commitment to overcoming challenges (Zimmerman et al., 1992). The frequency of students using self-regulatory strategies often relies on the confidence in their ability to do so. Therefore, mere awareness of self-regulatory strategies is not enough to ensure their effective application; students should also possess the necessary confidence for their effective use. This belief in self-regulatory abilities, referred to as self-efficacy for self-regulated learning, acts as a crucial predictor of students' successful application of self-regulatory skills and strategies across various academic domains (Usher & Pajares, 2008). Consequently, self-efficacy for self-regulated learning plays a vital role in academic achievement (Dignath et al., 2008; Panadero, 2017).

Apart from the relationship with academic achievement, more recent studies confirm the correlation between student self-efficacy and engagement (Fokkens-Bruinsma et al., 2021; Sökmen, 2021). It seems that belief in the ability to independently organise work tasks and realise desired educational goals motivates students to invest greater effort in achieving these goals.

1.2 Engagement

As opposed to self-efficacy, which entails belief, engagement refers to students' active involvement in learning tasks and activities. Engagement is considered a relatively new construct, which has been researched more intensely in the last two decades. Precisely this has caused certain disagreement on the definition of engagement and its determination as a two-dimensional, three-dimensional or four-dimensional concept. However, the prevailing definition regards engagement as a meta-construct that includes behavioural, emotional and cognitive engagement (Fredricks & McColskey, 2013; Fredricks et al., 2004). Authors have focused their research interest on engagement, which is considered the main cause of poor student achievement, boredom, estrangement and dropping out of school (Fredricks et al., 2004).

1.2.1 Behavioural engagement

Behavioural engagement entails students' participation and inclusion in school activities. Such inclusion encompasses not only student attentiveness during class and following school rules but also attendance, participation in extracurricular activities and the like. Behavioural engagement was proven important in the realization of high academic achievement (Guo et al., 2015); furthermore, its correlation to students' subjective wellbeing was also proven (Zhu et al., 2019). On the other hand, correlation was found between low behavioural engagement and increased internalizing (e.g., depression) and externalizing (e.g., delinquency) problem behaviours in adolescence (Li & Lerner, 2011).

1.2.2 Cognitive engagement

Cognitive engagement entails the willingness to exert the effort necessary to comprehend complex ideas and master difficult skills (Mahatmya et al., 2013). Research into cognitive student engagement shows its direct influence on academic achievement. Students who are more cognitively engaged achieve higher grades and better results in standardized tests, and their subjective wellbeing is more pronounced (Ladd & Dinella, 2009). Besides, the correlation between cognitive engagement and students' subjective wellbeing was also proven (Pietarinen et al., 2014). More precisely, it was shown that students' subjective wellbeing acts as a mediator between emotional and cognitive engagement and students' academic achievement.

1.2.3 Emotional engagement

Emotional engagement involves positive and negative reactions to teachers, classmates and the school; it facilitates a student's connection to a school and influences their motivation to work harder (Mahatmya et al., 2013). Emotional engagement encompasses affective factors of engagement, including enjoyment, support, belonging and attitudes towards teachers, peers, learning and school in general. Apart from its correlation to subjective wellbeing and school achievement (Pietarinen et al., 2014), emotional engagement is also related to teacher-student and peer-group relationships (Ulmanen et al., 2016).

1.3 School satisfaction

School satisfaction is defined as "students' cognitive appraisal of their school life quality" (Baker & Maupin, 2009, p. 189) and is considered the main aspect of student life satisfaction

(Verkuyten & Thijs, 2002). Apart from that, the correlation between school satisfaction and academic achievement was proven (Baños et al., 2019; Samdal et al., 1999).

In the last 20 years, the interest of authors in this research area has been clearly notable, with the goal of uncovering the contributing factors to school satisfaction. The results of previous research in the field showed differences in school satisfaction with regard to student demographic characteristics. Namely, it was shown that younger students are more satisfied with school (Randolph et al., 2010), and in most studies girls were more satisfied than boys (Chen et al., 2020; Verkuyten & Thijs, 2002). Moreover, in one part of the research, the difference was found in students' school satisfaction with regard to their culture and country (Ferguson et al., 2010; Freeman et al., 2012; Gilman et al., 2007; Löfstedt et al., 2020). Apart from demographic characteristics, students' satisfaction is influenced by fulfilling fundamental psychological needs (relatedness, autonomy, competence) (Suldo et al., 2022), relationships between classmates (Tian et al., 2016), school climate (Daily et al., 2020) and social support (Danielsen et al., 2011; Danielsen et al., 2009), etc.

Gutiérrez et al. (2017) examined the relationship between social support, student engagement and school satisfaction. It was found that support from parents, peers and teachers effects higher student engagement and consequently school satisfaction. Doménech-Betoret et al. (2017) investigated the relationship between student self-efficacy, school satisfaction and academic achievement. It was proven that students' expectancy-value beliefs play a mediating role in the relationship between academic self-efficacy and achievement and school satisfaction.

School satisfaction effects numerous benefits. Apart from the already proven correlation between student school satisfaction and academic achievement, it was found that more satisfied students skip classes less frequently and rarely drop out of school (Pedditzi, 2024). Besides, students who love school are characterized by superior psychological functioning. For example, low school satisfaction can act as a risk factor for mental health problems, whereas students who love school are happier and more satisfied with their lives (Mínguez, 2020).

1.4 Current study

The purpose of this research was to determine the extent to which students' self-efficacy and engagement are related to their school satisfaction. Based on previous research, it was hypothesized that students' demographic characteristics, self-efficacy and engagement statistically significantly contribute to greater school satisfaction.

2 Method

2.1 Participants and procedure

This research was conducted among fourth- to eighth-grade students of two primary schools in Zagreb. It included a total of 685 students, that is, 82,43% of the overall number of students in the examined grades. Due to incompletely filled-out questionnaires, 26 students were excluded from further data processing, so the final sample comprised 659 students.

The sample encompassed 329 boys (49.92%) and 330 girls (50.08%), whose average age was 11.9 ($SD = 1.5$). In total, the research included 144 students of the fourth grade (21,9%), 125 students of the fifth (19%), 121 students of the sixth grade (18,4%), 138 students of the seventh grade (20,9%) and 131 students of the eighth grade (19,9%). Data analysis regarding final grades shows the prevalence of As: the average final grade in Croatian is $M = 4.6$; $SD = 0.6$, English $M = 4.6$; $SD = 0.7$ and Maths $M = 4.4$; $SD = 0.8$ (range 1 – 5).

Before the research implementation, a written consent from the parents was obtained. The purpose of the research was communicated to both students and parents, as well as the fact that the research was completely anonymous and voluntary. It was conducted via the paper-pencil method separately in each grade, and it lasted around 30 minutes.

2.2 Instruments

Apart from the general socio-demographics (age/grade, gender, final grades), the research was conducted via three questionnaires: student self-efficacy questionnaire, engagement questionnaire and school satisfaction questionnaire.

Students' self-efficacy – Self-Efficacy for Self-Regulated Learning Questionnaire (Zimmerman et. al., 1992) was used to measure self-efficacy in learning. It is a one-dimensional questionnaire encompassing 11 questions that measure student ability to use different strategies of self-regulated learning (e.g., *How well can you study when there are other interesting things to do?*). The participants answered by using a five-degree scale: 1 – *not too well*, to 5 – *very well*. The questionnaire's factor structure was checked via the main components method with orthogonal (varimax) rotation ($KMO = .909$, Bartlett's sphericity test $\chi^2_{df55} = 2535.44, p = .000$). One-factor structure was obtained, as in the original scale, which explained 44,47% of the self-efficacy variance for self-regulated learning. Cronbach's α coefficient of the scale's reliability is $\alpha = .868$.

Students' engagement – Behavioural-Emotional-Cognitive School Engagement Scale, BEC-SES (Li et al., 2008), was used to measure engagement. The questionnaire contains 10 claims and five questions whereby three engagement dimensions are measured: behavioural, emotional and cognitive engagement. Behavioural engagement includes questions aimed at determining the level of student involvement in class: a lower level signifies mere presence, whereas higher means invested effort (e.g., *How often do you come to class unprepared?*). Emotional engagement includes five claims that describe the sense of belonging to a school and students' standpoints toward school (e.g., *I enjoy the classes I am taking.*). Cognitive engagement involves five claims that describe student willingness to learn and progress and future value of the learned content (e.g., *I think the things I learn at school are useful.*). The participants expressed their agreement with the claims on a five-degree scale, from 1 (*strongly disagree*) to 5 (*strongly agree*), and the answers to the scale's questions from 1 - *never* to 5 – *always*. The factor structure of the engagement questionnaire was checked via the main components method with orthogonal (varimax) rotation. According to the Kaiser-Guttman criterion, three factors had characteristic roots over one, and they explained 53.30% of the variance. After the rotation, the first factor, emotional engagement, explained 20.79%, the second factor, i.e. behavioural engagement, 16.64%, and the third factor, cognitive engagement, explained 15.87% of the variance. The extracted factors respond to the factor solutions of the original scale. Cronbach's α coefficient for the subscale of emotional engagement is $\alpha = .779$, for behavioural engagement $\alpha = .707$, and for cognitive engagement $\alpha = .699$.

Students' school satisfaction – to measure students' school satisfaction, one dimension of Multidimensional Students' Life Satisfaction Scale (MSLSS) was applied (Huebner, 1994; Huebner et al., 1998). The school satisfaction dimension entails eight claims (e.g., *I look forward to going to school.*), and the participants expressed their agreement on a five-degree Likert scale: 1 – *strongly disagree*, to 5 – *strongly agree*. The factor structure of the school satisfaction questionnaire was verified via the main components method ($KMO = .871$; Bartlett's sphericity test $\chi^2_{df28} = 2122.538; p = .000$). One-factor structure was obtained, as in

the original scale, which explained 50.15% of the school satisfaction variance. Cronbach's alpha coefficient is $\alpha = .851$.

3 Results

The basic descriptive parameters are presented in Table 1. As can be seen from the data on the distribution's skewness and kurtosis, the obtained values can be described as approximately normal (Hair et al., 2022). Descriptive statistics (Table 1) point out that the participants showed averagely medium school satisfaction and behavioural and emotional engagement, whereas the perception of self-efficacy and cognitive engagement is somewhat higher than the mean values.

Table 1: Descriptive statistics ($N = 659$)

	M	SD	Min	Max	Skewness	Kurtosis
Self-efficacy	4.06	0.670	1.00	5.00	-0.853	0.690
Emotional engagement	3.61	0.845	1.00	5.00	-0.518	-0.017
Cognitive engagement	4.24	0.660	1.00	5.00	-1.303	1.446
Behavioural engagement	3.67	0.628	1.00	5.00	-0.513	0.343
School satisfaction	3.36	0.826	1.00	5.00	-0.192	-0.207

The relationship between self-efficacy dimensions in self-regulated learning, emotional, cognitive and behavioural engagement and school satisfaction was examined via the Pearson correlation coefficient. Correlational matrix for the whole sample is presented in Table 2. The obtained results for the overall sample show that all variables are significantly correlated.

Correlation coefficients between the variables are presented in Table 2. The obtained values show medium correlation between all variables, with the correlation between emotional engagement and school satisfaction as somewhat higher. The precise form of the relationship between these factors is explored next.

Table 2: Correlations between main variables ($N = 659$)

	1.	2.	3.	4.	5.
1. Self-efficacy	-	,501**	,563**	,660**	,554**
2. Emotional engagement		-	,501**	,517**	,781**
3. Cognitive engagement			-	,558**	,568**
4. Behavioural engagement				-	,624**
5. School satisfaction					-

Note: * $p < 0.05$; ** $p < 0.01$

Obtained results on the correlation between the variables show they are suitable for regression analysis. Additionally, elements required for the implementation of the analysis were checked. Results show that, although not all the variables are normally distributed, the distributions are neither bimodal nor U distributions, and they are mostly symmetrical. Additionally, the unexplained part of the criterion's variance (residuals) is normally distributed. The value of the Durbin-Watson test is somewhat lower than two (1.387), and the VIF factors are under four (1.008 to 1.980), i.e. they do not indicate multicollinearity.

The results of the regression analysis are presented in Table 3. They show the regression coefficient $R = .828$, i.e. 68.6% of the explained school satisfaction variance based of the included predictors.

The first step of the regression analysis shows that gender does not contribute to the explanation of school satisfaction, as opposed to grade (age). The regression coefficient is statistically significant, and the negative beta ponder indicates the increase of age (grade),

affects the decrease of school satisfaction. In the first step, 18.0% of the overall 18.5% of the school satisfaction variance is explained by grade (age).

GPA, self-efficacy and emotional, cognitive and behavioural engagement were added in the second step of the analysis. The percentage of the explained school satisfaction variance increased by 50.1%, to 68.6% ($R = .828$). The rise in the percentage of the explained variance is statistically significant ($F = 207.672$; $p < .001$). Significant predictors are self-efficacy ($\beta = .121$; $t = 3.969$; $p < .01$), emotional engagement ($\beta = .603$; $t = 23.226$; $p < .01$), cognitive engagement ($\beta = .127$; $t = 4.681$; $p < .01$) and behavioural engagement ($\beta = .099$; $t = 3.215$; $p < .01$), while other variables do not have an independent contribution to the explanation of school satisfaction.

Table 3: Contribution of self-efficacy, emotional, cognitive and behavioural engagement to the explanation of school satisfaction

	ΔR^2	β	t	p
Step 1				
gender		.050	1.418	.157
grade		-.422	-11.921	.001**
	$R = .430$; $R^2 = .185$ Adjusted $R^2 = .182$; $\Delta F_{(2/656)} = 74.242$; $p < .001$			
Step 2	.501**			
Average grade		.047	1.861	.063
Self-efficacy		.121	3.969	.001**
Emotional engagement		.603	23.226	.001**
Cognitive engagement		.127	4.681	.001**
Behavioural engagement		.099	3.215	.001**
	$R = .828$; $R^2 = .686$; Adjusted $R^2 = .682$; $\Delta F_{(5/651)} = 207.672$; $p < .001$			

Note: * $p < 0.05$; ** $p < 0.01$.

Additional analyses show that the part of the explained variance of school satisfaction via emotional engagement is 46.8%, self-efficacy 6.7 %, cognitive engagement 5.8% and behavioural engagement 5.0%. All other portions of the variance explanation are considerably lower. The portion of the grade's importance also decreased by introducing these predictors.

4 Discussion

First research task was to determine the existence of the correlation between student self-efficacy, engagement and school satisfaction. The obtained results confirmed medium correlation between the examined variables. Furthermore, participant students assigned the highest assessments to their own self-efficacy and cognitive engagement, somewhat lower to emotional and behavioural engagement and the lowest to school satisfaction. It seems that Croatian students are more prone to assess their own (cognitive) abilities as higher, i.e. the belief in their ability to fulfil school demands. However, the sample comprised students with high academic achievement (measured in school grades), so high assessment of self-efficacy and engagement should come as no surprise. Namely, previous student achievement influences self-efficacy development (Bandura, 1997), so the students with higher academic achievement are more convinced in their own abilities. A lower estimate of school satisfaction points to trends that exist in other countries as well (Löfstedt et al., 2020). It is therefore extremely important to determine all the factors that influence students' school dis(satisfaction).

Hierarchical regression analysis was implemented to investigate the second research task. The results have shown that emotional engagement has the greatest contribution to students' school satisfaction, while the influence of cognitive and behavioural engagement was somewhat smaller. Similar results were obtained in previous studies. Therefore, students' opinion about the school and the feeling of school belonging are the most important predictors

of school satisfaction. Healthy school environments promote active student learning, warmth in peer-to-peer and student-teacher relationships, cooperation and open communication and thus facilitate the emergence of the sense of school belonging. When students feel good and schools motivate the fulfilment of their need for belonging, emotional engagement ensues, which consequently leads to school satisfaction. Of course, students' cognitive and behavioural engagement, as well as their self-efficacy, should not be ignored. Stimulating school and classroom environment encourages and motivates students to work. Realising results in accordance with the invested effort certainly influences students' school satisfaction.

Interestingly enough, students' gender, age and grade point average were not proven as important predictors of school satisfaction. Although it was considered for a long time that girls are more satisfied with school than boys (Ferguson et al., 2010; Randolph et al., 2010), one part of research found no difference between boys and girls with regards to school satisfaction (Saleh et al., 2019). Similarly, for a long time it was considered that age influences school satisfaction, more precisely, that younger students are more satisfied with school (Baker & Maupin, 2009). However, a part of the studies yielded different results (Randolph et al., 2010; Saleh et al., 2019). It is possible to infer that older students get accustomed to school over time and in such a way their school satisfaction rises, so ultimately they are no different from younger students with regard to school satisfaction. Finally, academic achievement (measured in GPA) was not proven as a contributing factor to school satisfaction. Although it is logical to assume that more successful students will be more satisfied with school than the others, it seems that the feeling of school belonging and student belief in the ability to perform school tasks are more important for school satisfaction.

5 Conclusion

The aim of this research was to determine the measure to which students' demographic characteristics, self-efficacy and engagement contribute to school satisfaction. The results emphasise the importance of students' emotional engagement in affecting school satisfaction. Although other forms of engagement, i.e. cognitive and behavioural, as well as student self-efficacy, significantly contribute to student school satisfaction, emotional engagement was nevertheless proven as the greatest predictor of school satisfaction. The sense of school belonging and positive student affect during the time spent in school are most important for overall school satisfaction.

Aside from the scientific contribution, it is important to point out practical implications of this research. Results indicate the importance of creating positive school and classroom atmosphere that propels student emotional engagement and consequently leads to school satisfaction. Such environment empowers healthy and optimal development and significantly contributes to students' subjective wellbeing.

Finally, the multicontextuality of the factors that influence student school satisfaction should be noted. In order to gain a more in-depth understanding of all the contributing factors of school satisfaction, it would be useful to conduct qualitative research among students with the goal of recognising what makes them satisfied and happy individuals.

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