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University Student Satisfaction and Student Engagement: Example from Croatia

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Abstract

Studying student satisfaction and the factors that can shape it is crucial for understanding the determinants of academic success and the quality of the student experience. In this context, student engagement has been identified in previous research as a variable that is significantly associated with satisfaction with studies. The aim of this study was to examine differences in student satisfaction and engagement with regard to field of study and gender, and to determine the relationship between different dimensions of student engagement and satisfaction. The study was conducted on a sample of N = 337 students from different Croatian universities, where the main focus was placed on the Higher Education Student Engagement Scale. The results showed that female students achieved higher results in social engagement with peers and affective engagement, which indicates greater emotional involvement and a pronounced focus on social relationships. With respect to the field of study, arts and humanities students showed higher cognitive engagement compared to STEM students, while social science and humanities students also showed higher engagement compared to STEM students in social engagement with teachers. Despite the differences in engagement, neither gender nor field of study was a significant predictor of student satisfaction. The analysis of interrelationships showed that cognitive and affective engagement were the most important predictors of satisfaction, together explaining 47% of the variance in this variable. The findings highlight the key role of the quality of student engagement in shaping student satisfaction and indicate the importance of developmental teaching practices that encourage cognitive engagement and students' emotional connection to the learning process.

Keywords: Student Engagement, Satisfaction, Study Fields

1. Introduction

Higher education plays a key role not only in the development of individuals but also in the progress of society as a whole. It is not only a space for acquiring professional knowledge, but also a context in which students develop critical thinking, civic responsibility, and personal potential. Given its multidimensional nature, it is necessary to continuously reflect on and analyze the factors that shape the higher education experience. One of the key

indicators of the quality of this experience is satisfaction with studies, which is increasingly highlighted in academic literature as a fundamental outcome of higher education. Although often associated with academic achievements, satisfaction with studies is also largely determined by the quality of interpersonal relationships and the types of social interactions in which students participate (Wong & Chapman, 2023). Therefore, a deeper understanding is crucial for improving the student experience. On the other hand, student engagement is a complex construct that can be interpreted in different ways, even within the same educational context (Payne, 2019). However, its encouragement brings numerous benefits, both at the individual and community levels (Errey & Wood, 2011). Promoting student engagement is therefore becoming important not only for individual development but also for strengthening the academic community as a whole.

Student engagement is a construct that has been the subject of numerous studies due to its proven connection with academic success in higher education (Kahu, 2013). Although it is difficult to unambiguously identify all the reasons that lead to reduced student engagement, the literature cites factors such as family problems, perceived excessive demands of the study program, and unsatisfactory teaching quality (Goss & Sonnemann, 2017). Given that student disengagement can result in dropping out of studies, this construct is extremely important for further research (Banks & Smith, 2021). Student engagement is defined as “the willingness, need, desire, and compulsion of students to participate in the learning process and be successful in it” (Bomia et al., 1997). As stated by Zepke, Leach & Butler (2010), since the 80s, numerous studies have been developed that focus on how students engage in their studies and what they, institutions, and teachers can do to improve their engagement and thus their success. Some of them have also shown that student engagement is influenced by a number of affective factors, including attitudes, personality traits, motivation, effort, and level of self-confidence (Mandernach et al., 2011). Previous research by Kandiko Howson & Matos (2021) conducted in the UK showed that those students who reported higher levels of engagement, measured on 17 engagement measures, also reported significantly higher levels of satisfaction. Bakker, Sanz Vergel & Kuntze, (2015) showed that study engagement fully mediated the relationship between personal resources and observed learning activities; study resources were indirectly positively related to learning activities through study engagement.

Numerous studies have focused on examining the level of student satisfaction in traditional and online educational environments. Dziuban, Wang & Cook (2004) found that students are more likely to evaluate courses and teachers positively when they perceive that teachers communicate effectively, encourage and support their learning, clearly organize the course content, demonstrate interest in student progress, show respect for students, and fairly evaluate student work. The positive correlation between student engagement and student satisfaction was also confirmed in the study by Gray and DiLoreto (2016), conducted in the context of online education, while the correlation was also confirmed for gratitude, forgiveness and humility and happiness, gratitude and happiness (Sapmaz et al., 2016), and humility and psychological well-being (2020).

For the purposes of the current study, student engagement is conceptualized as a multifaceted construct including academic, cognitive, affective, and social domains of engagement. Academic engagement refers to regular learning, learning during weekends, regular class attendance, the use of different sources for learning, and the use of digital technologies in learning. Cognitive engagement refers to enjoyment in intellectual challenges, motivation, and intellectual stimulation gained from learning study subjects. Affective engagement refers to belongingness to the university community, liking to spend time on campus or at university facilities, and feeling connected to the academic community. Social engagement with peers refers to communicating with student peers, group learning, engaging in extracurricular activities with other students, etc. Social engagement with teachers refers to communicating with teachers in search of help, searching for feedback from teachers, and discussing one’s work with teachers.

As stated by Evans & Zhu (2023), there are a number of instruments available to measure student engagement, such as the National Survey of Student Engagement (NSSE, 2016) conducted in the USA and Canada, the United Kingdom Survey of Student Engagement (UKES, 2013), and the Australasian Survey of Student Engagement (AUSSE). These tools provide a general understanding of student engagement. However, they are limited in terms of providing insight into the actual learning process, the ways in which students engage in academic practices and assessment systems, and in providing specific guidance to students on what constitutes meaningful and effective

participation in the educational process. One of the most often used tools is also the HESES scale, which was developed from the 61-item First Year Engagement Scales (FYES). For brevity, it was trimmed into a 28-item scale having regard to the content validity, factor loadings, and error variances of the items (Zhoc et al., 2019).

In this study, special emphasis was placed on analyzing whether there is a difference in student engagement across different study fields. Namely, according to some previous research (Ghawas, Munir & Khalid, 2025), it was shown that students from STEM environments more often have high indicators of motivation, participation in class, and interaction with teachers and peers, which leads to better academic results compared to students from non-STEM contexts.

State why the problem deserves new research. For basic research, the statement about importance might involve the need to resolve any inconsistency in the results of past work and/or extend the reach of a theoretical formulation. For applied research, this might involve the need to solve a social problem or treat a psychological disorder. When research is driven by the desire to resolve controversial issues, all sides in the debate should be represented in balanced measure in the introduction. Avoid animosity and ad hominem arguments in presenting the controversy. Conclude the statement of the problem in the introduction with a brief but formal statement of the purpose of the research that summarizes the material preceding it. For literature reviews as well as theoretical and methodological articles, clearly state the reasons that the reported content is important and how the article fits into the cumulative understanding of the field.

1.1. Research objectives and research questions

The aim of this research was to explore the relationship between university student satisfaction and student engagement across different domains. Therefore, the research questions were as follows:

1. Do satisfaction and student engagement vary across different study fields?
2. Are there gender differences in student satisfaction and student engagement?
3. Is there a significant relationship between student engagement and student satisfaction?
4. Which engagement domains are the strongest predictors of student satisfaction?

2. Method

2.1. Participants

A total of $N = 337$ students from different Croatian universities participated in the survey. The sample included significantly more female students (83.4%) than male students (15.7%), while three participants did not declare gender (0.9%). The largest number of respondents was from the University of Split (59.9%), followed by the University of Zagreb (26.4%), Juraj Dobrila University in Pula (3.9%), Josip Juraj Strossmayer University in Osijek (3.6%), and the University of Slavonski Brod (2.4%). Of the total number of students, 38.9% of participants studied in arts & humanities, 33.2% in social sciences, and 27.9% in STEM fields. Most of the participants had parents with completed secondary school education (61% of mothers, and 60% of fathers), followed by undergraduate or graduate education (32.6% of mothers; 31.5% of fathers). Less than 5% of participants' parents had finished only elementary education (2.1% of mothers; 4.2% of fathers) or had postgraduate education (4.2% of both, mothers and fathers). More than half of the participants (51.6 %) finished last year with a very good grade (4), 30.3% of respondents finished with an excellent grade (5), and 17.2% with a good grade (3).

2.2. Instruments

The questionnaire consisted of three parts. The first part consisted of a series of 6 questions related to the demographic characteristics of the respondents (gender, mother's and father's level of education, family size, university from which the respondent comes, and field of study of the respondent).

Student satisfaction was measured with a single item where students had to assess the degree of satisfaction with their studies on a scale from 1 to 5 (1 indicates completely unsatisfied; 5 indicates totally satisfied).

Higher Education Student Engagement Scale (HESES - Zhoc, Webster, King, Li & Chung, 2019) was used for assessing student engagement. The Scale conceptualizes engagement as the quality of students' involvement in educationally purposeful activities that lead to meaningful learning outcomes. Student engagement is viewed as a multidimensional construct, influenced by both student characteristics and institutional practices. Scale consists of 28 items measuring different domains of student engagement – academic engagement, cognitive engagement, social engagement with peers, social engagement with teachers, and affective engagement. Participants had to assess how much they agree with each item on a five-point Likert scale (1 - I completely disagree; 5 –I completely agree). The scale was translated into Croatian using the double-blind translation method. Descriptive statistics for subscales are presented in Table 1.

Table 1: Descriptive statistics for HESES subscales

HESES subscales	N	M	sd	range	Cronbach α	skewness	kurtosis
Academic engagement	8	32.58	4.83	8-40	.76	-1.09	2.18
Cognitive engagement	4	14.85	3.41	4-20	.83	-.74	.55
Social engagement with teachers	4	11.95	4.21	4-20	.87	.03	-.70
Social engagement with peers	8	25.89	6.66	8-40	.80	-.21	-.35
Affective engagement	4	14.09	4.43	4-20	.92	-.58	-.52

N – number of items

2.3. Procedure and data analysis

For the purpose of data collection, an online survey was conducted via the Limesurvey platform, which was distributed to all universities in the Republic of Croatia with a request to forward it to students at their email addresses, place it on e-learning systems, student networks, etc. The survey was conducted in the period from March 1 to April 1, 2025. A total of 337 responses were collected. The empirical analysis was carried out using SPSS version 23.

In the data analysis, a descriptive analysis was first performed, followed by correlation analysis; t-tests for gender differences; one-way ANOVA for testing differences among different study fields, and hierarchical regression analysis for examining the contribution of student engagement domains in explaining individual differences in student satisfaction.

3. Results

Table 2 presents differences in student satisfaction and student engagement across different study fields. Significant differences were observed in cognitive engagement and social engagement with teachers. In cognitive engagement, students in arts and humanities scored higher than students in STEM fields, although the effect is of small size. Significant difference in social engagement with teachers reflects higher engagement of both students in social sciences and arts and humanities compared to STEM students, who assessed this type of engagement lower.

Table 2: Differences in student satisfaction and engagement among different study areas (t-test results)

	Social sciences		Arts & humanities		STEM		F	p	η^2_p	Fisher LSD
	M	SD	M	SD	M	SD				
Satisfaction	3.71	.90	3.76	.94	3.50	1.01	1.71	.184		
Academic engagement	4.05	.55	4.06	.66	4.11	.58	.227	.797		
Cognitive engagement	3.70	.85	3.85	.85	3.55	.84	3.36	.036	.02	2>3

Social engagement with teachers	3.07	.99	3.21	1.09	2.57	.96	11.14	.000	.06	1>3; 2>3
Social engagement with peers	3.28	.86	3.23	.82	3.18	.83	.377	.686		
Affective engagement	3.54	1.08	3.66	1.07	3.30	1.17	2.91	.056		

Gender differences in student satisfaction and engagement are presented in Table 3. Females scored higher on two variables – social engagement with peers and affective engagement.

Table 3: Gender differences in student satisfaction and student engagement

	Female students		Male students		t (df = 332)	p
	M	SD	M	SD		
Satisfaction	3.71	.95	3.58	.91	.876	.381
Academic engagement	4.11	.56	3.94	.67	1.94	.053
Cognitive engagement	3.75	.81	3.62	.96	1.03	.305
Social engagement with teachers	3.00	1.02	2.90	1.16	.680	.497
Social engagement with peers	3.28	.80	3.02	.94	2.15	.033
Affective engagement	3.61	1.08	3.15	1.15	2.80	.005

Table 4 presents a correlation matrix of variables in the study. Satisfaction is significantly related to all domains of student engagement, which are all significantly interrelated.

Table 4: Correlation matrix of variables

	1.	2.	3.	4.	5.	6.	7.
1. Gender							
2. Study field	-.07						
3. Satisfaction	.02	-.07					
4. Academic engagement	.06	.04	.33*				
5. Social engagement with teachers	.10	-.05	.34*	.40*			
6. Social engagement with peers	.04	-.18*	.40*	.41*	.36*		
7. Affective engagement	.11	-.08	.67*	.42*	.48*	.43*	
8. Cognitive engagement	.01	-.06	.49*	.52*	.37*	.59*	.56*

*p < .01

With the aim of answering the fourth research question, hierarchical regression analysis was performed with domains of student engagement as predictors and student satisfaction as the criterion. In the first step of analysis, gender was entered, followed by the study field and finally student engagement. For the study field, two dummy variables were created since the original variable consisted of three categories. Gender, as well as study fields, did not prove to be relevant for student satisfaction. Still, student engagement domains, entered in the last part of the analysis, significantly contributed to the explanation of satisfaction, with the most important predictors being cognitive and affective engagement. Predictors explained 47% of satisfaction variance.

Table 5: Results of HRA with student satisfaction as a criterion

1. step	2. step	3. step
Gender	Gender	Gender
R (R2)	Social sciences	Social sciences
F (df)	Arts & humanities	Arts & humanities
	R (R2)	Academic engagement
	ΔR2	Cognitive engagement

F (df)	1.15 (3,333)	Social engagement with teachers	.08
		Social engagement with peers	.01
		Affective engagement	.58**
R (R2)			.69 (.47)
ΔR^2			.46**
F (df)			36.94 (8,328)

4. Discussion

This research, which was conducted on a sample of students from various study programs in the Republic of Croatia, focused on the relationship between student engagement and their satisfaction. First, significant differences in two aspects of student engagement regarding the study field were detected. Students in STEM fields had assessed significantly lower social engagement with teachers compared to the other two groups. Furthermore, students from the arts and humanities assessed cognitive engagement higher compared to students in STEM fields, although that difference was minimal. The results possibly imply a different approach by teachers in STEM programs. These results may also point to the need to strengthen social interactions in these fields of study. On the other hand, the somewhat higher level of cognitive engagement among students in the arts and humanities suggests that teaching methods that encourage critical thinking, reflection, and interpretation may contribute to deeper learning. This is in line with previous research, e.g., Brint, Cantwell & Hannerman (2008), which highlights that the culture of engagement in the arts, humanities, and social sciences emphasizes interaction, active participation, and interest in ideas, while in the natural sciences and engineering, it is focused on improving the quality of work and results. Generally speaking, the observed differences between fields of study indicate the need for higher education institutions to develop field-specific strategies for encouraging student engagement, rather than a universal approach.

Gender differences have to be interpreted with caution since there were only 15.7% of male participants included. Results pointed to higher affective engagement and social engagement for female students compared to male students. These results are in line with some previous research showing higher engagement in female students (Ćirić, 2022), and specifically higher behavioral and emotional engagement (Zhou, 2025; Kobicheva, 2022). The results can also be understood as a continuation of earlier influences throughout adolescence. Namely, during early schooling, girls are more focused on social relationships and peers, e.g., attachment with peers is more important for academic outcomes for girls than for boys (DiPrete & Jennings, 2012; Li & Qin, 2025). Gender-based differences were also confirmed in an earlier study by Koludrović, Bubić, and Reić Ercegovac (2014), in which girls showed a higher level of orientation towards social relationships and mastery goals, as well as a lower orientation towards performance-oriented goals, compared to boys, which is in line with most previous findings. Another study was performed by Koludrović & Reić Ercegovac (2013), according to which the focus on social relationships, manifested through two goal orientations (belonging and caring for others), was significantly more pronounced in female students than in male students.

In this research, special emphasis was placed on the analysis of predictors of student satisfaction, and it was shown that cognitive and affective engagement can explain 47% of the variance in satisfaction. The relationship between student engagement and student satisfaction has also been studied at other educational levels, from elementary school (Wilson et al., 2012) to high school (Heffner & Antaramian, 2016), as well as in other countries (Korobova & Starobin, 2015; Gálvez-Nieto et al., 2025), and also under changed conditions, such as the COVID-19 pandemic (Çalışkan, 2023; Ramírez-Hurtado, 2023). These are two very important constructs that are always interesting to observe, especially bearing in mind that monitoring student satisfaction is considered a key element in monitoring the quality of higher education institutions (Kanwar & Sanjeeva, 2022).

Previous research conducted by Wilson (2021) in the Republic of Croatia aimed to determine whether self-efficacy and engagement act as mediating variables in the relationship between classroom climate and student satisfaction

with schools. According to this research, self-efficacy has a statistically significant positive effect on explaining engagement, while, on the other hand, negative classroom climate has a significant positive effect on engagement, which in turn contributes to the final effect on school satisfaction. The model explained a total of 56% of the variance in school satisfaction, which is in line with this research.

4.1. Limitations of current research and future directions

Although this study provides deeper knowledge in the context of student engagement and student satisfaction, especially emphasizing the difference between genders, the field of study still has certain limitations that need to be stated here.

First, the research sample was gender-unbalanced, with a relatively small proportion of male participants (15.7%), which limits the generalizability of findings on gender differences and requires caution in their interpretation. Second, the research was conducted on a sample of students from the Republic of Croatia, which may limit the applicability of the results to other cultural and educational contexts. Furthermore, although statistically significant differences between fields of study were observed, some of them (e.g., in cognitive engagement) were minimal, which calls into question their practical importance. Therefore, future research should include more gender-balanced and numerically larger samples in order to more reliably examine gender differences in different dimensions of student engagement. Additionally, combining quantitative and qualitative methods in future research could provide deeper insight into the reasons for lower social engagement of students in STEM fields and into specific pedagogical practices that encourage cognitive and affective engagement. It would also be important to identify current teaching methods in STEM fields in order to analyze whether they condition lower levels of the social sub-dimension of engagement. Based on this, it is recommended to consider other factors, such as the size of student groups and institutional culture, in shaping student engagement in different areas of study. Also, research by Salinda Weerasinghe, Lalitha & Fernando (2017) showed how student satisfaction is a complex psychological process influenced by many factors in different environments, and how each context is a valuable influence for bringing about different research.

4.2. Conclusion

Research into the relationship between student engagement and student satisfaction has shown that there are gender and disciplinary differences in certain dimensions of student engagement. Female students achieved higher results in social engagement with peers and affective engagement, which indicates greater emotional involvement and a more pronounced focus on social relationships in the study environment. Significant differences were also found with respect to the field of study in cognitive engagement and social engagement. Arts and humanities students showed a higher level of cognitive engagement compared to STEM students, although the effect was small, while in social engagement with teachers, social sciences and humanities students also showed greater engagement compared to STEM students, who assessed this dimension as lower. Despite the aforementioned differences in engagement, neither gender nor field of study proved to be a significant predictor of student satisfaction. However, analyses showed that certain domains of student engagement are significantly associated with student satisfaction. Cognitive and affective engagement emerged as the most important predictors of satisfaction, together explaining 47% of the variance in this variable. These findings confirm the central role of the quality of student engagement in shaping their satisfaction with their studies and point to the importance of developing teaching practices that encourage students' cognitive involvement and emotional connection to the learning process.

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