

DOI 10.51558/2490-3647.2026.11.1.783

UDK 159.922.7

Primljeno: 22. 10. 2025.

Izvorni naučni rad

Original scientific paper

Anna Alajbeg

EXPERIENCE OF POSITIVE AND NEGATIVE EMOTIONS OF ELEMENTARY SCHOOL STUDENTS IN 5-8th GRADES

The aim of this study was to examine gender and grades differences in the experience of positive and negative emotions during the educational process among students of elementary school in 5-8th grades. The research was conducted among students from two elementary schools in the Republic of Croatia, of which $n=158$ were female and $n=99$ were male (average age= 12.1). Students completed General Data Questionnaire, the Scale of Positive and Negative Experience, and three subscales from the School Life Quality Questionnaire (School achievement, Teachers and Experience of learning). The results of Mann-Whitney U test revealed statistically significant gender differences, where female students achieve higher levels of sadness. No statistically significant gender differences were found regarding positive emotions. The Kruskal-Wallis's test showed statistically significant higher levels of positive, pleasant, joyful, and satisfied emotions in younger students in the 5th grade compared to older students. A statistically significant higher level of unpleasant emotions was also recorded among sixth-grade students compared to 8th-grade students. These results suggest that gender and age play a role in the emotional experience of subject-based instruction, highlighting the need for strategies to support students' emotional well-being. Practical implications include the development of targeted interventions, such as emotion regulation programs, especially for girls and older students, and the need for more dynamic and engaging teaching approaches to increase joy and engagement.

Keywords: emotions; students in 5-8th grades; gender differences; age differences; positive emotions; negative emotions

1. INTRODUCTION

Emotions are an indispensable part of human existence and profoundly influence almost all aspects of our lives, including the educational process. They significantly shape students' motivation, engagement, and ultimately, academic success. While there are various definitions of emotion, Oatley and Jenkins (1992) describe them as reactions stemming from the appraisal of an event as relevant to an important goal, experienced positively when the goal is achieved and negatively when it is thwarted. While emotions are often considered automated physiological reactions to stimuli, feelings represent the conscious subjective experience of these emotions (Damasio 1999). Emotions are always directed toward some important goal; if an event is not relevant to a goal, emotions will not arise (Bognar and Dubovicki 2012). During the 1970s, Paul Ekman identified six basic emotions – happiness, sadness, disgust, fear, surprise, and anger – which are universally experienced across all human cultures. He later expanded this list to include pride, shame, embarrassment, and excitement (Cherry 2021). Although Ekman's theory is one of the most well-known, other theorists have proposed their own ideas about basic emotions (Scarantino 2015). Some suggest the existence of only two or three basic emotions, while others view emotions in a hierarchy, where primary emotions like love, joy, surprise, anger, and sadness can be further broken down into secondary ones (Cherry 2021). A more recent study even suggests the existence of at least 27 interconnected emotions (Anwar 2023). Given that emotions can be both constructive and destructive, the challenge lies in their regulation to leverage their beneficial features and limit their harmful aspects. If emotions arise at the wrong time or with the wrong intensity, they can harm us (Dekeyser et al. 2024). People have significant control over their emotions, using various strategies aimed at modifying cognitions or behaviours (Gross and John 2003). Emotion regulation refers to various processes by which emotions themselves are controlled, and these processes can be automatic or conscious, unconscious or voluntary, affecting different phases of the emotional experience (Dekeyser et al. 2024). Emotion regulation describes the effort to change the intensity, duration, or expression of emotions to achieve a desired emotional response or adapt to social or situational demands. This includes strategies for reducing negative emotions (sadness, anger) or increasing positive ones (happiness, joy). Emotions have three key functions: intrapersonal (their role within an individual), interpersonal (their role among individuals within a group), and social/cultural (their role in maintaining social order) (Hwang and Matsumoto 2019). Emotions inform us about who we are, what our relationships with others are

like, and how to behave in social interactions (Hwang and Matsumoto 2019). They prepare us for behaviour, guiding systems such as perception, attention, reasoning, learning, memory, goal selection, motivational priorities, physiological reactions, motor behaviour, and behavioural decision-making (Ullsperger et al. 2014).

A review of previous research clearly shows that emotions play an important role in teaching. As students move from lower to upper grades of primary school, the complexity of their school life increases, including more teachers, diverse subjects, and higher expectations. This structural change in teaching, from one teacher teaching multiple subjects to multiple teachers teaching specialized subjects, presents a unique emotional challenge that has not been sufficiently addressed in previous research. In this regard, this study focuses on examining sociodemographic variables, specifically gender and age, to determine the differences in students' emotional experiences during this educational stage. Given the scarcity of empirical research in this context, this paper seeks to systematically analyse the role and dynamics of student emotions. The primary objective is to identify and interpret the occurrence and intensity of positive and negative emotional states during the teaching process.

1.1. Literature Review

Emotions play a crucial role in the educational process, significantly influencing students' experiences, motivation, and achievements. Positive emotions such as joy, satisfaction, pride, and curiosity are linked to better learning, creativity, and deeper engagement in the learning process (Fredrickson 2013). Research conducted in Finland with 53 students revealed that students who experienced more positive emotions during class achieved better test results, were more motivated to learn, and showed higher levels of self-regulation (Jiang et al. 2016). In contrast, negative emotions like anxiety, boredom, frustration, and stress can have a detrimental impact on learning and academic success. When students are overwhelmed by negative emotions, they may struggle with concentration, memorization, and problem-solving (Pekrun 2006; Zeidner and Stoeger 2019). A study conducted in New York with 144 high school students showed that anxiety was significantly associated with poorer exam results and lower self-confidence (Putwain et al. 2010). Teachers and the school environment play a key role in fostering positive emotions in students. A supportive classroom climate, teacher support, challenging tasks, and an interactive approach to teaching can significantly contribute to creating a positive emotional environment (Skinner and Belmont 1993). In research conducted with 230 students from two Mid-Atlantic regions

in the United States, it was found that teachers who showed more warmth, support, and understanding towards students had a positive impact on student motivation and engagement in class (Wentzel 2002).

The development of emotional regulation is also a vital aspect of teaching, as it helps students recognize, understand, and effectively manage their emotions. Programs that include the development of emotional skills, such as mindfulness, self-awareness, and assertiveness, can help students manage stress, improve social relationships, and achieve better results (Brackett et al. 2012; Durlak et al. 2011). Learning emotional regulation can help students develop an awareness of their own emotions and learn strategies for managing them, including techniques like breathing, meditation, and reframing thoughts (Gross 2014). A study conducted in a high school showed that programs incorporating the development of emotional skills had a positive impact on students' emotional well-being, their social connectedness, and academic success (Brackett et al. 2012; Durlak et al. 2011). Furthermore, it is important to emphasize that emotional support and a positive relationship between teachers and students play a crucial role in creating a positive emotional environment in the classroom. Teachers who are warm, supportive, and understanding towards students can help create a safe space where students feel free to express their emotions and learn with a sense of connection and acceptance (Skinner and Belmont 1993).

1.1.1. Positive Emotions in Teaching

Traditional theories of emotion in psychology have been fruitful for studying negative emotions, but often inadequate for studying positive emotions (Fredrickson 2001). Furthermore, traditional theories that addressed the functions of positive emotions for cognition and behaviour often focused on negative effects, rather than their regulatory benefits (Aspinwall 1998). Positive emotions have a strong impact on our well-being and overall life experience. Research has shown that positive emotions improve mental health, social relationships, productivity, and physical well-being. Positive emotions, such as joy, gratitude, interest, and kindness, broaden our cognitive and physical repertoire, opening our minds and hearts to new possibilities and experiences (Fredrickson 2001). Positive emotions foster optimism, self-confidence, and resilience to stress, which helps us face challenges and achieve success (Halilsoy 2024). In a social context, positive emotions play a crucial role in building and maintaining healthy relationships with others. Emotional honesty, kindness, and empathy, associated with positive emotions, contribute to improved communication, trust, and

support among people (Barrett et al. 2007). It is important to emphasize that positive emotions not only enhance the immediate feeling of satisfaction but also have long-term effects on our well-being. Emotional well-being, based on positive emotions, is linked to better mental health, greater resistance to disease, and a longer lifespan (Biswas-Diener and Diener 2006).

In the classroom, positive emotions significantly influence students' experiences and motivate them to learn and participate in activities. When students are engrossed in feelings such as joy, satisfaction, pride, and interest, this can lead to increased attention, engagement, and productivity in the learning process (Kahu et al. 2017). A study by Li et al. (2020) explores the deep connection between emotions and learning, emphasizing how people, due to their social nature, are inherently emotional beings. These authors highlight how emotions affect our ability to learn and our academic results, even though emotions are rarely given primary attention in educational settings. When students are emotionally engaged and motivated, they more easily acquire new knowledge, develop creativity and problem-solving skills, and create meaningful connections between theoretical concepts and their practical application (Almulla 2023). Using motivating and engaging activities, providing constructive feedback, and fostering cooperation among students can contribute to creating a stimulating environment that encourages positive emotions. In a state of happiness, joy, or satisfaction, our thoughts become more flexible, expanding to new ideas and perspectives, and opening up space for creative problem-solving (Kahu et al. 2017). When students experience positive emotions during class, it can foster their intrinsic motivation and desire for further exploration and improvement in that area. Therefore, creating a positive emotional atmosphere in the classroom has far-reaching benefits for student development. Teachers can adapt their teaching methods to encourage positive emotions, including interactive activities, challenging projects, and support for individual student interests and abilities. It is crucial for teachers to actively create an environment that encourages positive emotions in students.

1.1.2. Negative Emotions in Teaching

Negative emotions are relatively well-researched in science, and it has been established that they can significantly impact our cognitive abilities. For instance, anxiety can hinder attention, memory, and information processing, potentially leading to reduced effectiveness in cognitive tasks (Eysenck 2014). Feelings of sadness can affect our ability to concentrate and make decisions, while anger can result in impulsive re-

actions and difficulties in problem-solving (Nezu and Nezu 2021). In the context of teaching, negative emotions can have a significant impact on students and their ability to learn. Anxiety, fear, boredom, and frustration are some of the negative emotions that can arise during the learning process. These emotions can impede concentration, memory, and comprehension of lesson content (Pekrun 2006). When students are burdened by negative emotions, they may experience a lack of interest in learning and face difficulties in confronting challenges (Jiang et al. 2016).

A study conducted in Finland among 53 high school students showed that negative emotions are a factor linked to lower academic achievement and poorer emotional well-being in students (Jiang et al. 2016). Teachers have an important role in recognizing and managing students' negative emotions. Providing support, understanding, and empathy from teachers can help students overcome negative emotions and create a positive emotional environment for learning (Wink et al. 2021). In research conducted on 273 elementary school students in Long Island, New York, it was proven that programs incorporating the development of emotional skills in students had a positive impact on emotional well-being, self-regulation, and academic success (Brackett et al. 2012). It is important to emphasize that negative emotions can be experienced individually, and their intensity and impact can vary among students. Additionally, contextual factors such as culture, social support, and emotional intelligence can also influence our experience and expression of negative emotions (Brackett et al. 2012). Managing negative emotions in teaching and creating an emotionally stimulating environment are crucial aspects in improving student well-being and teaching effectiveness. Teachers can implement strategies that encourage emotional regulation, supporting students in expressing and processing their negative emotions, and creating a safe and encouraging learning environment (Jiang et al. 2016). Including collaboration, peer support, and teamwork can create an atmosphere of support and acceptance where students feel that their emotions are important and accepted (Dyson et al. 2021). This research is particularly significant because it addresses the role of emotions in subject-specific instruction for students, an area with insufficient prior research. It focuses on distinguishing between positive and negative emotions and examines how these emotions manifest in subject-specific instruction. Ultimately, it provides a deeper understanding of students' emotional experiences in the school environment, with an emphasis on gender and age differences, which can help shape more effective pedagogical approaches.

2. METHODOLOGY

The purpose of this research is to gain a deeper understanding of the emotional experiences of students in the school environment, with an emphasis on how positive and negative emotions manifest during subject-based instruction. The analysis of the collected data included the application of descriptive statistics methods to show the level of dimensions of positive and negative emotions in class. Non-parametric statistical tests (Mann-Whitney U test and Kruskal-Wallis test) were selected due to the nature of the data distribution¹. A preliminary analysis of the distribution of results on measures of positive and negative emotions, conducted using the Kolmogorov-Smirnov test, indicated that the data in our sample do not meet the assumptions of normal distribution ($D(257) = 0.14, p < 0.01$). To examine the differences in positive and negative emotions in class with respect to gender, the Mann-Whitney U test was used. Differences in positive and negative emotions in class with respect to grade were examined using the Kruskal-Wallis test. All statistical analyses were performed using the SPSS 29 software package.

2.1. Goal and hypotheses

The goal of this research is to examine and analyse gender and age differences in the experience of positive and negative emotions in subject-based instruction. In accordance with the set goal, the following null hypotheses were formulated:

- H1: There is no statistically significant difference between girls and boys in the experience of positive and negative emotions in subject-based instruction.
- H2: There is no statistically significant difference between 5th, 6th, 7th, and 8th-grade students in the experience of positive and negative emotions in subject-based instruction.

2.2. Sample

The research was conducted on a convenience sample ($N = 257$) of students from two primary schools located in the area of Split-Dalmatia County, Republic of Croatia. The sample includes students from the 5th, 6th, 7th, and 8th grades. The gender distribution within the sample is as follows: female students constitute 61.5% of the sample ($n = 158$), while male students constitute 38.5% ($n = 99$). The average age of the students is 12.1 years. The largest proportion of respondents are 8th-grade students

($n = 79$ students, 30.74%), followed by 5th-grade students ($n = 72$ students, 28.02%), 6th-grade students ($n = 65$ students, 25.29%), and 7th-grade students with the smallest number of respondents ($n = 41$ student, 15.95%). It is important to note that due to the use of a convenience sample and the limitation of the research to only two schools in one county, the sample's representativeness is limited. Therefore, the results of this research cannot be statistically generalized to the entire population of students in 5-8th grades in the Republic of Croatia. Nevertheless, the findings provide valuable insight into the emotional experiences of students in the context of the transition to subject-based instruction, which can serve as a relevant starting point for future, broader studies.

2.3. Data collection method

Before the start of the research, consent was obtained from the principals of the schools involved. Parents were informed about the purpose and methodology of the research through professional associates and class teachers. It was emphasized that student participation was voluntary and anonymous. Data were collected using the paper-and-pencil method within the classrooms, during March and April 2025. Before filling out the questionnaire, students were given detailed instructions, with renewed emphasis on the voluntariness of participation and the right to withdraw at any time without any consequences.

2.4. Measurement instruments

For the purposes of this research, the following measurement instruments were used:

General Data Questionnaire: This short questionnaire consists of three items that collect demographic data about the participants (gender, age/grade) and their expectations related to their success in technical culture at the end of the school year (APPENDIX 1).

Scale of Positive and Negative Experience (SPANE; Diener et al. 2009): The instrument consists of 12 items divided into two subscales: six items assess positive emotions, and the remaining six assess negative emotions. Within each subscale, three items are general (e.g., "Positive," "Negative"), while three are specific (e.g., "Joyful," "Sad"). Respondents rated the frequency of their experiences over the past four weeks on a five-point Likert scale (1 – very rarely or never; 5 – very often or always). Although the theoretical framework of this paper focuses on emotions, the SPANE

instrument measures the frequency of pleasant and unpleasant feelings, that is, consciously experienced affective states. Therefore, in this study, the construct of 'emotions' is interpreted operationally through subjectively experienced affective pleasantness and unpleasantness. The original concept of the questionnaire, translated into Croatian, was used in this study. It must be explicitly stated that the SPANE instrument has not been validated on the Croatian population. However, internal consistency was checked, and the coefficient of internal consistency (Cronbach's alpha) for all mentioned scales indicates satisfactory reliability of the measurement instruments in this research. The total score on each scale was formed as the average of the ratings of all the statements that make up that scale.

School Life Quality Questionnaire (Raboteg-Šarić et al. 2009): For the purposes of this research, three subscales were taken from this questionnaire:

- School achievement: Consists of 4 statements ($\alpha=0.80$) that examine the student's experience of school competence, a sense of achievement, and success in school work.
- Teachers: Consists of 5 statements ($\alpha=0.87$) that assess the perception of the quality of the teacher-student relationship and the student's satisfaction with that relationship.
- Experience of learning: Consists of 4 statements ($\alpha=0.80$) that examine the extent to which students enjoy learning itself, and whether they perceive learning as challenging and fun.

The coefficients of internal consistency (Cronbach's α) for all the mentioned scales indicate satisfactory reliability of the measurement instruments.

3. RESULTS

Based on the data presented, students reported the lowest levels of joy ($M=3.11$) among the positive emotions listed, while they most feel "good" ($M=3.48$) and "positive" ($M=3.47$). Regarding negative emotions, students least feel sad ($M=1.71$) and scared ($M=1.72$), and most feel "negative" ($M=2.06$) (Table 1).

Table 1. Descriptive indicators of positive and negative emotions of elementary school students in 5-8th grades

Positive emotions	N	min	max	M	SD
Positive	257	1	5	3.47	1.29
Good	257	1	5	3.48	1.20
Pleasant	257	1	5	3.28	1.29
Joyful	257	1	5	3.11	1.37
Satisfied	257	1	5	3.30	1.30
Negative emotions	N	min	max	M	SD
Negative	257	1	5	2.06	1.18
Bad	257	1	5	1.92	1.08
Unpleasant	257	1	5	1.77	1.08
Sad	257	1	5	1.71	1.17
Scared	257	1	5	1.72	1.20
Angry	257	1	5	1.96	1.10

These descriptive indicators suggest that positive emotions are more pronounced than negative ones, implying predominantly positive emotional experiences of students at school. However, the relatively low level of joyful ($M=3.11$) indicates potential room for the implementation of strategies that could increase intrinsic motivation and enjoyment in learning, in accordance with theoretical insights (Kahu et al. 2017).

To examine how satisfied students are with the quality of school life, descriptive statistics were used to obtain indicators of the quality of teacher-student relationships, students' perception of school competence, and their general experience of classes. Students perceive that teachers act fairly towards them ($M=3.59$). The lowest average rating refers to the statement that teachers help them do their best ($M=3.12$) (Table 2).

Table 2. Descriptive indicators of the quality of the teacher's relationship with students

Quality of teacher-student relationship	N	MIN	MAX	M	SD
The teacher treats me fairly.	257	1	5	3.59	1.41
The teacher is interested in helping me complete my tasks.	257	1	5	3.21	1.39
The teacher encourages me to work.	257	1	5	3.28	1.49
The teacher helps me to do my best.	257	1	5	3.12	1.48
The teacher is interested in what I'm saying.	257	1	5	3.14	1.49

From Table 3, which relates to students' competence, students almost equally believe they are successful at solving school assignments (M=3.95) and homework (M=3.88) and that they achieve good results (M=3.93).

Table 3. Descriptive indicators of students' experiences of school competence

Perceived school competence	N	MIN	MAX	M	SD
I am a successful student in completing homework assignments.	257	1	5	3.88	1.24
I am a successful student in completing school assignments.	257	1	5	3.95	1.18
I achieve good results.	257	1	5	3.93	1.11

It was found that students least enjoy solving additional tasks (M=2.35). They equally believe that learning is fun (M=2.88), that they are excited when they do something new in class (M=2.88), and that they enjoy what they do in class (M=2.83) (Table 4).

Table 4. Descriptive indicators of students' experiences of lessons

Perceived lessons	N	MIN	MAX	M	SD
Learning is fun.	257	1	5	2.88	1.41
I like to solve extra tasks.	257	1	5	2.35	1.40
I get excited when we do something new.	257	1	5	2.88	1.46
I enjoy what we do in class.	257	1	5	2.83	1.44

To examine the difference between girls and boys in their experience of positive and negative emotions in class, the Mann-Whitney U test was used. The examination found no statistically significant difference in positive emotions between boys and girls ($p>0.050$) (Table 5).

Table 5. Results of the Mann-Whitney U test with regard to experiencing positive emotions of elementary school students in 5-8th grades

Positive emotions	Female (n=158)		Male (n=99)		U	Z	p
	Total rank	Average rank	Total rank	Average rank			
Positive	20482.50	129.64	12670.50	127.98	7720.50	-0.18	0.858
Good	21017.00	133.02	12136.00	122.59	7186.00	-1.13	0.259
Pleasant	20590.00	130.32	12563.00	126.90	7613.00	-0.36	0.713
Joyful	20238.00	128.09	12915.00	130.45	7677.00	-0.25	0.800
Satisfied	20520.00	129.87	12633.00	127.61	7683.00	-0.24	0.807

A statistically significant higher level of sad emotions was found in girls compared to boys ($p < 0.050$). No statistically significant difference was found between girls and boys in other negative emotions ($p > 0.050$) (Table 6).

Table 6. Results of the Mann-Whitney U test with regard to experiencing negative emotions of elementary school students in 5-8th grades

Negative emotions	Female (n=158)		Male (n=99)		U	Z	p
	Total rank	Average rank	Total rank	Average rank			
Negative	20404.00	129.14	12749.00	128.78	7799.00	-0.040	0.968
Bad	20180.50	127.72	12972.50	131.04	7619.50	-0.372	0.710
Unpleasant	20261.00	128.23	12892.00	130.22	7700.00	-0.231	0.817
Sad	21561.00	136.46	11592.00	117.09	6642.00	-2.333	0.020
Scared	20531.50	129.83	12639.50	127.67	7689.00	-0.269	0.788
Angry	19808.50	125.37	13344.50	134.79	7247.00	-1.067	0.286

The lack of statistically significant gender differences in positive emotions suggests that pleasant emotional experiences are equally present in both genders. However, the statistically significant higher level of sadness among female students partially confirms the findings of other studies on gender differences in emotional expression (Gross and John 2003). This specific difference requires further research and targeted interventions, given that sadness can negatively affect concentration (Nezu and Nezu 2021).

Null hypothesis H1 (There is no statistically significant difference between girls and boys in the experience of positive and negative emotions) is partially rejected. Although no differences were found in positive emotions and most negative emotions, the Mann-Whitney U test established a statistically significant higher level of sadness among female students compared to male students.

To examine the difference in the experience of positive and negative emotions in Technical Culture classes among 5th, 6th, 7th, and 8th graders, the Kruskal-Wallis test was used. Positive emotions show a statistically significant higher level of positive, pleasant, joyful, and satisfied emotions among 5th-grade students ($p < 0.050$). No statistically significant difference was found for the emotion “good” ($p > 0.050$) or for other grades (Table 7).

Table 7. Results of the Kruskal-Wallis test of differences in positive emotions of elementary school students in 5-8th grades

Positive emotions	5th grade		6th grade		7th grade		8th grade		H	Df	p
	N	Aver. rank	N	Aver. rank	N	Aver. rank	N	Aver. rank			
Positive	72	154.96	65	124.26	41	126.41	79	110.58	14.551	3	0.002
Good	72	144.83	65	124.75	41	137.41	79	113.70	7.766	3	0.051
Pleasant	72	152.27	65	126.14	41	118.68	79	115.50	11.040	3	0.012
Joyful	72	151.24	65	127.01	41	119.52	79	115.28	10.292	3	0.016
Satisfied	72	159.35	65	125.20	41	113.33	79	112.60	18.618	3	<0.001

To determine more precisely between which grades statistically significant differences in the experience of positive emotions exist, a post-hoc analysis was conducted using Dunn's test with a Bonferroni correction (Table 8)

Table 8. Results of the Dunn's test with a Bonferroni correction

Positive emotions	Pairwise Comparison	Difference in Mean Ranks	p
Satisfied (H=18.618)	5th vs. 8th	46.75	$p < 0.001$
	5th vs. 7th	46.02	$p < 0.01$
	5th vs. 6th	34.15	$p < 0.05$
Positive (H=14.551)	5th vs. 8th	44.38	$p < 0.01$
	5th vs. 6th	30.7	$p > 0.05$
Pleasant (H=11.040)	5th vs. 8th	36.77	$p < 0.05$
	5th vs. 7th	33.59	$p > 0.05$
Joyful (H=10.292)	5th vs. 8th	35.96	$p < 0.05$
	5th vs. 7th	31.72	$p > 0.05$

The results indicate that 5th-grade students consistently report higher levels of positive emotions compared to older students, with this difference being most pronounced in relation to 8th-grade students. Specifically, for the emotion "Satisfied", 5th-grade students show statistically significant higher ranks than all older groups. The difference is strongest compared to the 8th grade (Diff = 46.75, $p < 0.001$) and the 7th grade (Diff = 46.02, $p < 0.01$), while compared to the 6th grade, the difference is also present but at a lower level of significance (Diff = 34.15, $p < 0.05$). This suggests that the sense of satisfaction significant declines as early as after the fifth grade. Regarding other positive emotions ("Positive", "Pleasant", "Joyful"), significant differences were established primarily between the youngest (5th grade) and the oldest (8th grade) students. For the variable "Positive" the difference between the 5th and

8th grades is highly significant ($p < 0.01$), whereas the difference between the 5th and 6th grades did not reach statistical significance. A similar pattern is observed for the emotions “Pleasant” and “Joyful”, where 5th-grade students are significantly more positive than 8th-grade students ($p < 0.05$), while differences compared to the 7th grade for these variables were not statistically significant. These findings confirm a trend of declining intensity of positive emotions throughout schooling, with the 8th grade being the most at-risk group, demonstrating the lowest levels of positive affect compared to younger students.

Regarding negative emotions, the Kruskal-Wallis test revealed a statistically significant difference specifically for the variable “Unpleasant” ($H = 8.589$, $p = 0.035$) (Table 9). No statistically significant differences were found for other negative emotions ($p > 0.050$). Consequently, the null hypothesis H_2 is partially rejected. Inspection of the mean ranks indicates a tendency for 6th and 7th-grade students to report higher levels of negative emotions (Mean Ranks: 143.74 and 142.60, respectively) compared to 5th and 8th-grade students (Mean Ranks: 122.60 and 115.65).

Table 9. Results of the Kruskal-Wallis test of differences in negative emotions of elementary school students in 5-8th grades

Negative emotions	5th grade		6th grade		7th grade		8th grade		H	Df	p
	N	Aver. rank	N	Aver. rank	N	Aver. rank	N	Aver. rank			
Negative	72	126.96	65	129.78	41	129.02	79	130.20	0.092	3	0.993
Bad	72	121.14	65	136.02	41	133.34	79	128.13	1.759	3	0.624
Unpleasant	72	122.60	65	143.74	41	142.60	79	115.65	8.589	3	0.035
Sad	72	131.42	65	132.85	41	120.10	79	128.25	1.115	3	0.774
Scared	72	130.26	65	137.42	41	124.10	79	123.47	2.062	3	0.560
Angry	72	119.17	65	137.77	41	128.56	79	130.97	2.586	3	0.460

In order to accurately identify the differences between individual grades, Dunn’s test with a Bonferroni correction was performed.

Table 10. Results of Dunn’s test with a Bonferroni correction

Negative emotions	Pairwise Comparison	Difference in Mean Ranks	p
Unpleasant (H=8.589)	6th vs. 8th	28.09	$p < 0.05$
	7th vs. 8th	26.95	$p > 0.05$
	6th vs. 5th	21.14	$p > 0.05$

To accurately identify the locus of these differences, a post-hoc analysis was performed using Dunn’s test with a Bonferroni correction (Table 10). The analysis confirmed a statistically significant difference between 6th and 8th-grade students ($p < 0.05$). Although 7th-grade students also exhibited elevated mean ranks compared to the 8th grade, this difference did not reach statistical significance after correction ($p > 0.05$). These findings suggest that unpleasant emotions are significantly more pronounced during the transition to subject-based instruction, particularly in the 6th grade, compared to the end of primary education. While 7th-grade students show a similar pattern of elevated negative affect, the statistical evidence is robust primarily for the 6th grade. This susceptibility in the middle grades (6th and 7th) may be linked to the developmental challenges of early adolescence and increased curricular demands, highlighting a critical period for implementing support strategies.

4. DISCUSSION

This discussion analyses statistical data collected from research on primary school students’ emotions, focusing on positive and negative emotions, the quality of teacher-student relationships, students’ perceptions of school competence, and their experiences of classes. The aim of the research was to gain a deeper understanding of students’ emotional experiences in the educational process.

The descriptive indicators suggest that positive emotions are more pronounced than negative ones, implying that students predominantly have positive emotional experiences at school, although the level of joy is not particularly high. This finding is consistent with Fredrickson’s Broaden-and-Build Theory (2001, 2013), which emphasizes the importance of positive emotions for better learning and engagement. The low level of joy, despite the overall positivity, indicates an opportunity to implement strategies that could increase intrinsic motivation and enjoyment in learning, as suggested by Kahu et al. (2017).

The analysis of students’ perceptions of the quality of their relationships with teachers shows that students most value teacher fairness. However, the lowest average

rating is for the statement that teachers help them do their best. This points to room for improvement in providing individualized support and encouraging students to reach their full potential. Skinner and Belmont (1993), as well as Wentzel (2002), emphasize the importance of a supportive environment and teacher support for a positive emotional climate and student engagement, which aligns with these findings.

Regarding students' perceptions of school competence (Table 3), students perceive themselves as successful in completing school assignments ($M=3.95$), homework ($M=3.88$), and achieving good results ($M=3.93$). The high ratings in this area suggest that students have a high level of self-confidence in their academic abilities, which, according to Halilsoy (2024), is crucial for motivation and achievement. Raboteg-Šarić et al. (2009) also highlighted the connection between the quality of life at school and student success, motivation, and behaviour.

The results on the experience of classes (Table 4) show lower average ratings compared to other areas. Students least enjoy solving additional tasks ($M=2.35$). Interestingly, the ratings for "learning is fun" ($M=2.88$), "I get excited when we do something new" ($M=2.88$), and "I enjoy what we do in class" ($M=2.83$) are similar but relatively low. This indicates a need for more dynamic and engaging teaching approaches to increase intrinsic motivation and enjoyment in learning. Pekrun's Control-Value Theory of Achievement Emotions (2006) emphasizes how the value students place on an activity and their perceived control over it affect their emotions and learning. Using motivating and interesting activities and an interactive approach can contribute to a positive emotional environment, a notion supported by work on constructivist learning theories (Almulla 2023).

The Mann-Whitney U test (Table 5) showed no statistically significant difference in the experience of positive emotions between girls and boys ($p>0.050$). This suggests that positive emotional experiences in class are equally present in both genders. However, for negative emotions (Table 6), a statistically significant higher level of sad emotions was found in girls compared to boys ($p<0.050$), which partially confirms the findings of other studies on gender differences in emotional expression (Gross and John 2003). The finding of a statistically significant higher level of sadness among female students compared to male students is partially consistent with the results of numerous previous studies (Gross and John 2003; Chaplin and Aldao 2013) that consistently show gender differences in the experience of negative emotions. Theoretically, this finding is explained through socialization factors and gender roles. Girls are often permitted to express internalized emotions, such as sadness, whereas boys are under pressure to suppress them, with their distress more frequently manifesting

through externalizing behaviours, such as anger or aggression. Furthermore, during the developmental phase of adolescence, girls are more exposed to social pressures related to physical appearance and interpersonal relationships, which contributes to increased emotional sensitivity and vulnerability to sadness within the context of school interactions (Hyde 2005). No statistically significant difference was found in other negative emotions. This specific difference in sadness among girls requires further research and potentially targeted interventions, considering how sadness can affect concentration and decision-making (Nezu and Nezu 2021).

The Kruskal-Wallis test for positive emotions (Table 7) showed a statistically significant higher level of positive, pleasant, joyful, and satisfied emotions among 5th-grade students ($p < 0.050$) compared to older grades. This is an interesting finding that could indicate a decline in positive emotions as students' progress through primary school. No statistically significant difference was found for the emotion "good."

When it comes to negative emotions, the Kruskal-Wallis test (Table 8) revealed a statistically significant higher level of unpleasant emotions among 6th and 7th-grade students ($p < 0.050$) compared to 5th and 8th-grade students. This partially accepts the second hypothesis. This finding suggests that the sixth and seventh grades are particularly susceptible to experiencing uncomfortable emotions in class, which may be related to the developmental challenges of adolescence or the specifics of the curriculum in those grades.

This finding can be explained by the developmental challenges of early and middle adolescence. Specifically, between the ages of 12 and 14 (encompassing the 6th and 7th grades), students face intense physical, cognitive, and social changes, including identity formation, increased awareness of peer norms, and a decline in self-confidence within the academic context (Zeidner and Stoeger 2019). This complex interaction of developmental challenges and increased expectations in subject-based instruction likely contributes to elevated levels of distress, frustration, or anxiety compared to the more stable phases of the 5th and 8th grades.

Furthermore, the elevated unpleasant emotions in the 6th and 7th grades may also be associated with the specifics of the curriculum and teaching methods in these grades. Given that negative emotions, such as anxiety, interfere with attention, memory, and information processing, the experience of unpleasant emotions can directly impact classroom engagement. The research by Dekeyser et al. (2024) is relevant for understanding these grade-level differences, as it explores negative affect and potentially ineffective responses to these feelings. These findings highlight that the 6th and 7th grades represent a crucial point for intervention, where emotional regulation

strategies and the promotion of empathy by teachers (Wink et al. 2021) should be re-inforced to create a safe and supportive environment. No statistically significant difference was found in other negative emotions.

These findings have important implications for pedagogical practice. It is necessary to develop strategies to foster joy and engagement in class, especially in older grades, by applying knowledge about the role of positive emotions in learning (Li et al. 2020). Recognizing that girls experience more sadness and that 6th and 7th graders are more susceptible to unpleasant emotions can lead to the development of targeted interventions and emotional regulation programs, as discussed by Gross (2014) and Brackett et al. (2012). Teacher empathy (Wink et al. 2021) and cooperative learning (Dyson et al. 2021) can significantly contribute to creating a supportive environment.

5. RESEARCH LIMITATIONS

The limitations of this research must be considered when interpreting the results. Primary limitations arise from the use of a convenience sample drawn from only two schools; consequently, the findings cannot be statistically generalized to the entire population of upper primary school students (grades 5–8) in the Republic of Croatia. Furthermore, data were collected exclusively using self-report methods (via questionnaires), which introduces the potential for reporting bias regarding emotional experiences. Additionally, despite reliability checks, the lack of full validation of the SPANE instrument on a Croatian sample presents a methodological limitation. Due to the application of non-parametric tests used to analyse differences (Mann-Whitney U and Kruskal-Wallis), this study cannot establish causal relationships between age/gender and emotional experience. Future studies should utilize a larger, more representative sample and employ more complex statistical methods, such as regression analysis, to better examine predictors and causal links between variables.

6. CONCLUSION

This research provides insight into the emotional experiences of elementary school students. Although positive emotions are generally more pronounced, the relatively low level of joy points to a need for strategies that would increase intrinsic motivation and enjoyment in learning. Students value teacher fairness but notice a lack of individualized support in achieving their full potential. While they perceive themselves as competent in school assignments, the general experience of classes, especially

solving additional tasks, shows a lower level of engagement and enjoyment, highlighting the need for more dynamic approaches.

It is important to note that a statistically significant higher level of sad emotions was found in girls compared to boys, which requires further research and targeted interventions. The analysis by grade revealed that 5th-grade students report a higher level of positive emotions, while 6th and 7th graders are more susceptible to unpleasant emotions. These findings have important implications for pedagogical practice, emphasizing the need to adapt teaching strategies, methods, and approaches to increase student satisfaction and improve their academic results. Given that the topic of students' emotional experiences in subject-based teaching is under-researched, this study can serve as a valuable starting point for future studies that will focus on a deeper understanding and improvement of emotional well-being in the educational system. Given that higher levels of unpleasant emotions were recorded in 6th and 7th-grade students, it is crucial to focus on creating a safe and supportive school environment. The identification and prevention of school-related fear and anxiety are imperative (Dautbegović 2025).

Teachers should actively work on reducing competitive pressure in instruction and assessment, with an emphasis on formative assessment that reduces the fear of failure. Furthermore, they should develop an individualized approach that strengthens student self-confidence (Zeidner and Stoeger 2019), particularly for those struggling with internalized emotions such as sadness. Finally, they should implement strategies of empathy and open communication to ensure students feel their emotions are valid and accepted.

BIBLIOGRAPHY

1. Almulla, Mohammed Abdullatif (2023), "Constructivism Learning Theory: A Paradigm for Students' Critical Thinking, Creativity, and Problem Solving to Affect Academic Performance in Higher Education", *Cogent Education*, 10(1), 1-25.
2. Anwar, Yasmin (2023), "Emoji fans take heart: Scientist spin point 27 states of emotion", UC Berkeley News; <https://news.berkeley.edu/2017/09/06/27-emotions/>
3. Aspinwall, Lisa G. (1998), "Rethinking the role of positive affect in self-regulation", *Motivation and emotion*, 22(1), 1-32.

4. Barrett, Lisa Feldman, Kristen A. Lindquist, Eliza Bliss-Moreau, Seth Duncan, Maria Gendron, Jennifer Mize, Lauren Brennan (2007), "Of mice and men: Natural kinds of emotions in the mammalian brain? A response to Panksepp and Izard", *Perspectives on psychological science*, 2(3), 297-312.
5. Biswas-Diener, Robert, Ed Diener (2006), "The subjective well-being of the homeless, and lessons for happiness", *Social indicators research*, 76(2), 185-205.
6. Bognar, Ladislav, Snježana Dubovicki (2012), "Emocije u nastavi", *Croatian Journal of Education / Hrvatski časopis za odgoj i obrazovanje*, 14(1), 135-153.
7. Brackett, Mark A., Susan E. Rivers, Maria R. Reyes, Peter Salovey (2012), "Enhancing academic performance and social and emotional competence with the RULER feeling words curriculum", *Learning and Individual Differences*, 22(2), 218-224.
8. Cherry, Kendra (2021), "The 6 Types of Basic Emotions", Verrywell Mind, 1-11; <https://www.verywellmind.com/an-overview-of-the-types-of-emotions-4163976>
9. Damasio, Antonio R. (1999), *The Feeling of What Happens: Body and Emotion in the Making of Consciousness*, Harcourt Bracefort and Co.
10. Dautbegović, Amela (2025), *Škola bez straha: Psihološki izazovi učenika: uzroci i posljedice neprijatnih emocionalnih stanja*, Univerzitet u Sarajevu – Filozofski fakultet, Sarajevo
11. Dekeyser, Thomas, Vickie Zhang, David Bissell (2024), "Whatshouldwe do withbadfeelings? Negative affects, impotential responses", *Progress in Human Geography*, 48(2), 190-205.
12. Diener, Ed, Derrick Wirtz, William Tov, Chu Kim-Prieto, Dong-won Choi, Shigehiro Oishi, Robert Biswas-Diener (2010), "New measures of well-being: Flourishing and positive and negative feelings", *Social Indicators Research*, 39, 247-266.
13. Durlak, Joseph A., Roger P. Weissberg, Allison B. Dymnicki, Rebecca D. Taylor, Kriston B. Schellinger (2011), "The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions", *Child Development*, 82(1), 405–432.
14. Dyson, Ben, Donal Howley, Yanhua Shen (2021), "Being a team, working together, and being kind': Primary students' perspectives of cooperative learning's contribution to their social and emotional learning", *Physical*

- Education and Sport Pedagogy*, 26(2), 137–154.
15. Eysenck, Michael W. (2014), "Anxiety and cognitive performance", in: Changiz Mohiyeddini, Michael W. Eysenck, Stephanie Bauer (eds.), *Handbook of Psychology of Emotions: Recent Theoretical Perspectives and Novel Empirical Findings*, Nova Science Publishers, New York, 115–130
 16. Fredrickson, Barbara L. (2001), "The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions", *American Psychologist*, 56 (3), 218-226.
 17. Fredrickson, Barbara L. (2013), "Positive emotions broaden and build", *Advances in Experimental Social Psychology*, 47, 1-53.
 18. Gross, James J. (2014), "Emotion regulation: Conceptual and empirical foundations", *Handbook of Emotion Regulation*, 2(1), 3–20.
 19. Gross, James J., Oliver P. John (2003), "Individual differences in two emotion regulation processes: implications for affect, relationships, and well-being", *Journal of Personality and Social Psychology*, 85(2), 348-362.
 20. Halilsoy, Türkan (2024), "The Importance of Self-Confidence", *Akademik Tarih ve Düşünce Dergisi*, 11(5), 2975–2989.
 21. Hwang, Hyisung, David Matsumoto (2019), "Functions of emotions", *Noba Textbook Series: Psychology*, 44(6), 849–873.
 22. Jiang, Jingwen, Marja Vauras, Simone Volet, Yuan Wang (2016), "Teachers' emotions and emotion regulation strategies: Self-and students' perceptions", *Teaching and Teacher Education*, 54, 22–31.
 23. Kahu, Ella, Karen Nelson, Catherine Picton (2017), "Student interest as a key driver of engagement for first year students", *Student Success*, 8(2), 55–66.
 24. Li, Lu, Andrew Douglas Isherwood Gow, Jiaxian Zhou (2020), "The role of positive emotions in education: A neuroscience perspective", *Mind, Brain, and Education*, 14(3), 220–234.
 25. Nezu, Arthur M., Christine Maguth Nezu (2021), "Emotion-Centered Problem-Solving Therapy", u: A. Wenzel (ed.), *Handbook of cognitive behavioural therapy: Overview and approaches*, American Psychological Association, 465-491.
 26. Oatley, Keith, Jennifer M. Jenkins (1992), "Human emotions: Function and dysfunction", *Annual Review of Psychology*, 43(1), 55–85.
 27. Ortony, Andrew, Terrence J. Turner (1990), "What's basic about basic emotions?", *Psychological Review*, 97(3), 315-331.

28. Pekrun, Reinhard (2006), "The control-value theory of achievement emotions: Assumptions, corollaries, and implications for educational research and practice", *Educational Psychology Review*, 18(4), 315–341.
29. Putwain, David W., Kevin A. Woods, Wendy Symes (2010), "Personal and situational predictors of test anxiety of students in post-compulsory education", *British Journal of Educational Psychology*, 80(1), 137–160.
30. Raboteg-Šarić, Zora, Marija Šakić, Andreja Brajša-Žganec (2009), "Kvaliteta života u osnovnoj školi: povezanost sa školskim uspjehom, motivacijom i ponašanjem učenika", *Društvena istraživanja: časopis za opća društvena pitanja*, 18(4-5 (102-103)), 697–716.
31. Scarantino, Andrea (2015), "Basic emotions, psychological construction, and the problem of variability", In: Lisa Feldman Barrett, James A. Russell (Eds.), *The Psychological Construction of Emotion*, The Guilford Press, 334–376.
32. Skinner, Ellen A., Michael J. Belmont (1993), "Motivation in the classroom: Reciprocal effects of teacher behaviour and student engagement across the school year", *Journal of Educational Psychology*, 85(4), 571–581.
33. Ullsperger, Markus, Claudia Danielmeier, Gerhard Jocham (2014), "Neurophysiology of performance monitoring and adaptive behaviour", *Physiological Reviews*, 94(1), 35–79.
34. Wentzel, Kathryn R. (2002), "Are effective teachers like good parents? Teaching styles and student adjustment in early adolescence", *Child Development*, 73(1), 287–301.
35. Wink, Mackenzie N., Maria D. LaRusso, Rhiannon L. Smith (2021), "Teacher empathy and students with problem behaviours: Examining teachers' perceptions, responses, relationships, and burnout", *Psychology in the Schools*, 58(8), 1575–1596.
36. Zeidner, Moshe, Heidrun Stoeger (2019), "Self-Regulated Learning (SRL): A guide for the perplexed", *High Ability Studies*, 30(1-2), 9–51.

ISKUSTVO POZITIVNIH I NEGATIVNIH EMOCIJA TIJEKOM OBRAZOVNOG PROCESA KOD UČENIKA OD 5. DO 8. RAZREDA

Sažetak:

Cilj ovog istraživanja bio je ispitati rodne i dobne razlike u doživljavanju pozitivnih i negativnih emocija tijekom odgojno-obrazovnog procesa kod učenika od 5. do 8. razreda. Istraživanje je provedeno među učenicima dviju osnovnih škola u Republici Hrvatskoj, pri čemu su uzorak činile $n=158$ učenica i $n=99$ učenika (prosječna dob = 12,1). Korišteni mjerni instrumenti uključivali su Upitnik općih podataka, Skalu pozitivnog i negativnog iskustva te Upitnik kvalitete života u školi. Analiza rodni razlika Mann-Whitney U testom otkrila je statistički značajno višu razinu tuge kod učenica u usporedbi s učenicima. Nisu pronađene statistički značajne razlike između spolova u pogledu pozitivnih emocija. Kruskal-Wallis test pokazao je statistički značajno višu razinu pozitivnih, ugodnih, radosnih i zadovoljnih emocija kod mlađih učenika 5. razreda u odnosu na starije učenike. Također je zabilježena statistički značajno viša razina neugode kod učenika šestih razreda u usporedbi s učenicima osmih razreda. Dobiveni nalazi potvrđuju da su, unutar općeg školskog iskustva u višim razredima osnovne škole, djevojčice i učenici šestih razreda podložniji negativnim emocionalnim stanjima, što ukazuje na potrebu za ciljanim strategijama podrške emocionalnoj dobrobiti upravo tih skupina. Praktične implikacije uključuju razvoj ciljanih intervencija, poput programa emocionalne regulacije, posebno za djevojčice i starije učenike, te potrebu za dinamičnijim i zanimljivijim nastavnim pristupima za povećanje radosti i angažmana.

Cljučne riječi: emocije; učenici od 5. do 8. razreda; rodne razlike; dobne razlike; pozitivne emocije; negativne emocije

Author's address

Adresa autorice

Anna Alajbeg
University of Split
Faculty of Science
aalajbeg@pmfst.hr

