

Basic Emotions and Colours as Perceived by Fourth Grade Pupils

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Abstract

We face colours in thousands of shades every day, but we sometimes easily ignore them. If we really want to understand the relationship between “humans and colours”, we must remember that colours have got physical characteristics as well as strong physiological and psychological impact on us. In the present study the investigation was focused on the relationship between basic emotions and colours as perceived by fourth grade pupils, their favourite and unpopular colours, and the emotional stability of pupils with respect to self-esteem and expectations for the future, in terms of colours. We were interested in the existence of differences according to gender, the average annual grades and the relationship between the expression of emotions with colours and emotional stability in terms of colours. We found that most pupils associated positive emotions with warm colours and negative emotions with the cool ones. Among the favourite colour is purple, the most popular for girls, and blue was found to be the most popular for boys. Black is the colour that the pupils did not like. We also found that most pupils think about self-esteem, and their expectations for the future create significant stress for them.

Key words: *emotional stability; expectations for the future; feelings; self-esteem; warm and cool colours.*

Introduction

Colours may influence our body and cause different moods and emotional states, which can be seen outwardly. The way people work and live in different colour settings may differ considerably, as long as we believe in, and are aware of the impact of colours on our life. Even as children, we used colours at home, as well as at school. According to experts, the use of different colours reveals a child's emotional life. Bognar and Dubovički (2012) wrote about emotions in education and stated that students are

faced with both favourable and unfavourable emotions. Although the teachers are trying to create a positive atmosphere in the classroom, the unfavourable feelings cannot be avoided (Bognar & Dubovički, 2012). Based on the students' colour choices we can draw parallels with the perception of both types of emotions. It is important to emphasize that the expression of colours with children changes and upgrades through their development, and their attitude towards colours changes as well.

Each colour can elicit a specific emotional mood. Some colours soothe our thoughts; others can encourage or create fear and anxiety. It should be noted that feelings cannot be generalized to certain colours, because our experiences are completely subjective. On the other hand, these subjective experiences correspond with the scientific explanation of the psychological effects of colour (Trstenjak, 1996). Different people like different colours. We choose and use them by our own will and according to our feelings. We also buy products we like, furnish living and working spaces with them and we pay attention to colours in our choice of clothing. In examining the colour stereotypes, we can see that from early on children show a clear distinction in their interests depending on their gender. It all starts with toys. We can notice bigger interest in dolls and kitchen gadgets among girls, and in vehicles and weapons among boys. Jadvá, Hines and Golombok (2010) indicate that the results of research studies by a number of authors also support this view. Various theories (cognitive, social and hormonal) explain these differences and see the reasons for them in different areas (socialization, social environment, stereotypes, hormonal differences, etc.). Also, a number of authors (O'Brien & Huston, 1985; Roopnarine, 1986; Picariello et al., 1990, as cited in Marjanovič Umek & Zupančič, 2009) came to similar conclusions in their research studies.

Emotions and Colours

When comparing different theoretical approaches (physiological, neurological, functional, cognitive and social theory), we can see that there are many differences, but we may also conclude that emotions are a complex process which involves varied responses (cognitive, behavioural, expressive and physiological) that follow a specific sequence (Smrtnik Vitulić, 2004). Emotions can be divided into two groups: basic (simple) and complex (composite) emotions. Simple emotions appear already in infants and are non-compound (Musek & Pečjak, 1997). They are also universal, because they appear in all cultures. Their most important role is to prepare our organism for dealing with the basic survival issues (Kompore et al., 2001). Plutchik (1955; 1980 as cited in Musek & Pečjak, 1997) has listed the following eight basic emotions: joy, sadness, anger, fear, acceptance, rejection (disgust), expectation, surprise. In comparison to the basic emotions, the complex emotions evolve after the second year of age and are formed by mixing together simple emotions. Originally, they are not vitally important, but are social emotions and hence play an important role in the coexistence with others (Smrtnik Vitulić, 2004), and are mainly dependent

on the social and cultural influences. Plutchik (1980 as cited in Musek & Pečjak, 1997) distinguishes between positive (joy, acceptance, expectation, surprise) and negative (sadness, anger, fear, rejection) basic emotions, which are, according to him, the foundation of certain personality traits. On the other hand, Dubovički and Bogнар (2012) do not talk about positive and negative emotions, they prefer the terms favourable and unfavourable or difficult emotions.

Emotions are being expressed from infancy throughout our development, and in the process, experience and expression become increasingly evolved and enriched. In the case of a normal emotional development, an emotionally mature person develops, that is there is emotional maturity (Musek & Pečjak, 2001) which includes compliance, regulation and a variety of emotions (Kompore et al., 2001). Because of the population of pupils in our research, we were focused on late childhood. During this period of development, children experience and express the same emotions as in the previous periods: joy, anger, affection, anxiety, fear, curiosity, jealousy, etc. Emotional development which takes place in this period allows all children a better awareness, understanding and interpretation of their own emotions, but not entirely, because their influence is not only on the conscious level (Smrtnik Vitulić, 2003, as cited in Marjanovič Umek & Zupančič, 2009). Individual emotions are identified on the basis of the external, visible signs and understanding of the psychological differences between individuals, which are not outwardly apparent (Duh & Kolar, 2012). Through the daily process of learning, pupils are confronted with both favourable and unfavourable emotions. Unfavourable emotions most often occur in conflict situations; therefore, it is even more important that we learn to control them already as children. We must also learn how to resolve these conflict situations without using violence. It is important to show our feelings in an appropriate manner and not try to hide them, because they will become apparent in a more severe form in the first conflict situation (Bognar et al., 2004, as cited in Dubovički & Bogнар, 2012).

Many experts (Frieling, 1968; Boyatzis & Varghese, 1993; Kovačev, 1997; Huang, 2008) have carried out research studies in this field. Boyatzis and Varghese (1993), and Huang (2008) conducted studies which evaluated the associations between colours and various emotional states among children aged 4 to 7 years. Certain parallels can be drawn between these studies as the results of both showed that children's choices for positive emotions were more frequently bright, warm colours (those which they also like better) and for negative emotions, they mostly chose cool and dark ones (the ones they do not like). Red was found in both cases, which, given its meaning, is quite understandable. The authors also stressed the importance of the children's experiences in associating the colours with individual emotions. In a previous research study (Duh & Kolar, 2011) it was also found that pupils associated positive emotions with both warm and cool colours. The colours that were found to be most prominent were yellow, red, blue, purple and green. The reasons for such choices were different (Duh & Kolar, 2012). Negative emotions were predominantly connected with black,

but also with cool colours (blue, violet) as well as white in greater proportion. Pink and blue were the colours liked the most by both boys and girls (Duh & Kolar, 2012).

(Learning) Self-Esteem and Learning Achievement

The definition of self-esteem is quite complex, therefore a summary of the definition will be attempted here. Self-esteem may be defined as the whole of a person's representations, views, features, attributes, opinions, values, beliefs, etc. that one may perceive within oneself. It is a combination of the conscious and the unconscious. In addition, it is one of the main parts of a personality, which is gradually formed from early childhood, and changes and develops our entire life (Kobal, 2000).

The relationship between school success, i.e. good marks, and self-esteem is also complex. According to Horvat and Magajna (1989), both of these affect one another. When starting school, a child already possesses some self-esteem, which was developed on the basis of former experiences, that is, a child's self-esteem at the beginning of formal education can be good (positive) or bad (negative). Furthermore, it may worsen if the child gets lower marks, if he/she perceives negative attitudes of teachers, fellow pupils and even parents (Horvat & Magajna, 1989). Tomori (2002) talks about school inefficiency and maintains that school performance strongly undermines individuals' holistic personal development (Duh & Kolar, 2012).

Jurišević (1999a) summarized the results of the studies which examined the relationship between self-esteem and learning achievement. The author found the connection between both constructs, but the correlation between them was low to moderate. She also identified self-esteem as one of the important factors of learning achievement (as an example, she provided a model, adapted from James et al., 1991), but warned that it is important to realize that it is neither the only nor the most important factor. The author (1999a; 1999b) also used the term learning self-esteem and indicated that there is a perception of our own teaching competence. This encompasses individual components representing a pupil's knowledge about him/herself in individual learning fields (including the descriptive component and the component of value), which they form themselves (Duh & Kolar, 2012). Schunk (1990) believes that learning performance significantly affects the pupils' self-esteem. This is reflected in two ways: directly and indirectly through social comparisons of children with their classmates (Pečjak & Košir, 2002).

Methods

The present study investigated the associations between emotions and colours among fourth grade pupils, their popular and unpopular colours and emotional stability, in terms of self-esteem and expectations for the future, expressed in colours. We were interested in the existence of differences according to gender, the average annual grades and the relationship between the expression of emotions with colours, as well as emotional stability in terms of colours.

Hypotheses

The hypotheses were formulated according to the expression of emotions and regarding the popularity of each colour.

Hypotheses Related to the Expression of Emotions (H1):

H1.1: We expect differences in the expression of positive emotions with colours according to gender; girls will choose warm colours more often than boys.

H1.2: We expect differences in the expression of positive emotions with colours according to the average annual grades; pupils with higher average annual grades will choose warm colours more often than those with a lower average.

H1.3: We do not expect differences in the expression of negative emotions with colours according to gender; both boys and girls will choose cool colours and black or white (neutral colours).

H1.4: We do not expect differences in the expression of negative emotions with colours according to the average annual grades; both girls and boys with high and low average will choose cool colours and black or white (neutral colours).

Hypotheses Related to the Popularity of Colours (H2):

H2.1: We expect differences in the choice of favourite colour according to gender; the girls will choose warm colours more often than boys.

H2.2: We expect differences in the choice of favourite colour according to the average annual grades; pupils with higher average annual grades will choose warm colours more often than those with lower average.

H2.3: We expect differences in the choice of colour that pupils do not like according to gender; the girls will choose cool colours and black more often compared with boys.

H2.4: We expect differences in the choice of colour that pupils do not like according to the average annual grades; pupils with higher average will choose cool colours and black more often compared with pupils with lower average.

Research Methods and Sample

In the present research descriptive and non-experimental method of empirical pedagogical research was used as a primary research method. Sample consisted of 323 fourth grade pupils and is defined at the level of use of inferential statistics as a simple random sample from a hypothetical population.

Data Collection and Data Processing Procedures

Data were gathered during the school year 2010/2011. The test used with pupils in this research was the assumed Lüscher's test (Lüscher, 1989) and a modified "check list" (rating list), which included questions related to the colours and different emotional states (Huang, 2008). Testing was done individually and was unguided. All the pupils received a uniform unambiguous instruction and the identical instrument (Kolar, 2012).

The checklist of colours and emotions consisted of different statements, involving basic emotions and warm, cool and neutral colours which pupils had to attribute to a particular emotion and write the reason for their selection (one colour for one emotion). Pupils were asked to determine their favourite colour and the colour that they do not like. In doing so, they had a completely free choice. The checklist was to some extent summarized after Huang (2008) and organized according to Plutchik's theory of emotions which distinguishes between positive and negative emotions (Musek & Pečjak, 1997).

Lüscher's test comprises eight coloured cards (four hues of yellow related to the expectations for the future, and four hues of green for the analysis of self-esteem). Pupils were asked to sort the coloured cards on a white background from the one which they like the most to that which they like the least (from left to right). In doing so, they first classified the green coloured cards and after that the yellow ones. Following the classification, the coloured cards were turned to the back side where the numbers from one to four were written. Lüscher (1989) described in his work the importance of the individual order of coloured cards in terms of self-esteem and expectations for the future (typical characteristics). At the same time, the order of coloured cards also signals if pupils are stressed out and prone to conflict situations, which is reflected in the absence or the presence of a star (*). The absence of stars is an indication of the emotional stability (no confrontational tendencies), one star (*) indicates a tendency to conflict, while two and three stars (**, ***) reveal a conflict personality (Duh & Kolar, 2012).

Results

The Relationship between Basic Positive and Negative Emotions and Colours

Below are presented the results of the tests which were used to study the relationship between basic emotions and pupils' preferred/disliked colours.

Table 1.

Number (f) and percentage (f%) of pupils' choice of colours with different positive emotional states in relation to gender and average annual grades.

Positive feelings	Colours	Girls		Boys		Colours	Grades 1 to 4		Grade 5		
		f	f%	f	f%		f	f%	f	f%	
JOY	yellow	78	52.3	79	45.4	yellow	47	42.7	110	51.6	
	orange	16	10.7	17	9.8	orange	9	8.2	24	11.3	
	red	27	18.1	26	14.9	red	17	15.5	36	16.9	
	blue	12	8.1	26	14.9	blue	18	16.4	20	9.4	
	green	6	4.0	19	10.9	green	12	10.9	13	6.1	
	purple	9	6.0	1	0.6	purple	3	2.7	7	3.3	
	white	1	0.7	2	1.1	white	2	1.8	1	0.5	
	black	0	0.0	4	2.3	black	2	1.8	2	0.9	
		$\chi^2 = 25.750$		$\alpha = P = 0.001$				$\chi^2 = 8.752$		$\alpha = P = 0.271$	

ACCEPTANCE (PRAISE)	yellow	53	35.6	50	28.7	yellow	36	32.7	67	31.5	
	orange	28	18.8	39	22.4	orange	20	18.2	47	22.1	
	red	31	20.8	17	9.8	red	10	9.1	38	17.8	
	blue	10	6.7	27	15.5	blue	19	17.3	18	8.5	
	green	13	8.7	25	14.4	green	13	11.8	25	11.7	
	purple	6	4.0	9	5.2	purple	5	4.5	10	4.7	
	white	7	4.7	6	3.4	white	5	4.5	8	3.8	
	black	1	0.7	1	0.6	black	2	1.8	0	0.0	
		$\chi^2 = 16.417$		$\alpha = P = 0.022$		$\chi^2 = 13.218$		$\alpha = P = 0.067$			
SURPRISE	yellow	30	20.1	37	21.3	yellow	22	20.0	45	21.1	
	orange	38	25.5	32	18.4	orange	24	21.8	46	21.6	
	red	20	13.4	28	16.1	red	19	17.3	29	13.6	
	blue	16	10.7	24	13.8	blue	16	14.5	24	11.3	
	green	18	12.1	19	10.9	green	12	10.9	25	11.7	
	purple	11	7.4	19	10.9	purple	10	9.1	20	9.4	
	white	12	8.1	10	5.7	white	5	4.5	17	8.0	
	black	4	2.7	5	2.9	black	2	1.8	7	3.3	
		$\chi^2 = 4.726$		$\alpha = P = 0.693$		$\chi^2 = 3.197$		$\alpha = P = 0.866$			
EXPECTATION	yellow	35	23.5	32	18.4	yellow	24	21.8	43	20.2	
	orange	15	10.1	27	15.5	orange	15	13.6	27	12.7	
	red	32	21.5	18	10.3	red	16	14.5	34	16.0	
	blue	13	8.7	27	15.5	blue	24	21.8	16	7.5	
	green	23	15.4	32	18.4	green	14	12.7	41	19.2	
	purple	19	12.8	15	8.6	purple	7	6.4	27	12.7	
	white	10	6.7	15	8.6	white	8	7.3	17	8.0	
	black	2	1.3	8	4.6	black	2	1.8	8	3.8	
		$\chi^2 = 17.094$		$\alpha = P = 0.017$		$\chi^2 = 17.712$		$\alpha = P = 0.013$			

Based on the χ^2 -test (Table 2) statistically significant difference between boys and girls in the expression of positive emotions with colours was found in three cases. The analysis of the variable *joy* shows that girls more frequently chose warm colours (yellow, orange and red). Significant difference was mainly observed in case of yellow and red colours. When it comes to the proportion of selected cool colours, we find that the boys largely opted for blue and green, while girls preferred purple. The difference was also found in the choice of black, which was not selected by any of the girls, but was found in the choice of several boys. In the case of praise from the teacher, which is understood as a feeling of acceptance, once again girls were the ones who showed more interest in warm colours, especially in yellow and red, while the colour orange was the only one chosen by more boys than girls. Girls chose yellow because they are happy and proud of themselves when teacher praises them; yellow reminds them of the glowing sun, pride, happiness, joy. They believe it is a happy and lively colour. Red is also seen as a cheerful colour, it reminds them of the heart that beats faster when we are praised and red cheeks when we blush. Boys like orange, because it is a warm, bright and lively colour. They associate it with pride and pleasure that one feels at

praise from the teachers. When it comes to the choice of cool colours, the situation was reversed, as more boys than girls chose blue and green. They connected both colours, as it was with orange, with pride and pleasure, but they also believed that both are happy colours. Green was for some of the pupils their favourite; it reminds them of the nature that they like. When pupils expect a gift, we have the same results as in the above two cases. Girls chose yellow and red more often than boys, while the boys chose orange as the warm colour more often. Both girls and boys chose these colours because they associate them with pleasant emotions and with gifts that are wrapped in these colours. In the case of cool colours, boys more often chose blue and green, whereas girls preferred purple. When expecting a gift, the boys feel excited, anxious, and the colours which are best associated with these feelings, in their opinion, are blue and green. They remind them of the sea, nature and gifts wrapped in blue or green coloured paper. The differences between girls and boys were also established in the choice of the colour black, which was chosen by more boys, because they like it or link it with curiosity.

When comparing the average annual grades, statistically significant differences occurred only in cases when pupils expect a gift ($\chi^2 = 17.712$, $P = 0.013$). Those with higher average scores more often chose the colours green (19.2 %) and purple (12.7 %) than those with lower average scores at annual assessment. The latter chose the colour blue in a slightly higher percentage (21.8 %) compared to those with all or the majority of excellent grades. Looking at the colours where the described differences occurred, it can be seen that all three cool colours stand out. Otherwise, the highest percentage appears with yellow, but the difference between the two groups is not very obvious or large.

The results of the χ^2 -test ($\chi^2 = 15.870$, $P = 0.026$) (Table 3) show that statistically significant difference was established according to gender only with reference to the variable *anger*. When the choice of cool colours is analysed, it can be observed that girls chose blue (6.7 %) and green (8.7 %) as well as black (44.3 %) more often than boys. The boys more frequently associated anger with red (33.3 %) and white (7.5 %). Blue reminds girls of the sea, the waves and anger. This was also one of the colours for which the girls reported dislike. The same goes for the colours green and black. Girls believe that black is a sad colour; it reminds them of anger and horror. When we are angry, we have, in girls' opinion, black thoughts. Red reminds boys of fire, hell and an angry bull. When we are angry, we also blush. White colour was associated with ghosts and lightning during the storm.

Table 2.

Number (f) and percentage (f%) of pupils' choice of colours with different negative emotional states in relation to gender and average annual grades.

Negative feelings	Colours	Girls		Boys		Colours	Grades 1 to 4		Grade 5		
		f	f%	f	f%		f	f%	f	f%	
ANGER	yellow	4	2.7	4	2.3	yellow	4	3.6	4	1.9	
	orange	6	4.0	8	4.6	orange	4	3.6	10	4.7	
	red	37	24.8	58	33.3	red	36	32.7	59	27.7	
	blue	10	6.7	4	2.3	blue	6	5.5	8	3.8	
	green	13	8.7	5	2.9	green	7	6.4	11	5.2	
	purple	10	6.7	9	5.2	purple	4	3.6	15	7.0	
	white	3	2.0	13	7.5	white	10	9.1	6	2.8	
	black	66	44.3	73	42.0	black	39	35.5	100	46.9	
	Total	149	46.1	174	53.9	Total	110	34.1	213	65.9	
		$\chi^2 = 15.870$		$\alpha = P = 0.026$				$\chi^2 = 11.808$		$\alpha = P = 0.107$	
FEAR	yellow	6	4.0	7	4.0	yellow	8	7.3	5	2.3	
	orange	5	3.4	2	1.1	orange	1	0.9	6	2.8	
	red	7	4.7	8	4.6	red	8	7.3	7	3.3	
	blue	6	4.0	14	8.0	blue	5	4.5	15	7.0	
	green	11	7.4	9	5.2	green	7	6.4	13	6.1	
	purple	10	6.7	21	12.1	purple	16	14.5	15	7.0	
	white	51	34.2	47	27.0	white	31	28.2	67	31.5	
	black	53	35.6	66	37.9	black	34	30.9	85	39.9	
	Total	149	46.1	174	53.9	Total	110	34.1	213	65.9	
		$\chi^2 = 8.431$		$\alpha = P = 0.296$				$\chi^2 = 14.916$		$\alpha = P = 0.037$	
SADNESS	yellow	2	1.3	2	1.1	yellow	2	1.8	2	0.9	
	orange	2	1.3	6	3.4	orange	5	4.5	3	1.4	
	red	3	2.0	8	4.6	red	4	3.6	7	3.3	
	blue	45	30.2	34	19.5	blue	19	17.3	60	28.2	
	green	4	2.7	4	2.3	green	2	1.8	6	2.8	
	purple	16	10.7	19	10.9	purple	13	11.8	22	10.3	
	white	21	14.1	25	14.4	white	18	16.4	28	13.1	
	black	56	37.6	76	43.7	black	47	42.7	85	39.9	
	Total	149	46.1	174	53.9	Total	110	34.1	213	65.9	
		$\chi^2 = 7.699$		$\alpha = P = 0.360$				$\chi^2 = 7.983$		$\alpha = P = 0.334$	
REJECTION (SCOLD)	yellow	0	0.0	3	1.7	yellow	2	1.8	1	0.5	
	orange	8	5.4	10	5.7	orange	7	6.4	11	5.2	
	red	12	8.1	24	13.8	red	14	12.7	22	10.3	
	blue	14	9.4	16	9.2	blue	13	11.8	17	8.0	
	green	18	12.1	15	8.6	green	12	10.9	21	9.9	
	purple	30	20.1	19	10.9	purple	12	10.9	37	17.4	
	white	15	10.1	20	11.5	white	12	10.9	23	10.8	
	black	52	34.9	67	38.5	black	38	34.5	81	38.0	
	Total	149	46.1	174	53.9	Total	110	34.1	213	65.9	
		$\chi^2 = 10.833$		$\alpha = P = 0.146$				$\chi^2 = 5.447$		$\alpha = P = 0.606$	

Popular and Unpopular Colours in Pupils' View

Lower results show differences among pupils in the choice of their favourite colour and the colour they do not like.

Table 3.

Number (f) and percentage (f%) of pupils' choice of favourite colour and the disliked colour in relation to gender and average annual assessment.

Colours	Girls		Boys		Colours	Grades 1 to 4		Grade 5			
	f	f%	f	f%		f	f%	f	f%		
FAVOURITE COLOUR	yellow	10	6.7	7	5.3	yellow	6	5.5	11	5.2	
	orange	6	4.0	16	9.2	orange	4	3.6	18	8.5	
	red	21	14.1	21	12.1	red	12	10.9	30	14.1	
	blue	23	15.4	45	25.9	blue	34	30.9	34	16.0	
	green	22	14.8	39	22.4	green	17	15.5	44	20.7	
	purple	30	20.1	21	12.1	purple	15	13.6	36	16.9	
	white	0	0.0	2	1.1	white	1	0.9	1	0.5	
	black	17	11.4	16	9.2	black	12	10.9	21	9.9	
	gold	14	9.4	2	1.1	gold	4	3.6	12	5.6	
	pink	2	1.3	0	0.0	pink	2	1.8	0	0.0	
	brown	1	0.7	3	1.7	brown	0	0.0	4	1.9	
	colourful	0	0.0	2	1.1	colourful	2	1.8	0	0.0	
	fluorescent green	2	1.3	0	0.0	fluorescent green	0	0.0	2	0.9	
	silver	1	0.7	0	0.0	silver	1	0.9	0	0.0	
	Total	149	46.1	174	53.9	Total	110	34.1	213	65.9	
		$\chi^2 = 40.634$		$\alpha = P = 0.000$				$\chi^2 = 28.879$		$\alpha = P = 0.007$	
DISLIKED COLOUR	yellow	2	1.3	2	1.1	yellow	1	0.9	3	1.4	
	orange	4	2.7	1	0.6	orange	0	0.0	5	2.3	
	red	2	1.3	3	1.7	red	2	1.8	3	1.4	
	blue	7	4.7	4	2.3	blue	5	4.5	6	2.8	
	green	12	8.1	17	9.8	green	5	4.5	24	11.3	
	purple	1	0.7	24	13.8	purple	14	12.7	11	5.2	
	white	6	4.0	9	5.2	white	3	2.7	12	5.6	
	black	50	33.6	50	28.7	black	43	39.1	57	26.8	
	gold	24	16.1	46	26.4	gold	23	20.9	47	22.1	
	pink	15	10.1	6	3.4	pink	6	5.5	15	7.0	
	brown	21	14.1	11	6.3	brown	7	6.4	25	11.7	
	colourful	4	2.7	0	0.0	colourful	1	0.9	3	1.4	
	skin tone	0	0.0	1	0.6	skin tone	0	0.0	1	0.5	
	silver	1	0.7	0	0.0	silver	0	0.0	1	0.5	
	Total	149	46.1	174	53.9	Total	110	34.1	213	65.9	
		$\chi^2 = 51.265$		$\alpha = P = 0.000$				$\chi^2 = 23.437$		$\alpha = P = 0.037$	

The results have confirmed differences between boys and girls with respect to the choice of their favourite colour. Girls liked purple (20.1 %), while boys liked blue

(25.9 %). The reasons for the choice of both are different. Girls simply like colour purple; they believe it is lively and bright. Even though the colour violet or purple is, being a mixture of red and blue, a colour of mixed feelings, uncertainty and non-objectivity, it brings peace and helps in overcoming fear (Kovačev, 1997), encourages creativity, brings inspiration, sensuality and spirituality (Chiazzari, 2000). Purple is beside pink and red stereotypically attributed to girls, and was also attributed by girls themselves to the female sex in a number of research studies (e.g. Picariello et al., 1990; Radeloff, 1990; Trstenjak, 1996; Jadv, Hines, & Golombok, 2010). The results also show that the remaining cool colours and colour red are popular with girls, too. Possible reasons can be sought in the current colour trends, where purple is still quite popular. It is interesting that all three cool colours and warm red are also popular with boys. The colour blue was most often chosen, because they like it, it is considered the colour of the sky, and it also reminds them of the sky. Some are excited about the sea and the colour blue is their favourite because of this. Also, this is their lucky colour and, in their opinion, the most natural one. Blue is considered to be a typically male colour and consequently the most frequently chosen, as has been observed in the above-mentioned studies. When it comes to the pupils' disliked colours, black is the least popular colour for both boys and girls. The percentage of girls disliking black is significantly higher than the percentage of boys. Girls believe that black is sad and dull; they do not like it because it is dark; it reminds them of anger, sadness, fever; it should be the colour of death. Gray and brown are also the colours that girls do not like. In addition to black, boys do not like pink; they say it is the colour for girls, and is trashy and ugly. Likewise, pink is not particularly popular with girls either, but there is still a larger percentage of boys who do not like it. Purple was also often chosen by the boys as the colour that they do not like. Reasons for the choice are the same as for the pink colour (stereotypical attribution of the colour according to gender).

Table 2 shows that there is a statistically significant difference between pupils in terms of average annual grades. In case of the favourite colour, the pupils with the highest average grades chose green in the highest proportion (20.7 %), and they chose the same colour more often than the pupils with lower average grades. Beside its positive attributes, it may also be asserted that emotional associations with the colour green are not always favourable, because it can bring about a feeling of depression and other adverse feelings (Kovačev, 1997; Chiazzari, 2000) which may not be very specific for pupils with higher grades, who are expected to have higher self-esteem; however, this is not always the case (Magajna & Horvat, 1989; Jurišević, 1999a; 1999b). Significantly higher percentage (30.9 %) of pupils whose average at annual assessment was lower chose the colour blue than the pupils with a higher average. The percentage of pupils with lower average who also chose red and purple was lower than the percentage of pupils with higher grades. The results show that among the selected colours there are three cool colours in the front, while among the warm ones there is only red. The difference between pupils with a higher average and those with a

lower one in the choice of colour that they do not like is statistically significant ($\chi^2 = 23.437, P = 0.037$). Among the pupils with a higher average, green and brown are much less popular than among the pupils with a lower average. The reasons for such results can be found in the properties attributed to each colour because the emotional associations to the green colour are not always the best, they often go in the direction of depression and negative feelings (Kovačev, 1997; Chiazzari, 2000). The colour brown indicates suppression of emotions, running away from the outside world and the fear of emotions. All this is often due to a lack of self-respect and self-esteem (Chiazzari, 2000). Moreover, most pupils opted for black, which is largely not liked among pupils with lower average. More than a third of these pupils selected this colour. Besides black, they also chose purple (12.7 %). Both colours bring about unpleasant emotions in us: uncertainty, sadness, etc. (Chiazzari, 2000).

Pupils' Emotional Stability

Below we present the results of tests, which were applied to study the relationship between the expression of emotions with colours, and emotional stability, expressed with colours (Duh & Kolar, 2012).

Table 4.

Number (f) and percentage (f%) of pupils according to their emotional stability (conflict-prone), in terms of their self-esteem and expectations for the future (Duh & Kolar, 2012, pp. 90-91).

Rates of emotional stability	Self-esteem		Expectations for the future	
	f	f %	f	f %
no confrontational tendencies / emotional stability	140	43.3	121	37.5
tendency to conflict (*)	167	51.8	164	50.8
conflict personality (**, ***)	16	4.9	38	11.7
Total	323	100.0	323	100.0

(Rates of emotional stability: absence of * - the emotional stability (no confrontational tendencies), one star (*) - a tendency to conflict, two and three stars (**, ***) – a conflict personality).

Table 4 shows that when it comes to self-esteem more than half of the pupils have a tendency to a conflict or have a somewhat poor self-image. Hence, thinking of themselves or the very idea about themselves is a burden for most pupils. Nearly 44 % of the pupils are not concerned with their self-esteem or they have a favourable opinion of themselves. In the sample, we had the least pupils who showed a conflict personality, which is a very positive finding. More than half of the pupils demonstrated a tendency to conflict with respect to expectations for the future; at the same time, thinking about it presents a slightly stressful burden for the pupils. Emotional stability was identified in 37.5 % of the pupils and consequently they had no conflict preferences or psychological burden. Only about 12 % of pupils are quite burdened by problems. The fact that conflict personalities are present in the lowest percentage is considered a positive finding.

In summary, we find that pupils' expectations of the future present a much bigger burden for them than their self-esteem. Nearly 12 % of the pupils were found to be

prone to conflict in terms of expectations for the future, while in terms of self-esteem there were only 5 %. Consequently, there are more pupils who are not burdened with their self-esteem than those who view their future pessimistically.

The Most Common Characteristics of Pupils in Terms of Self-Esteem and Expectations for the Future

We are introducing the most common characteristics of pupils in terms of self-esteem and expectations for the future. The percentages of pupils by individual characteristics are taken from Table 3; described characteristics are summarized from Lüscher (1989) and depend on the classification of coloured cards (green and yellow hues) by the pupils. Presence or absence of * indicates whether pupils are stressed out and prone to conflict or whether these features were not detected in pupils (Duh & Kolar, 2012, pp. 91-92).

Table 5.

Numbers (f) and percentage (f%) of pupils according to the classification of coloured cards in terms of self-esteem and expectations for the future (Duh & Kolar, 2012, pp. 91-92).

Classification of coloured cards	Self-esteem (green hues)		Expectations for the future (yellow hues)	
	f	f%	f	f%
1234	2	0.6	1	0.3
1243	1	0.3	2	0.6
1324	2	0.6	3	0.9
1342	2	0.6	7	2.2
1423	0	0.0	0	0.0
1432	1	0.3	3	0.9
2134	2	0.6	2	0.6
2143	2	0.6	1	0.3
2314	10	3.1	7	2.2
2341	9	0.8	5	1.5
2413	2	0.6	4	1.2
2431	13	4.0	6	1.9
3124	3	0.9	11	3.4
3142	3	0.9	33	10.2
3214	5	1.5	2	0.6
3241	11	3.4	1	0.3
3412	11	3.4	53	16.4
3421	12	3.7	10	3.1
4123	4	1.2	2	0.6
4132	30	9.3	14	4.3
4213	6	1.9	8	2.5
4231	38	11.8	12	3.7
4312	47	14.6	123	38.1
4321	108	33.4	13	4.0
Total	323	100.0	323	100.0

a) Self-Esteem

The descriptions given below show the image that pupils have of themselves and also their expressed desire to be what they want (Duh & Kolar, 2012).

The following description may be applied to about a third (33.4 %) of the pupils:

“The person believes that in the conflicting situation the preconditions for a satisfactory comfort do not exist. He/she does not want to come to terms with the unfortunate situation of a compromise, but also does not know how to solve burdensome problems. Therefore, he/she wants to remove this exciting and claustrophobic tension. He/she is looking for opportunities to change the relationship and thus to relieve the burdensome pressure. Expectedly, he/she is interested in stimulating contacts, because new opportunities are the preconditions to look for the simplest solution.”*

Typical for 14.6 % of the pupils is the following description:

“A person thinks that other people do not respect the freely expressed wishes and opinions. He/she wants to push problems to the side so that he/she would not be burdened by internal tension. He/she is expectedly open and highly interested in the relationships that do not cause burden and that present stimulating contacts.”

The following conclusions may be applied to almost twelve percent (11.8 %) of the pupils:

“The person believes that situations and their demands do not allow him/her to be lenient to the unsatisfactory conditions. He/she wants to be a profiled personality. He/she requires that others appropriately respect special views and their enforcement. This brings personal problems. He/she wants to push internal tension aside and distract him/herself. He/she is interested in relationships that are not burdensome and present stimulating contacts, because the new links are per appearance the simplest solution.”

Characteristics given below may be attributed to 9.3 % of the pupils:

“A person is looking for means and ways to be distracted by specific, unresolved personal problems. He/she wants to push the internal tension to the side, so that it is not confined. He/she is greatly interested in the new relations that do not cause burden, and charming stimulating contacts.”*

In terms of self-esteem as well as the desire of what pupils actually want to be, a feeling of some kind of pressure that they are burdened by was observed in about one third of pupils. Therefore, they are seeking ways to dispose of stress and they see the solution in incentive and new opportunities. Conflict tendency is also distinctive for these pupils. Nearly 15 % of the pupils are burdened with the thought that other people will disapprove of the desires and views that they wish to freely express. Otherwise, they are open and want to eliminate internal tension. The latter is also typical for the slightly lower percentage of pupils who show interest in the new relaxed relationships and external stimulations, intended to represent the solution to the problem. Tendency to conflict can be observed in slightly fewer than 10 % of pupils who have unsolved

personal problems and feel the inner tension. Also, these pupils exhibit interest in new contacts and relationships that do not cause burden and stress. We can see that the majority of pupils feel they are under stress and they assign important role to other peoples' opinion. The latter is also one of the many factors that can impact the development of self-esteem in childhood (Kobal, 2000). It is difficult to say whether the pupils have positive or negative self-esteem, but it can be claimed that self-esteem may also affect the selection of activities at school and in relationships with peers and adults (Magajna & Horvat, 1989).

b) Expectations for the Future

The findings below reveal the expectations that pupils have for the future (Duh & Kolar, 2012).

The following characteristics were encountered by the largest percentage (38.1 %) of the pupils:

“A person would prefer to escape from the current, unfavourable situation. He/she hopes that he/she will find the desired, liberating solution under new, and better prerequisites. After resolving the vulnerability, he/she wants to develop new relationships and possible experiences.”*

For more than sixteen percent (16.4 %) of pupils the following was found out:

“A person is very interested in and open for what should happen now and in the future. He/she can be very excited about interesting people, especially when they contribute to the development of his/her fields of interest. He/she likes discovering new perspectives and diverse experiences and enjoys them.”

The following can be attributed to 10.2 % of pupils:

“A person works with a fellow man and the environment with an interest and openly. He/she lives in the present and is free of distance and distrust, open and able to be enthusiastic. He/she is also capable of immediate warm contact. He/she is open, has an unbiased attitude and is immediately ready for collaboration. He/she is looking forward to having pleasant experiences and enjoys sensuality.”

Based on the above explanations it can be summarized, in the first place, that over 38 % of the pupils have conflicting tendencies (from about half of the pupils, see Table 4 and high expectations for the future. They want to improve the current unfavourable situation and relationships. For more than 16 % of pupils it is typical that they are very open and interested in meeting new, interesting people and also in discovering new experiences. Openness and interest in the environment can be attributed to well over 10 % of the pupils. The future does not cause a psychological burden for them; they live in the present and are enthusiastic about new challenges.

Emotional Stability as a Factor in the Choice of Colours

Below are presented the results of the examination of differences in the selection of hot and cool or neutral colours with relation to positive and negative emotions,

depending on the rate of emotional stability or a conflict personality, in terms of self-esteem and expectations for the future (Duh & Kolar, 2012).

Table 6.

Analysis of variance in examining differences in the expression of positive and negative emotions in relation to pupils' emotional stability, expressed in colours, in terms of self-esteem (Duh & Kolar, 2012, pp. 94-95).

CRITERION	FACTOR	n	x	s	Test of Homogeneity of Variances		Examination of the difference of arithmetic means	
					F	α=P	F	α=P
Number of warm colours in relation to positive emotions	no confrontational tendencies	140	2.550	0.970				
	tendency to conflict (*)	167	2.491	0.904	2.634	0.073	0.164	0.849
	conflict personality (**, ***)	16	2.563	1.209				
Number of cool/neutral colours in relation to negative emotions	no confrontational tendencies/emotional stability	140	3.300	0.686				
	tendency to conflict (*)	167	3.275	0.709	0.671	0.512	0.058	0.943
	conflict personality (**, ***)	16	3.313	0.602				

The assumption of homogeneity of variances (Levene's-test) is justified in both cases. Examination of the difference of arithmetic means has further shown that in the case of emotional stability, i.e. self-esteem, no statistically significant differences were found with reference to positive emotions ($\alpha = P = 0.849$) as well as negative ones ($\alpha = P = 0.943$). Based on the results, it can be said that emotional stability, expressed in colours, in terms of self-esteem is not a factor that would cause a statistically significant difference. It should be noted that this is a continuous ordinal variable in which, from the qualitative point of view, the differences between categories are not unambiguous, they move from one to another (Duh & Kolar, 2012).

Table 7.

Analysis of variance in examining differences in the expression of positive and negative emotions in relation to emotional stability of the pupils, expressed in colours, in terms of expectations for the future (Duh & Kolar, 2012, pp. 95-96).

CRITERION	FACTOR	n	x	s	Test of Homogeneity of Variances		Examination of the difference of arithmetic means	
					F	α=P	F	α=P
Number of warm colours in relation to positive emotions	no confrontational tendencies	121	2.455	0.957				
	tendency to conflict (*)	164	2.531	0.910	1.449	0.236	0.870	0.420
	conflict personality (**, ***)	38	2.684	1.068				
Number of cool/neutral colours in relation to cool colours negative emotions	no confrontational tendencies	140	3.306	0.693				
	tendency to conflict (*)	167	3.311	0.679	0.048	0.953	1.102	0.334
	conflict personality (**, ***)	16	3.132	0.741				

The assumption of homogeneity of variances (Levene's-test) is justified in both cases. Examination of the difference of arithmetic means has further shown that in

the case of emotional stability, in terms of expectations for the future there are no statistically significant differences in positive emotions ($\alpha = P = 0.420$) as well as negative ones ($\alpha = P = 0.334$). According to the results, we can say that emotional stability, expressed in colours, in terms of expectations for the future is not a factor that would cause a statistically significant difference. It should be noted that, in this case, this is a continuous ordinal variable (Duh & Kolar, 2012).

Discussion

Pupils mostly associate positive feelings with warm colours and negative emotions with cool ones. According to the results, we found that connecting positive emotions with warm colours is more common for girls, which means that we can confirm the first hypothesis (H1.1). Expected differences according to the average annual grades of the covered sample were not found, so the second hypothesis (H1.2) has not been confirmed. In the case of expression of negative emotions with colours based on gender, differences were not expected, but they occurred in the case of *anger*, which means that we have to reject the third hypothesis (H1.3). The results considering average annual grades are also not in accordance with the set hypothesis (H1.4). Among favourite colours, purple is the most popular one with girls and blue with boys. In general, we conclude that cool colours are more popular than warm ones. Results are surprising, because we expected that girls would choose warm colours more often (H2.1). Since pupils with higher average annual grades did not choose warm colours more frequently than pupils with lower average, the hypothesis H2.2 cannot be confirmed. Reasons for the selection have already been described in the interpretation of the results, which showed that the current colour trends and successful sports teams with distinctive colour symbols may influence the choice of colours. Black is the colour that is highly unpopular with both boys and girls irrespective of the average annual assessment scores, so the differences did not occur, which means that the hypotheses H2.3 and H2.4 cannot be confirmed.

In researching the emotional stability, in terms of self-esteem and expectations for the future, the majority of pupils in our sample have demonstrated a conflicting tendency in connection with both terms. Thinking about this represents a slight stress to them. It was also found that pupils have high expectations for the future. At the same time, they want to improve the current worrying and stressful situation as well as relationships with others. A good third of pupils feel serious pressure with respect to their self-esteem and they also have a conflict tendency. Pupils want to eliminate the unpleasant feelings and the important role in this is assigned to other people (peers and adults). On the one hand, they are causing discomfort, but on the other, they are the ones who can solve this stressful situation. We cannot say for certain whether the pupils' self-esteem is positive or negative, but it can be said that self-esteem can affect the choice of activities at school and in relationships with others. In researching the emotional stability in terms of self-esteem and expectations for the future, expressed

in colours, no significant difference was established. The same conclusions were reached in the expression of positive emotions with warm colours (in terms of pupils' self-esteem and expectations for the future) and also negative emotions with cool or neutral colours.

Conclusions

Reviewing the survey results we can draw parallels to the theoretical positions which were introduced in the beginning of this paper and in our previous studies (Duh & Kolar, 2011; 2012). It is important to emphasize that we cannot overlook the fact that the correlation between colours and negative or positive emotions also depends on the pupils' experience with a particular colour and their subjective aesthetic judgment. Both aspects will determine whether a certain colour will be considered positive or negative. Schuster (2000, p. 46) claims that "associations are determined by meaningful connections, in which each colour appears. Therefore, we cannot separate the effect of colour from this semantic link". Teachers can more easily understand pupils' attitude towards different colours only if they understand children's preferences for certain colour and their conscious use in artistic expression. Good indicators of personal preferences for certain colour and related (basic or/and complex) feelings can already be basic visual tasks with fantastic motifs and a free choice of colours. This goes for both children and adolescents.

Theoretical insight into the field and research results can offer primary school teachers a bigger awareness about the importance of colours in art classes and pupils' emotional experiences. They can also provide a clearer picture of the role of colours in the identification of individual emotions. Results can help teachers plan educational activities as well as when interpreting pupils' work. It is the choice of colours in pupils' art work that can reveal their emotional perception. At the same time, caution is necessary when analysing the work of pupils as their use of cool or black colour does not automatically mean something negative. Also, a stereotypical attribution of the use of colours and the favouring of colours on the teachers' part according to the gender of pupils should not be present in the classroom because the results of the surveyed sample of pupils have shown that these stereotypes no longer apply in present times. Pupils can simply like some colours more than others, which leads to their frequent use. Based on the theoretical knowledge and research findings it is visible that the field of colours and emotions leaves open the possibility for further research and at the same time applicability within school practice. Theoretical starting-points, which have been treated, and the findings are welcome for both teachers and pupils, for this knowledge can each time be checked in practice.

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Percepcija temeljnih emocija i boja učenika četvrtog razreda osnovne škole

Sažetak

Svakodnevno smo okruženi bojama u tisućama nijansi, ali ih ponekad jednostavno ignoriramo. Ako stvarno želimo razumjeti odnos između „ljudi i boja”, moramo biti svjesni toga da boje imaju fizičke karakteristike, ali i izražene fiziološke i psihološke učinke na nas. U našem istraživanju ispitivali smo percepciju učenika četvrtog razreda o odnosu između osnovnih emocija i boja, njihove omiljene i nepopularne boje, kao i povezanost emocionalne stabilnosti učenika, izražene putem njihova samopoštovanja i očekivanja od budućnosti, uz pomoć boja. Namjera nam je bila utvrditi postoje li razlike prema spolu, prosječnoj godišnjoj ocjeni i odnosu između izražavanja emocija s pomoću boja i emocionalne stabilnosti s obzirom na boje. Rezultati su pokazali da većina učenika povezuje pozitivne emocije s toplim bojama, a negativne emocije s hladnima. Među omiljenim je bojama ljubičasta, koja je i najpopularnija među djevojčicama, dok je plava najpopularnija među dječacima. Crnu boju učenici ne vole. Također se pokazalo da većina učenika razmišlja o samopoštovanju, kao i da im njihova očekivanja vezana uz budućnost uzrokuju značajan stres.

Ključne riječi: *emocionalna stabilnost; očekivanja vezana uz budućnost; osjećaji; samopoštovanje; tople i hladne boje.*

Uvod

Boje mogu utjecati na naše tijelo i rezultirati različitim raspoloženjima i emocionalnim stanjima koja su vidljiva izvana. Način na koji ljudi rade i žive okruženi različitim bojama može se značajno razlikovati, sve dok vjerujemo i dok smo svjesni utjecaja boja na naš život. Čak i kao djeca koristili smo se bojama kod kuće, ali i u školi. Prema riječima stručnjaka, upotreba različitih boja otkriva djetetov emocionalni život. Bognar i Dubovički (2012) pišu o emocijama u odgoju i obrazovanju i smatraju da su učenici suočeni s ugodnim, ali i neugodnim emocijama. Iako nastavnici pokušavaju stvoriti pozitivnu atmosferu u učionici, neugodne se emocije ne mogu izbjeći (Bognar i Dubovički, 2012). Na temelju učeničkih odabira boja možemo povući paralele s percepcijom obje vrste emocija. Važno je naglasiti da se izražavanje boja u djece

mijenja i nadograđuje tijekom njihova razvoja. Također se mijenja i njihov stav prema bojama.

Svaka boja može izazvati određeno raspoloženje. Neke boje smiruju naše misli; druge mogu potaknuti ili stvoriti strah i tjeskobu. Važno je napomenuti da se osjećaji ne mogu generalizirati prema određenim bojama, jer su naša iskustva u potpunosti subjektivna. S druge strane, ta se subjektivna iskustva podudaraju sa znanstvenim objašnjenjem psiholoških učinaka boje (Trstenjak, 1996). Različiti ljudi vole različite boje. Mi ih odabiremo i njima se koristimo prema vlastitoj volji i osjećajima. Također kupujemo proizvode koje želimo, ukrašavamo bojama životne i radne prostore i pazimo na izbor boja kada kupujemo odjeću. Proučavajući stereotipe vezane uz boje, možemo vidjeti da djeca od rane dobi pokazuju jasne razlike u interesima s obzirom na spol. Sve počinje s igračkama. Možemo primijetiti veće zanimanje za lutke i kuhinjske naprave kod djevojčica, odnosno za vozila i oružje kod dječaka. Jadva, Hines i Golombok (2010) naglašavaju da rezultati istraživanja različitih autora također podržavaju to stajalište. Razne teorije (kognitivna, socijalna i hormonalna) objašnjavaju te razlike i nalaze razloge za njih u različitim područjima (socijalizacija, društveno okruženje, stereotipi, hormonalne razlike itd.). Također, neki su autori (O'Brien i Huston, 1985; Roopnarine, 1986; Picariello i sur., 1990, u Marjanović Umek i Zupančić, 2009) u svojim istraživanjima došli do sličnih zaključaka.

Emocije i boje

Kad uspoređujemo različite teorijske pristupe (fiziološki, neurološki, funkcionalni, kognitivni i pristup socioloških teorija), uočavamo brojne razlike, ali isto tako možemo zaključiti da su emocije složeni procesi koji uključuju različite reakcije (kognitivne, bihevioralne, ekspresivne i fiziološke) koje prate određeni slijed (Smrtnik Vitulić, 2004). Emocije možemo podijeliti na osnovne (jednostavne) i složene (kompozitne). Jednostavne se emocije javljaju već u vrlo ranoj dobi i one su „nesložene”, odnosno ne sastoje se od više elemenata (Musek i Pečjak, 1997). One su također univerzalne, jer se javljaju u svim kulturama. Njihova je najvažnija uloga prilagodba organizma za rješavanje osnovnih problema preživljavanja (Kompere i sur., 2001). Plutchik (1955; 1980 u Musek i Pečjak, 1997) navodi sljedećih osam osnovnih emocija: radost, tuga, ljutnja, strah, prihvaćanje, odbacivanje (gnušanje), očekivanje, iznenađenje. U usporedbi s osnovnim emocijama, složene se emocije razvijaju tek nakon druge godine života, a nastaju povezivanjem jednostavnih emocija. Izvorno nisu važne za opstanak, ali su društvene emocije koje imaju važnu ulogu u suživotu s drugima (Smrtnik Vitulić, 2004) i uglavnom ovise o društvenim i kulturnim utjecajima. Plutchik (1980 u Musek i Pečjak, 1997) razlikuje pozitivne (radost, prihvaćanje, očekivanje, iznenađenje) i negativne (tuga, ljutnja, strah, odbacivanje) osnovne emocije, koje su, prema njegovim riječima, temelj određenih osobina ličnosti. S druge strane, Dubovički i Bogonar (2012) ne govore o pozitivnim i negativnim emocijama, već preferiraju termine ugodne i neugodne ili teške emocije.

Ljudi izražavaju emocije od dojenačke dobi tijekom cijelog života, a tijekom razvoja emocionalno iskustvo i izražavanje sve se više razvija i obogaćuje. Ako postoji normalan emocionalni razvoj, razvija se i emocionalno zrela osoba, odnosno javlja se emocionalna zrelost (Musek i Pečjak, 2001) koja uključuje popustljivost, kontrolu i raznolikost emocija (Kompore i sur., 2001). S obzirom na dob sudionika u ovom smo se istraživanju usredotočili na razdoblje kasnog djetinjstva. Tijekom navedenog razdoblja djeca doživljavaju i izražavaju sve emocije kao i u prethodnim razvojnim razdobljima: radost, ljutnju, ljubav, tjeskobu, strah, znatiželju, ljubomoru i sl. Emocionalni razvoj u navedenom razdoblju omogućuje svoj djeci bolju osviještenost, razumijevanje i interpretaciju vlastitih emocija, ali ne u potpunosti, jer djeca ne utječu na emocije samo na svjesnoj razini (Smrtnik Vitulić, 2003, u Marjanović Umek i Zupančić, 2009). Pojedine emocije identificiraju se prema vanjskim, vidljivim znakovima, ali i na temelju razumijevanja psiholoških razlika između pojedinaca koje nisu vidljive izvana (Duh i Kolar, 2012). Putem svakodnevnog procesa učenja učenici su suočeni s ugodnim i neugodnim emocijama. Neugodne se emocije najčešće javljaju u konfliktnim situacijama; dakle, još je važnije da ih naučimo kontrolirati već kao djeca. Također moramo naučiti kako rješavati konfliktnu situaciju bez nasilja. Važno je pokazati svoje osjećaje na odgovarajući način, i ne pokušavati ih sakriti, jer će oni postati vidljivi u ozbiljnijem obliku u prvoj konfliktnoj situaciji (Bognar i sur., 2004, u Dubovički i Bognar, 2012).

Brojni su autori (Frieling, 1968; Boyatzis i Varghese, 1993; Kovačev, 1997; Huang, 2008) proveli istraživanja vezana uz tu temu. Boyatzis i Varghese (1993), i Huang (2008) istraživali su povezanost između boja i različitih emocionalnih stanja djece u dobi od 4 do 7 godina. Određene paralele mogu se povući između tih istraživanja, jer su rezultati u oba slučaja pokazali da su djeca češće birala svijetle, tople boje (one koje također više vole) za pozitivne emocije, a uz negativne su emocije uglavnom birali hladne i mračne boje (one koje ne vole). Crvena se boja pojavila u oba slučaja što je, s obzirom na njezino značenje, posve razumljivo. Autori također naglašavaju važnost dječjih iskustava pri povezivanju boja s pojedinim emocijama. U prijašnjem istraživanju (Duh i Kolar, 2011) također je utvrđeno da su učenici povezivali pozitivne emocije s toplim, ali i hladnim bojama. Boje za koje je utvrđeno da se najviše ističu bile su žuta, crvena, plava, ljubičasta i zelena. Razlozi za takav izbor bili su različiti (Duh i Kolar, 2012). Negativne su emocije uglavnom bile povezane s crnom, ali i s hladnim bojama (plava, ljubičasta), kao i s bijelom u većoj mjeri. Ružičasta i plava su boje koje se i dječacima i djevojčicama najviše sviđaju (Duh i Kolar, 2012).

(Učenje) samopoštovanja i uspjeh u učenju

Budući da je definicija samopoštovanja relativno složena, u nastavku će se pokušati prikazati sažetak definicije. Samopoštovanje se može definirati kao cjelina reprezentacija, viđenja, značajki, atributa, mišljenja, vrijednosti, vjerovanja itd. koje osoba može uočiti na sebi. To je kombinacija svjesnog i nesvjesnog. Samopoštovanje

je jedno od glavnih područja osobnosti, koje se postupno oblikuje od ranog djetinjstva i mijenja i razvija tijekom cijelog života (Kobal, 2000).

Odnos između uspjeha u školi, odnosno dobrih ocjena i samopoštovanja također je složen. Prema Horvat i Magajna (1989), oba konstrukta imaju učinak jedan na drugi. Već na početku školovanja dijete posjeduje određeno samopoštovanje, koje se razvilo na prošlim iskustvima, što znači da djetetovo samopoštovanje na početku formalnog obrazovanja može biti dobro (pozitivno) ili loše (negativno). Djetetovo se samopoštovanje može pogoršati ako dijete dobiva niže ocjene, ako osjeti negativan stav nastavnika, vršnjaka, pa čak i roditelja (Horvat i Magajna, 1989). Tomori (2002) piše o školskoj neučinkovitosti i vjeruje da školski uspjeh snažno potkopava cjelovit osobni razvoj pojedinaca (Duh i Kolar, 2012).

Jurišević (1999a) rezimira rezultate istraživanja koja su ispitivala odnos između samopoštovanja i postignuća u učenju. Autorica je pronašla da su oba konstrukta povezana, ali da je korelacija između njih niska do umjerena. Također je utvrdila da je samopoštovanje jedan od važnih čimbenika postignuća u učenju (kao primjer predlaže model prilagođen prema James i sur., 1991), ali upozorava na to da je potrebno shvatiti da samopoštovanje nije jedini, ni najvažniji čimbenik. Autorica (1999a; 1999b) također upotrebljava pojam učenje samopoštovanja i pokazuje da postoji percepcija vlastite nastavničke kompetencije. Ono uključuje individualne komponente koje predstavljaju učenikovo znanje o sebi u pojedinim područjima učenja (uključujući opisne i komponente vrijednosti), koje učenici oblikuju sami (Duh i Kolar, 2012). Schunk (1990) smatra da uspjeh u učenju značajno utječe na učenikovo samopoštovanje, i to na dva načina: izravno i neizravno preko društvene usporedbe djece s njihovim prijateljima iz razreda (Pečjak i Košir, 2002).

Metode

Istraživanjem se nastojao dobiti uvid u povezanost emocija i boja učenika četvrtih razreda osnovne škole, uvid u popularne i nepopularne boje, kao i u emocionalnu stabilnost izraženu putem samopoštovanja i očekivanja vezanih uz budućnost, uz pomoć boja. Zanimalo nas je postoje li razlike prema spolu, prosječnim godišnjim ocjenama i odnosu između izražavanja emocija bojama i emocionalne stabilnosti, s obzirom na boje.

Hipoteze

Hipoteze su oblikovane prema izražavanju emocija i s obzirom na popularnost svake boje.

Hipoteze vezane uz izražavanje emocija (H1):

H1.1: Očekujemo razlike u izražavanju pozitivnih emocija bojama prema spolu; djevojčice će birati tople boje češće nego dječaci.

H1.2: Očekujemo razlike u izražavanju pozitivnih emocija bojama u skladu s prosječnim godišnjim ocjenama; učenici s višim prosječnim ocjenama odabrat će tople boje češće nego učenici s nižim prosjekom.

H1.3: Ne očekujemo razlike u izražavanju negativnih emocija bojama prema spolu; dječaci i djevojčice odabrat će hladne boje i crnu ili bijelu (neutralne boje).

H1.4: Ne očekujemo razlike u izražavanju negativnih emocija bojama s obzirom na prosječnu godišnju ocjenu; djevojčice i dječaci s visokim i niskim prosjekom odabrat će hladne boje i crnu ili bijelu (neutralne boje).

Hipoteze koje se odnose na popularnost boja (H2):

H2.1: Očekujemo razlike u izboru omiljene boje prema spolu; djevojčice će izabrati tople boje češće nego dječaci.

H2.2: Očekujemo razlike u izboru omiljene boje s obzirom na prosječnu godišnju ocjenu; učenici s višim prosjekom ocjena odabrat će tople boje češće nego učenici s nižim prosjekom.

H2.3: Očekujemo razlike u izboru boje koju učenici ne vole prema spolu; djevojčice će izabrati hladne boje i crnu češće nego dječaci.

H2.4: Očekujemo razlike u izboru boje koju učenici ne vole s obzirom na prosječnu godišnju ocjenu; učenici s višim prosjekom odabrat će hladne boje i crnu češće u usporedbi s učenicima s nižim prosjekom.

Metode istraživanja i uzorak

Tijekom istraživanja koristili smo se opisnom i neeksperimentalnom metodom empirijskog pedagoškog istraživanja kao primarnom metodom istraživanja. Uzorak istraživanja čine 323 učenika četvrtih razreda osnovne škole i definiran je na razini upotrebe inferencijalne statistike kao jednostavan slučajni uzorak iz hipotetske populacije.

Postupci prikupljanja i obrade podataka

Podatci su prikupljeni tijekom školske godine 2010./11. Učenici su testirani s pomoću Lüscherova testa (Lüscher, 1989) i modificiranog „popisa”, koji je uključivao pitanja vezana uz boje i različita emocionalna stanja (Huang, 2008). Učenici su rješavali test pojedinačno i bez vođenja. Svi su učenici dobili jedinstvenu nedvosmisleni uputu i identične instrumente (Kolar, 2012).

Popis boja i emocija sastoji se od različitih izjava koje uključuju osnovne emocije i tople, hladne i neutralne boje, koje su učenici morali povezati s određenom emocijom i napisati razlog svog izbora (jedna boja za jednu emociju). Učenici su trebali odrediti svoju omiljenu boju i boju koja im se ne sviđa. Na taj su način imali potpuno slobodan izbor. Popis je djelomično sažet prema Huang (2008) i organiziran prema Plutchikovoj teoriji emocija, koja razlikuje pozitivne od negativnih emocija (Musek i Pečjak, 1997).

Lüscherov se test sastoji od osam obojanih kartica (četiri nijanse žute koje izražavaju očekivanja vezana uz budućnost i četiri nijanse zelene za analizu samopoštovanja). Zadatak učenika bio je poredati obojene kartice na bijeloj podlozi počevši od boje koju najviše vole do one koja im se najmanje sviđa (s lijeva na desno). Na taj su

način najprije klasificirali zelene kartice, a potom žute. Nakon klasifikacije, obojene su kartice okrenute na stražnju stranu na kojoj su bili napisani brojevi od jedan do četiri. Lüscher (1989) u svom radu opisuje važnost individualnog poretka obojenih karata s obzirom na samopoštovanje i očekivanja od budućnosti (tipična obilježja). Istodobno, redosljed obojenih kartica također otkriva jesu li učenici pod stresom i skloni konfliktnim situacijama, što se označava odsustvom ili prisustvom zvjezdice (*). Izostanak zvjezdica znači emocionalnu stabilnost (nema tendencija prema konfrontaciji), jedna zvjezdica (*) pokazuje tendenciju prema sukobu, a dvije i tri zvjezdice (**, ***) otkrivaju konfliktnu osobnost (Duh i Kolar, 2012).

Rezultati

Odnos između osnovnih pozitivnih i negativnih emocija i boja

U nastavku ćemo predstaviti rezultate testova s pomoću kojih smo proučavali odnos između osnovnih emocija i boja koje učenici preferiraju/ne vole.

Tablica 1.

Rezultati χ^2 -testa (tablica 2) pokazuju postojanje statistički značajne razlike između dječaka i djevojčica u izražavanju pozitivnih emocija bojama u tri slučaja. Analiza varijable *radost* pokazuje da su djevojčice češće izabrale tople boje (žuta, narančasta i crvena). Značajna je razlika uglavnom utvrđena kod žute i crvene boje. Analizom omjera odabranih hladnih boja, uočavamo da su se dječaci u velikoj mjeri opredijelili za plavu i zelenu, dok su djevojčice radije izabrale ljubičastu. Razlika je također utvrđena kod izbora crne boje, koju nije odabrala ni jedna djevojčica, ali se pojavila u izboru nekolicine dječaka. Kada je u pitanju pohvala od nastavnika, koja se shvaća kao osjećaj prihvaćanja, još jednom su djevojčice te koje su pokazale veće zanimanje za tople boje, posebno žutu i crvenu, a narančasta je jedina boja koju je odabralo više dječaka nego djevojčica. Djevojčice su izabrale žutu jer su sretni i ponosni na sebe kada ih nastavnici hvale; žuta ih podsjeća na sjajno sunce, ponos, sreću, radost. One vjeruju da je to sretna i živa boja. Crvenu također doživljavaju kao vedru boju, podsjeća ih na srce koje kuca brže kada nas netko pohvali i crvene obraze kad pocrvenimo u licu. Dječaci vole narančastu, jer je topla, svijetla i živa boja. Oni je povezuju s ponosom i zadovoljstvom koje osjećate kada vas nastavnik pohvali. Prilikom izbora hladnih boja, situacija je obrnuta jer je više dječaka nego djevojčica izabralo plavu i zelenu boju. Oni povezuju obje boje, kao i narančastu, s ponosom i zadovoljstvom, ali također vjeruju da su obje sretni boje. Zelena je nekima od učenika omiljena boja; podsjeća ih na prirodu, koju vole. Kada učenici očekuju dar, imamo iste rezultate kao u prethodno navedena dva slučaja. Djevojčice su izabrale žutu i crvenu češće nego dječaci, a dječaci su češće izabrali narančastu kao toplu boju. Djevojčice i dječaci izabrali su te boje jer ih povezuju s ugodnim emocijama i poklonima koji dolaze zamotani u tim bojama. Među hladnim bojama dječaci su češće izabrali plavu i zelenu, a djevojčice više vole ljubičastu. Kada očekuju dar, dječaci se osjećaju uzbuđeni,

uznemireni, a boje koje najbolje opisuju te osjećaje, prema njihovu su mišljenju plava i zelena. One ih podsjećaju na more, prirodu i darove zamotane u papir plave ili zelene boje. Razlika između djevojčica i dječaka također je utvrđena s obzirom na izbor crne boje, koju je izabralo više dječaka, jer je vole ili je povezuju sa znatiželjom.

Uspoređujući prosječne godišnje ocjene, statistički se značajna razlika pojavljuje samo kada učenici očekuju dar ($\chi^2 = 17,712$, $P = 0,013$). Oni koji imaju veći prosjek ocjena, češće su izabrali zelenu (19,2 %) i ljubičastu boju (12,7 %) od onih s nižim prosjekom ocjena na godišnjem testu. Potonji su u nešto većem postotku (21,8 %) izabrali plavu u odnosu na one sa svim ili uglavnom izvrsnim ocjenama. Gledajući boje kod kojih se opisane razlike pojavljuju, vidjet ćemo da se sve tri hladne boje ističu. Inače, najveći postotak pojavljuje se kod žute, ali razlika između te dvije skupine nije vrlo očita ni velika.

Tablica 2.

Rezultati χ^2 -testa ($\chi^2 = 15,870$, $p = 0,026$) (tablica 3) pokazuju da je statistički značajna razlika prema spolu utvrđena samo u slučaju varijable *ljutnja*. U izboru hladnih boja vidimo da su djevojčice izabrale plavu (6,7 %) i zelenu (8,7 %), kao i crnu (44,3 %) češće nego dječaci. Dječaci češće povezuju bijes s crvenom (33,3 %) i bijelom (7,5 %). Plava podsjeća djevojčice na more, valove i ljutnju, ali je također jedna od boja za koju su djevojčice pokazale antipatiju. Isto vrijedi i za zelenu i crnu boju. Djevojčice vjeruju da je crna tužna boja; podsjeća ih na bijes i užas. Kada smo ljuti imamo, prema mišljenju djevojčica, crne misli. Crvena dječake podsjeća na vatru, pakao i bijesnog bika. Kada smo ljuti, također se crvenimo. Bijela boja asociira na duhove i munje u oluji.

Popularne i nepopularne boje prema mišljenju učenika

Niži rezultati pokazuju razlike među učenicima u izboru njihove omiljene boje i boje koje ne vole.

Tablica 3.

Rezultati su potvrdili razlike između dječaka i djevojčica s obzirom na izbor njihove omiljene boje. Djevojčice vole ljubičastu (20,1 %), dok dječaci vole plavu (25,9 %). Razlozi za izbor obje boje se razlikuju. Djevojčice jednostavno vole ljubičastu; one vjeruju da je živa i svijetla. Iako je ljubičasta, ili grimizna, zapravo mješavina crvene i plave boje, odnosno boja pomiješanih osjećaja, neizvjesnosti i neobjektivnosti, ona donosi mir i pomaže u prevladavanju straha (Kovačev, 1997), potiče kreativnost, donosi inspiraciju, senzualnost i duhovnost (Chiazzari, 2000). Ljubičasta se uz ružičastu i crvenu stereotipno pripisuje djevojčicama, pa je čak i same djevojčice pripisuju ženskom spolu u nizu istraživanja (npr. Picariello i sur., 1990; Radeloff, 1990; Trstenjak, 1996; Jadv, Hines i Golombok, 2010). Rezultati također pokazuju da su ostale hladne boje i crvena popularne kod djevojčica. Mogući razlozi mogu se tražiti u aktualnim trendovima vezanima uz boje, prema kojima je ljubičasta i dalje vrlo popularna. Zanimljivo je da su sve tri hladne boje i topla crvena također popularne među dječacima. Plava boja je najčešće izabrana, jer im se sviđa, smatraju

je bojom neba i također ih podsjeća na nebo. Neki su uzbuđeni zbog mora i zbog toga im je plava omiljena boja. Također, to je njihova sretna boja i po njihovu mišljenju, najprirodnija. Plava se smatra tipično muškom bojom i stoga je najčešće izabrana, kao što se može uočiti u spomenutim istraživanjima. Kada govorimo o bojama koje se učenicima ne sviđaju, crna je najmanje popularna i kod djevojčica i kod dječaka. Postotak djevojčica kojima se crna boja ne sviđa značajno je viši od postotka dječaka. Djevojčice vjeruju da je crna tužna i dosadna; ne vole je, jer je tamna; podsjeća ih na ljutnju, tugu, groznicu; trebala bi biti boja smrti. Siva i smeđa su također boje koje djevojčice ne vole. Osim crne dječaci ne vole ružičastu boju; kažu da je to boja za djevojčice; bezvrijedna je i ružna. Međutim, ružičasta nije osobito popularna ni kod djevojčica, no još uvijek je veći postotak dječaka koji je ne vole. Ljubičastu su kao boju koja im se ne sviđa također češće birali dječaci. Razlozi za odabir isti su kao i za ružičastu boju (stereotipno određivanje boje prema spolu).

Tablica 2 pokazuje da postoji statistički značajna razlika između učenika s obzirom na prosječne godišnje ocjene. Kod omiljenih boja učenici s najvišim prosjekom izabrali su u najvećem postotku zelenu (20,7 %), ali su također izabrali zelenu boju češće nego učenici s nižim prosjekom ocjena. Osim njezinih pozitivnih osobina može se također zaključiti da emocionalna povezanost sa zelenom bojom nije uvijek ugodna, jer može izazvati osjećaj depresije i ostale negativne osjećaje (Kovačev, 1997; Chiazzari, 2000) koji ne moraju biti specifični za učenike s višim ocjenama, a za koje se pretpostavlja da imaju više samopoštovanja; međutim, to nije uvijek tako (Magajna i Horvat, 1989; Jurišević, 1999a; 1999b). Učenici s nižim prosjekom ocjena izabrali su plavu boju u znatno većem postotku (30,9 %) od učenika s višim prosjekom. Postotak učenika s nižim prosjekom koji su također odabrali crvenu i ljubičastu boju bio je niži od postotka učenika s višim prosjekom. Rezultati pokazuju da su među odabranim bojama tri hladne boje među prvima, a među toplim je bojama samo crvena. Razlika između učenika s višim prosjekom i onih s nižim u izboru boje koja im se ne sviđa statistički je značajna ($\chi^2 = 23,437$, $P = 0,037$). Među učenicima s višim prosjekom zelena i smeđa manje su popularne nego među učenicima s nižim prosjekom. Razlozi takvih rezultata mogu se naći u svojstvima koja se pripisuju svakoj boji, jer emocionalne asocijacije uz zelenu nisu uvijek najbolje, one često idu u smjeru depresije i negativnih osjećaja (Kovačev, 1997; Chiazzari, 2000). Smeđa boja znači potiskivanje emocija, bježanje od vanjskog svijeta i strah od emocija, što je povezano s nedostatkom samopoštovanja i samopouzdanja (Chiazzari, 2000). Nadalje, većina je učenika odabrala crnu, koja uglavnom nije omiljena među učenicima s nižim prosjekom. Više od trećine tih učenika odabralo je crnu boju. Uz crnu, također su izabrali ljubičastu (12,7 %). Obje boje izazivaju neugodne emocije u nama: neizvjesnost, tugu itd. (Chiazzari, 2000).

Emocionalna stabilnost učenika

U nastavku ćemo predstaviti rezultate testova s pomoću kojih smo proučavali odnos između izražavanja emocija bojama i emocionalne stabilnosti izražene bojama.

Tablica 4.

Tablica 4 pokazuje da u slučaju samopoštovanja više od polovine učenika pokazuje sklonost sukobima ili ima nešto lošiju sliku o sebi. Dakle, razmišljanje o sebi ili sama ideja o sebi predstavlja teret za većinu učenika. Gotovo 44 % učenika nije opterećeno svojim samopoštovanjem ili ima pozitivno mišljenje o sebi. U uzorku imamo najmanji broj učenika koji pokazuju konfliktnu osobnost, što je vrlo pozitivan rezultat. Više od polovine učenika pokazuje sklonost sukobima s obzirom na očekivanja od budućnosti; istodobno, razmišljanje o tome predstavlja određenu razinu stresa i opterećenje za učenike. Emocionalna je stabilnost utvrđena kod 37,5 % učenika, što znači da oni nemaju konfliktne osobnosti ili neki psihološki teret. Samo oko 12 % učenika prilično je opterećeno problemima. Pozitivna je činjenica da su konfliktne osobnosti prisutne u najnižem postotku.

Ukratko, mislimo da su učenička razmišljanja o budućnosti za njih daleko veći teret nego samopoštovanje. Gotovo 12 % učenika sklono je sukobu kada su u pitanju očekivanja od budućnosti, a u pogledu samopoštovanja njih samo 5 %. Slijedom toga, možemo reći kako je više učenika koji nisu opterećeni svojim samopoštovanjem u odnosu na one koji pesimistično gledaju na budućnost.

Najčešća obilježja učenika s obzirom na samopoštovanje i očekivanja od budućnosti

U nastavku se daje prikaz najčešćih obilježja učenika s obzirom na samopoštovanje i očekivanja od budućnosti. Postotci učenika prema pojedinim obilježjima uzeti su iz tablice 3; opisana su obilježja sažeta prema Lüscher (1989) i ovise o učeničkoj klasifikaciji obojenih kartica (zelene i žute nijanse). Prisutnost ili odsutnost * pokazuje jesu li učenici pod stresom i sklono sukobu ili navedena obilježja kod učenika nisu utvrđena (Duh i Kolar, 2012, str. 91-92).

Tablica 5.

a) Samopoštovanje

Opisi predstavljeni u nastavku daju uvid u sliku koju učenici imaju o sebi, a ujedno i iskaz njihove želje da budu ono što žele (Duh i Kolar, 2012).

Sljedeći opis može se primijeniti na otprilike trećinu (33,4 %) učenika:

„Osoba vjeruje da u konfliktnoj situaciji ne postoje preduvjeti za zadovoljavajući osjećaj udobnosti. On/ona se ne želi pomiriti s nesretnom mogućnošću kompromisa, ali istodobno ne zna kako riješiti probleme koji ga/ju opterećuju. Stoga želi ukloniti tu uzbudljivu i klaustrofobičnu napetost. On/ona je u potrazi za prilikama da mijenja odnos i na taj se način oslobodi pritiska koji ga/ju opterećuje. Očekivano, zainteresiran/a je za poticanje kontakata, jer su nove mogućnosti ujedno preduvjet za traženje najjednostavnijeg rješenja.”*

Sljedeći je opis karakterističan za 14,6 % učenika:

„Osoba misli da drugi ljudi ne poštuju slobodno izražene želje i mišljenja. Želi odgnurnuti probleme na stranu kako ne bi bio/bila opterećen/a unutarnjom

napetošću. Očekivano je otvoren/a i vrlo zainteresiran/a u odnosima koji ga/ju ne opterećuju i koji predstavljaju poticajne kontakte.”

Zaključci koji slijede mogu se primijeniti na gotovo 12 posto (11,8 %) učenika:

„Osoba vjeruje da joj situacija i njezini zahtjevi ne dopuštaju da bude popustljiviji/a prema nezadovoljavajućim uvjetima. Želi biti profilirana osobnost. Zahtijeva da drugi na odgovarajući način poštuju posebne stavove i njihovu provedbu. To donosi osobne probleme. On/ona želi odgurnuti unutarnje tenzije na stranu i odvratiti si pažnju. Pokazuje zanimanje za odnose koji ne opterećuju, već predstavljaju poticajne kontakte, jer su nove veze naizgled najjednostavnije rješenje.”

Karakteristike opisane u nastavku mogu se pripisati 9,3 % učenika:

„Osoba je u potrazi za sredstvima i načinima koji bi omogućili bavljenje specifičnim, neriješenim osobnim problemima. Želi gurnuti unutarnje napetosti u stranu, kako ga/ju ne bi ograničavale. Izrazito je zainteresiran/a za nove odnose koji ne uzrokuju opterećenje, kao i za uspostavljanje šarmantnih stimulativnih kontakata.”*

U smislu samopoštovanja, a ujedno i želje kojom učenici izražavaju što zapravo žele biti, kod gotovo trećine učenika primijećen je osjećaj svojevrsnog pritiska koji ih opterećuje. Dakle, oni traže načine kako se riješiti stresa, a rješenje vide u poticajnim i novim mogućnostima. Kod tih je učenika karakteristična i sklonost prema sukobima. Gotovo 15 % učenika opterećeno je mislju da drugi ljudi neće odobriti želje i stavove koje bi učenici htjeli slobodno izraziti. S druge strane, otvoreni su i žele eliminirati unutarnje napetosti. Potonje je također karakteristično za nešto niži postotak učenika zainteresiranih za nove opuštene odnose i vanjske poticaje koji bi trebali predstavljati rješenje problema. Sklonost prema konfliktima uočava se i kod nešto manje od 10 % učenika koji imaju neriješene osobne probleme i osjećaju unutarnju napetost. Ti učenici pokazuju zanimanje za nove kontakte i odnose koji ne uzrokuju opterećenje i stres. Vidi se da većina učenika osjeća da je pod pritiskom i da pridaje važnu ulogu mišljenju drugih ljudi. To je također jedan od brojnih čimbenika koji mogu utjecati na razvoj samopoštovanja u djetinjstvu (Kobal, 2000). Teško je reći imaju li učenici pozitivno ili negativno samopoštovanje, ali se može reći da samopoštovanje također može utjecati na izbor aktivnosti u školi i na odnose s vršnjacima i odraslima (Magajna i Horvat, 1989).

b) Očekivanja za budućnost

Rezultati prikazani u nastavku otkrivaju očekivanja koja učenici imaju od budućnosti (Duh i Kolar, 2012).

Slijedeće su karakteristike uočene kod najvećeg postotka (38,1 %) učenika:

„Osoba bi radije pobjegla od trenutne, nepovoljne situacije. Nada se da će pronaći željeno oslobađajuće rješenje u novim i boljim uvjetima. Nakon rješavanja ranjivosti, želi razvijati nove odnose i moguća iskustva.”*

Za više od 16 posto (16,4 %) učenika utvrđeno je sljedeće:

„Osoba je vrlo zainteresirana i otvorena za ono što bi se trebalo dogoditi sada i u budućnosti. Može biti vrlo uzbuđen/a zbog zanimljivih ljudi, posebno kada doprinose razvoju njegovih/njezinih područja interesa. Voli otkrivati nove perspektive i različita iskustva i u njima uživa.”

Sljedeće se odnosi na 10,2 % učenika:

„Osoba surađuje s bližnjima i okolinom sa zanimanjem i otvoreno. Živi u sadašnjosti i nije opterećen/a udaljenošću i nepovjerenjem, otvoren/a je i sposoban/a osjećati entuzijizam. Također je sposoban/a za neposredni topli kontakt. Otvoren/a je, ima nepristran stav i odmah je spreman/a za suradnju. Veseli se ugodnim iskustvima i uživa u senzualnosti.”

Na temelju prethodnih objašnjenja može se zaključiti, prije svega, da više od 38 % učenika pokazuje sklonosti prema sukobu (od oko polovine učenika, vidi tablicu 4) i ima visoka **očekivanja za budućnost. Oni žele poboljšati trenutnu nepovoljnu situaciju i odnose s drugima.** Za više od 16 % učenika karakteristično je da su vrlo otvoreni i zainteresirani za upoznavanje novih, zanimljivih ljudi, kao i za otkrivanje novih iskustava. Otvorenost i zanimanje za okolinu karakterizira više od 10 % učenika. Budućnost ne predstavlja psihološki teret za njih; oni žive u sadašnjosti i osjećaju entuzijizam prema novim izazovima.

Emocionalna stabilnost kao čimbenik u izboru boja

U nastavku donosimo rezultate istraživanja razlika u izboru toplih i hladnih ili neutralnih boja i njihovu povezanost s pozitivnim i negativnim emocijama, ovisno o razini emocionalne stabilnosti ili konfliktnoj osobnosti, u smislu samopoštovanja i očekivanja od budućnosti (Duh i Kolar, 2012).

Tablica 6.

Pretpostavka o homogenosti varijance (Levene-test) opravdana je u oba slučaja. Ispitivanje razlika aritmetičkih sredina dodatno je pokazalo da u slučaju emocionalne stabilnosti, odnosno samopoštovanja, ne postoje statistički značajne razlike kod pozitivnih emocija ($\alpha = P = 0,849$), kao ni kod negativnih ($\alpha = P = 0,943$). Na temelju rezultata možemo reći da emocionalna stabilnost, izražena bojama, u smislu samopoštovanja nije čimbenik koji će dovesti do statistički značajne razlike. Treba napomenuti da je ovo kontinuirana ordinalna varijabla u kojoj, gledajući kvalitativno, razlike između kategorija nisu nedvosmislene, već se premještaju od jedne prema drugoj (Duh i Kolar, 2012).

Tablica 7.

Pretpostavka o homogenosti varijance (Levene-test) opravdana je u oba slučaja. Ispitivanje razlika aritmetičkih sredina dodatno je pokazalo da u slučaju emocionalne stabilnosti, u odnosu na očekivanja od budućnosti ne postoje statistički značajne

razlike kod pozitivnih emocija ($\alpha = P = 0,420$), kao ni kod negativnih ($\alpha = P = 0,334$). Na temelju rezultata možemo reći da emocionalna stabilnost, izražena bojama, s obzirom na očekivanja od budućnosti nije čimbenik koji će stvoriti statistički značajnu razliku. Treba napomenuti da se i u navedenom slučaju radi o kontinuiranoj ordinalnoj varijabli (Duh i Kolar, 2012).

Rasprava

Učenci uglavnom povezuju pozitivne osjećaje s toplim bojama, a negativne s hladnim bojama. Prema rezultatima, povezivanje pozitivnih emocija s toplim bojama češće je kod djevojčica, što znači da možemo potvrditi prvu hipotezu (H1.1). Očekivane razlike prema prosječnim godišnjim ocjenama u ispitivanom uzorku nisu utvrđene, što znači da druga hipoteza (H1.2) nije potvrđena. U slučaju izražavanja negativnih emocija bojama s obzirom na spol razlike nisu očekivane, ali su utvrđene za varijablu *ljutnja*, što znači da moramo odbaciti treću hipotezu (H1.3). Rezultati vezani uz prosječne godišnje ocjene također nisu u skladu s postavljenom hipotezom (H1.4). Među omiljenim bojama ljubičasta je najpopularnija kod djevojčica, a plava kod dječaka. Općenito, možemo zaključiti da su hladne boje popularnije od toplih. Rezultati su iznenađujući, jer smo očekivali da će djevojčice češće odabrati tople boje (H2.1). Budući da učenici s višom prosječnom ocjenom nisu češće birali tople boje od učenika s nižim prosjekom, hipoteza H2.2 također nije potvrđena. Razlozi za odabir već su opisani u tumačenju rezultata. Utvrđeno je da trenutni trendovi boja i uspješne sportske ekipe koje imaju karakteristične boje simbola mogu utjecati na izbor boja. Crna je boja izrazito nepopularna kod dječaka i djevojčica, bez obzira na godišnji prosjek ocjena, tako da razlika nije utvrđena, što znači da hipoteze H2.3 i H2.4 nisu potvrđene.

U ispitivanju emocionalne stabilnosti učenika, odnosno samopoštovanja, i očekivanja od budućnosti, utvrđeno je da većina učenika u uzorku pokazuje sklonosti prema sukobu s obzirom na obje varijable. Razmišljanje o tome predstavlja učenicima blagi stres. Također je utvrđeno da učenici imaju velika očekivanja vezana za budućnost. Istovremeno, žele poboljšati sadašnju zabrinjavajuću i stresnu situaciju kao i odnose s drugima. Više od trećine učenika osjeća značajan pritisak vezan uz samopoštovanje i pokazuju sklonost prema sukobu. Učenici se žele riješiti neugodnih osjećaja pri čemu se važna uloga pripisuje drugim ljudima (vršnjacima i odraslima) koji, s jedne strane, uzrokuju nelagodu, ali s druge mogu riješiti napetu situaciju. Teško je reći je li učeničko samopoštovanje pozitivno ili negativno, ali se može reći da samopoštovanje može utjecati na izbor aktivnosti u školi i na odnose s drugima. Rezultati istraživanja emocionalne stabilnosti, odnosno samopoštovanja i očekivanja od budućnosti, izraženi bojama, nisu pokazali statistički značajne razlike. Do istih se zaključaka došlo u vezi s izražavanjem pozitivnih emocija toplim bojama (s obzirom na učeničko samopoštovanje i očekivanja od budućnosti) i izražavanje negativnih emocija hladnim ili neutralnim bojama.

Zaključci

Uvidom u rezultate istraživanja možemo povući paralele s teorijskim pozicijama koje su predstavljene na početku ovoga rada i u našim prethodnim istraživanjima (Duh i Kolar, 2011; 2012). Važno je naglasiti da ne možemo zanemariti činjenicu da korelacija boja i negativnih ili pozitivnih emocija također ovisi o iskustvu koje učenici imaju s određenom bojom i o njihovoj subjektivnoj estetskoj prosudbi. Oba su aspekta važna za određivanje hoće li učenici neku boju doživjeti kao pozitivnu ili negativnu. Schuster (2000, str. 46) navodi da je „povezanost određena smislenim vezama u kojima se pojavljuje svaka boja. Stoga ne možemo odvojiti učinak boje od te semantičke veze”. Nastavnici će lakše razumjeti odnos učenika prema različitim bojama samo ako razumiju njihove sklonosti prema određenoj boji i njihovu svjesnu uporabu boja u umjetničkom izražavanju. Dobri pokazatelji osobne sklonosti prema određenoj boji i povezanih (osnovnih i/ili složenih) osjećaja mogu biti i osnovni vizualni zadatci s fantastičnim motivima i slobodnim izborom boja. Taj se princip odnosi jednako i na djecu i adolescente.

Teorijski uvid u područje i rezultati istraživanja mogu ponuditi osnovnoškolskim nastavnicima veću svijest o važnosti boja u nastavi likovne kulture i emocionalnim doživljajima učenika. Oni također mogu pružiti jasniju sliku o ulozi boja u identifikaciji individualnih emocija. Rezultati mogu pomoći nastavnicima u planiranju odgojno-obrazovnih aktivnosti, kao i u interpretaciji učeničkih radova. Izbor boja u učeničkim likovnim radovima može otkriti njihovu emocionalnu percepciju. Međutim, nužan je oprez prilikom analize učeničkih radova, jer primjerice upotreba hladne ili crne boje ne znači automatski nešto negativno. Također, stereotipno pripisivanje upotrebe boja, kao i nastavničko favoriziranje boja prema spolu učenika ne bi smjelo biti prisutno u razredu, jer su rezultati na ispitanom uzorku učenika pokazali da ti stereotipi danas više ne vrijede. Učenici mogu jednostavno voljeti neke boje više od drugih, što dovodi do češće upotrebe upravo tih boja. Na temelju teorijskih spoznaja i rezultata istraživanja zaključujemo da u području boja i emocija ostaje otvorena mogućnost za daljnja istraživanja i primjenjivost u školskoj praksi. Obradena teorijska polazišta i dobiveni rezultati istraživanja svakako su dobrodošli, kako nastavnicima tako i učenicima, budući da se dobivene spoznaje mogu svaki put iznova provjeriti u praksi.