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The Ability to Experience Mixed Emotions in Children Aged 5 to 10 Years*

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The main aim of this study was to examine children's ability to verbally report experiencing allocentric mixed emotions in 60 children aged 5 to 10 years from three age groups – preschool, second and fourth grade. Five short video-clips from the animated movie "Dumbo", in which the protagonist experiences mixed emotions, were used as a stimulus in the study, followed by an interview with the children, while their parents completed the Empathy Quotient questionnaire to assess the child's empathy. The results showed a developmental progression in children's ability to experience mixed emotions – the fourth-grade students were shown to be more successful compared to the two younger groups. Age was a statistically significant predictor of experiencing mixed emotions, whereas empathy was not. Gender differences in experiencing mixed emotions were not found, but there was a difference in the dynamics of the development of this ability between the genders. Findings were interpreted from a developmental-cognitive perspective, according to which the ability to integrate opposite valence emotions, as two conceptually different representation sets, develops with age.

Keywords: emotional development; mixed emotions; empathy; children

Highlights:

- Experiencing mixed emotions develops gradually in children aged 5 to 10 years.
- The understanding of mixed emotions precedes their experience.
- The development path of experiencing mixed emotions is different for boys and girls.

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Typically, emotions are defined within two broad categories – positive or negative. Positive emotions refer to the experience of pleasant psychological states such as cheerfulness, alertness, and confidence, whereas negative emotions refer to the experience of unpleasant psychological states such as anger, sadness, and fear (e.g., Eby et al., 2010). However, sometimes we are not able to make such a clear distinction given that certain life situations can evoke both positive and negative emotions at the same time, then we talk about mixed emotions – the concurrent existence of two opposite-valence emotions in relation to one object (e.g., Smith et al., 2015). Awareness and understanding of emotions and perception of one's emotional life in an adequate and realistic way are important aspects of a person's psycho-social functioning (e.g., Sprung et al., 2015). Sprung et al. (2015) stated that a timely and correct assessment of one's own and the other person's own emotional state are some of the important preconditions for the formation of successful social relations, but also better understanding of one's mental state. The experience of mixed emotions has positive effects on psychological well-being, too, contributing to the perception of one's own life as meaningful and in line with significant goals and values (Berrios et al., 2017). Larsen et al. (2003; as cited in Berrios et al., 2017) considered that the mixed emotions can facilitate problem solving and finding meaning in a stressful situation, while Berrios et al. (2015a) emphasized that mixed emotions may contribute to an integration of complex information by helping a person to establish equilibrium in a situation of facing different goals. The fact that mixed emotions are more likely to occur in emotionally negative events than positive ones (Larsen et al., 2003; as cited in Hui et al., 2009) also has significant implications. One explanation is that in this way a person fights with negative emotions by focusing on the positive aspects of the situation, indicating that mixed feelings carry self-affirmation motives. It is also interesting to point out that non-dialectical thinkers experience more mixed emotions in negative than positive events, while dialectical thinkers experience comparable levels of mixed emotions in both types of events (dialectical thinking refers to the ability to tolerate contradictory or ambivalent beliefs; Hui et al., 2009). Hui et al. (2009) also suggested that dialectical thinkers generally tend to consider both the positive and negative aspects of each object or situation which consequently evokes positive and negative emotions.

As we mentioned above, mixed emotions refer to the concurrent existence of two opposite-valence emotions in relation to one object (e.g., Smith et al., 2015). However, there is disagreement among researchers as to whether the emotions of different valences can occur simultaneously or occur successively. For instance, according to the Circumplex Model (CM; Russell & Carroll, 1999) polar opposite emotions are mutually exclusive. This view stems from the understanding of emotions located in a psychological space defined by two bipolar and orthogonal dimensions: valence (e.g., pleasantness – unpleasantness) and activation (e.g., level of arousal; Russell, 1980; Russell & Carroll, 1999). From this perspective, as the valence dimension is bivariate, two emotions

opposite in their valence, such as happiness and sadness can be felt only sequentially, but not simultaneously. On the other hand, Cacioppo and Berntson (1994) suggested that separate neurological processes underlie positive affect and negative affect (the Evaluative Space Model), indicating that any pair of opposite valence emotions can co-occur (e.g., Burkitt et al., 2017; Burkitt et al., 2019). In line with that, since the two dimensions are separate, two opposite emotions such as happiness (positive) and sadness (negative) can be felt either sequentially or simultaneously, depending on the situation. It would be also interesting to mention Berrios et al. (2017) stated that although some authors criticize that measuring mixed emotions does not guarantee that two opposite emotions are actually occurring at the very same time, a crucial component of mixed emotions is whether or not people identified two emotions of opposite valence as co-occurring emphasizing the subjective experience of mixed emotions.

The ability to understand and experience mixed emotions is present in adults and as well in adolescents (Berrios et al., 2015b; Carrera & Oceja, 2007; Schneider & Stone, 2015). However, when it comes to children, research has indicated that it is a gradual developmental process, with more significant development of this ability occurring during the early and middle childhood period (Larsen et al., 2001; Larsen et al., 2007; Zajdel et al., 2013). Even though understanding and experience of allocentric mixed emotions – emotions elicited by another person's emotional experience (Zajdel et al., 2013) – can be noticed early in development in four-years-olds (Smith et al., 2015), previous research (Donalds & Weterman, 1986; Harter & Buddin, 1987; Larsen et al., 2007; Smith et al., 2015; Zajdel et al., 2013) has consistently shown that older children more often report understanding and experiencing complex and mixed emotions then younger children.

Namely, perceived through the model offered by Pons et al. (2004), the understanding of mixed emotions belongs only to the third, *reflexive level*, which also includes the understanding of the regulation of emotions and the understanding of moral emotions. The previous two levels are: *external*, which includes understanding the expression of emotions, external or situational causes of emotions, and understanding the influence of external reminders; and *mental* that encompasses the role of desire, belief, and hidden emotions. In their conclusion authors stated that "the child's understanding is organized in a hierarchical fashion, with the earlier mode of understanding being a necessary if not a sufficient condition for the emergence of later modes" (Pons et al., p. 148).

The development of understanding and experiencing mixed emotions cannot be properly addressed without taking into account the development of children's cognitive abilities. Up to 7 or 8 years old, children rely mainly on one aspect, i.e., dimension of the situation (Piaget, 1952; as cited by Albanese et al., 2010), and only with the appearance of decentralization are children able to take into account several dimensions simultaneously. According to Piaget's theory (1965; as cited by Harter & Buddin, 1987) it can be expected that younger children will have difficulty integrating two emotions, especially if

they are of opposite valences. Two emotions of opposite valence (e.g., positive and negative) represent two conceptually different representational sets and, therefore, they are more difficult to integrate in relation to two emotions of the same valence that are from the same representational set. However, although younger children perhaps have not yet developed cognitive ability to understand mixed emotions, they may have the affective ability to experience them (Harter & Buddin, 1987; Zajdel et al., 2013). Pioneers in this field, Harter and Buddin (1987), in their study with children aged 4 to 12, found that denial of existence of simultaneous emotions was more present in younger children ("There is no way you could have two feelings at the same time since you only have one mind!", Harter & Buddin, 1987, p. 398). Children aged around 11 were able to describe coherently how the same object could provoke two opposite valence emotions. The study of Kestenbaum and Gelman (1995) also provided interesting results: both 4- and 5-year-olds can identify mixed emotions, but only 5-year-olds can acknowledge their expression in appropriate situations (link them to appropriate scenarios), indicating developmental change between ages 4 and 5. Children showed superior performance on the two-headed aliens (vs. the one-headed people) visual stimuli, possibly because subjects were helped by the fact that the two-headed aliens enabled a conceptual distinction between the two emotions consistent with the kinds of spontaneous justifications children provide when asked why mixed emotions cannot (normally) be experienced (e.g., Harris, 1983; Harter & Buddin, 1987). No effects of gender were found. These results (Kestenbaum & Gelman, 1995) also indicated that younger children are more successful in identifying mixed emotions when provided with visual stimuli of facial expressions vs. only verbal labels.

Furthermore, differences in the dynamics of the development of understanding and experiencing mixed feelings can be noticed. For example, Zajdel et al. (2013) showed that children in all age groups (5–7, 8–9, 10–12 years) manifest understanding of mixed emotions, although the largest difference was between the youngest and the oldest group of children. On the other hand, most of the children in the youngest group (5–7) did not report experiencing mixed emotions, whereas children in older groups (8–9, 10–12 years) did. More precisely, most of 9-year-olds reported the experience of mixed emotions (Zajdel et al., 2013). According to that it seems that understanding of allocentric mixed emotions precedes experiencing of mixed emotions i.e., that children first understand the emotional condition of another person and only latter experience allocentric mixed emotions. Overview of literature gives few explanations of how to understand developmental paths. Smith et al. (2015) assumed that children find it easier to understand and accept conflicting emotions of others, rather than their own. More precisely, it might be that children experience mixed emotions, but that they eliminate cognitive dissonance opting for the more dominant emotion. Their explanation relies on the previous research (Dennis et al., 2009; as cited by Smith et al., 2015) that showed that if a child is experiencing sadness it would tend to distract itself from the situation or the event that evokes negative emotions, which is primarily characteristic for younger children. On the other

hand, in the study done by Roberts and Strayer (1996), authors recognized that older children, even in situations where there are nonverbal signs of negative emotions, mostly do not report them. It seems that, during the socialization process, children gradually learn emotional self-regulation skills, inter alia that it is socially acceptable to express positive emotions, but not negative ones. Somewhat different findings in relation to age were shown in a study by Burkitt et al. (2017), in which older children (aged 6 and 7 years) in the self-condition situation graphed more prevalent types of mixed emotions (both emotions are enduring but one is of a higher intensity and the other of a much lower intensity) than younger children, indicating that maybe the experience of mixed emotional prevalence is harder to detect in other people than in oneself whereby older children easier recognize prevalent types of mixed emotions in oneself than in others.

It can be assumed that some children can, to a certain extent, simultaneously experience opposite valence emotions without clear awareness and understanding why they are experiencing them, and as a consequence they are not able to verbalize them (Widen & Russell, 2008). In line with that is the statement of Harter and Buddin (1987) that understanding and experiencing mixed emotions did not have to be synchronized in development, so that children can experience mixed emotions at the same time, but they cannot reconstruct that phenomenon cognitively. Somewhat similar explanation was given by Zajdel et al. (2013) assuming that the ability to experience allocentric mixed emotions requires cognitive-emotional abilities that occur only later in development. However, there are also authors (Zajdel et al., 2013) who believe that it is possible that the presented stimulus is not sufficiently stimulating to arouse mixed emotions in children. Namely, application of allocentric design, and only one stimulus also, may limit children in manifesting the ability to experience mixed emotions.

Somewhat different explanation was given by Larsen et al. (2007) who hypothesized that empathy could be a mediator between children's age and the ability to experience mixed emotions. Empathy is usually defined as the process in which an individual vicariously feels other person's emotional state (i.e., emotional empathy), as well as the ability to recognize what other person thinks or feels (i.e., cognitive empathy), and to react to their thoughts and feelings with appropriate feelings (Baron-Cohen, 2011; Hoffman, 2008). Cognitive empathy is also sometimes referred to as the theory of mind or the perspective taking state (McDonald & Messinger, 2011). Children may experience emotional empathy in some form as early as in infancy and toddlerhood (McDonald & Messinger, 2011), and by the third year of life, children manifest a variety of empathy related behaviors e.g., expressing verbal and facial concern and interest in another's distress, engage in a variety of helping behaviors. Significant development changes, particularly when it comes to the cognitive aspect of empathy, could be noticed as children enter the preschool and elementary school years. One reason could be increasing language capacities of children that facilitate empathic reflection, as well as significant progress in developing the theory of mind. McDonald and Messinger (2011, p. 5) indicated that the "theory

of mind helps to transform the early developing affective experience of empathy to a more sympathetic, other focused experience by more fully attaching one's empathic feelings to a conceptualization of the other's experience rather than one's own".

Since the previous research has shown that there is developmental progression in children's tendency to empathize with another person between preschool and older school age (e.g., Eisenberg et al., 2006), empathy might have an important role in children's experience of allocentric emotions. Further, design of the research of mixed emotions is allocentric, so it is possible that younger children are able to experience mixed emotions, but they lack the ability to empathize with the protagonist. Zajdel et al. (2013) tested this hypothesis, and that study showed that empathy was a significant partial mediator in the relation between age and statements on experiencing mixed emotions, but not between understanding mixed emotions and children's age.

Various authors were also interested in gender differences in the experience of mixed emotions. A study showed that there is a linear correlation between age and mixed emotions in girls, and curvilinear in boys (Larsen et al., 2007), but also that there is interaction between gender and age regarding experience and understanding of mixed emotions. For example, in the younger group of children (aged 5–7) there weren't any gender differences in experience of mixed emotions (Smith et al., 2015; Zajdel et al., 2013). On the other hand, in the middle and older groups (8–9; 10–12) girls more frequently reported the experience of mixed emotions, in comparison to boys. Still, the obtained gender differences should be taken with caution due to stimuli that were used. Namely, in some studies the leading character was female (Little Mermaid; Larsen et al., 2007), and in others it was male (Robot Rodni; Zajdel et al., 2013), leading to the question of whether the cartoon was interesting enough and emotionally attractive for children of both genders. In order to better understand gender differences in experience of mixed emotions it is of special importance to replicate previous studies using stimuli that are more gender neutral (e.g., cartoons with animals).

Although a number of studies already mentioned (Larsen et al., 2007; Smith et al., 2015; Zajdel et al., 2013) used interviews as the method of studying mixed emotions, we should also mention the possibility of graphically representing mixed emotions using the Analogical Emotion Scale (AES; Carrera & Oceja, 2007), where respondents are expected to represent two emotions on the same graph using two axes, with one axis represents emotion intensity and the other emotion duration. In the adult sample Carrera and Oceja (2007) identified four patterns of mixed emotion experience: the sequential pattern (where one emotion is present but then replaced by a second emotion); the prevalence pattern (both emotions are enduring but one is of a higher intensity while the other of a much lower intensity); an inverse pattern (both emotions are present but one increases while the other decreases over time); the highly simultaneous pattern (both emotions are present at moderate to high intensity with one slightly higher in intensity than the other throughout the experience). This method was successfully applied in the sample of adolescents (Burkitt et al., 2019), and children aged 5

to 7 years old as well (Burkitt et al., 2017). The study by Burkitt et al. (2017) is particularly significant because the authors used the interview and AES, which enabled a comparison of the results obtained by different methods. The two ways that the subjective mixed emotion experiences were measured revealed significantly different response frequencies for two types of mixed emotions in a way that more prevalent emotion types were graphed (32%) than reported (18%) and more inverse emotion types were reported (34%) than graphed (21%). In addition, the younger age group reported and graphed more single and sequential mixed emotion experiences than the older group, and the older group reported and graphed more prevalence (in the self-condition), inverse, and highly simultaneous experiences. Thus, the graphical method demonstrated to be a significant additional source of data in order to better understand mixed emotions in children. This study (Burkitt et al., 2017) showed that the verbal ability predicted overall mixed emotion reports but not graphed responses, suggesting that AES graph measure may be less demanding for children aged 5 to 7 years. In addition to verbal skills, an important role when it comes to experience of mixed emotions can have the theory of mind (De Rosnay et al., 2014), which showed to be a significant predictor of emotional development perceived through the model of Pons et al. (2004). Memory could also have an important role when it comes to mixed emotions given that it has been shown that in adults it becomes ever harder to recall the mixed emotions as the time passes (memory for them fades), whereby an important role has the feeling of conflict associated with the experience of mixed emotions (Aaker et al., 2008).

Having in mind that until now there have been only a few studies that applied the video clip visual stimulus and interview procedure (Larsen et al., 2007; Smith et al., 2015; Zajdel et al., 2013) within this very important field of children's development, it seems of great importance to conduct more research in order to better understand the development process of the experience of mixed emotions, as well as the role of empathy. Further, it would be interesting to examine gender differences in experience of mixed emotions of children using new and more neutral stimuli in relation to previous studies that would be more appropriate for both genders forming experimental situation that would be interesting enough for both boys and girls.

Previous studies (Larsen et al., 2007; Smith et. al., 2015; Zajdel et. al, 2013) were mainly conducted in the Western world. In order to verify and draw parallel with the results of previous studies it seems significant to carry out a similar study of understanding and experiencing allocentric emotions in south-eastern Europe (Serbia).

The main aim of this study is to examine children's ability to verbally report on experiencing allocentric mixed emotions at age 5 to 10 years. Specific research objectives are: a) to determine whether children's ability to understand mixed emotions precedes their ability to experience them; b) to determine whether age, gender, empathy, level of attention and content comprehension and previous experience of mixed emotions are correlated with the experience of mixed emotions, and are its' predictors; c) to determine whether empathy is a

mediator of the relationship between age and the ability to experience mixed emotions; d) to determine whether there are age and gender differences in the children's ability to experience mixed emotions; e) to determine whether there are gender differences in developmental progression of mixed emotions: f) to determine whether there is a difference between respondents who are and who have not had previous experience of mixed feelings in the ability to experience mixed emotions.

Research Hypotheses

H1: Children's ability to understand mixed emotions precedes their ability to experience them – children would be more successful at the task of understanding of mixed emotions than in the task of experiencing them; H2: Age, gender, empathy, level of attention and content comprehension and previous experience of mixed emotions are correlated with experience of mixed emotions; H3: Age, gender, empathy, level of attention and content comprehension and previous experience of mixed emotions will be statistically significant predictors of experiencing mixed emotions; H4: Empathy will be a partial mediator of the relationship between age and the experience of mixed emotions; H5: Older children, in relation to younger, will be more successful in experiencing mixed emotions; H6: Girls will have higher scores on experiencing mixed emotions than boys; H7: There will be gender differences in developmental progression of mixed emotions; H8: The participants who report previous experience of mixed emotions will be more successful in experiencing mixed emotions than participants who reported no such experience.

Method

Sample and Procedure

The sample consisted of 60 children (30 boys and 30 girls) aged 5 to 10 years (M = 7.81, SD = 1.64) whose development of the verbal and behavioral functioning were in line with their age group. The verbal and behavioral functioning of the children was assessed by the school counselors in the regular state protocol before the admission to the (pre)school group. Afterwards, class teachers continuously monitored children's functioning throughout the regular school process. No child included in our sample required any inclusion protocol or school curriculum modification. The children were divided into three equal age groups: the preschool group – aged 5 to 6 (M = 5.91, SD = 0.25), the second-grade primary school – aged 7 to 8 (M = 7.73, SD = 0.44), and the fourth-grade primary school students – aged 9 to 10 (M = 9.79, SD = 0.41).

The study was carried out in an urban primary school which has also a group of preschool children. The school was conveniently sampled as a typical urban school in the city of South-East Serbia. Before carrying out the study, the approval from the principal, school counselors, as well as parents' consent for each child were obtained. In total, 132 forms were distributed, and 64 (48.5%) parents returned signed consent. After parents' consent, children were asked whether they would like to participate, too. Those children who assented to participate were included in the final sample. The sample was balanced in terms of age and gender. Participants' demographic data (age, birth date, gender) were provided by the parents.

Two researchers divided the workload in a way that both interviewed an equal number of children that participated in this study (per 30) using the same instructions. The researchers followed the Donaldson and Westerman (1986) interview procedure and interview questions, which were adapted through previous research with this theme (Larsen et al., 2007; Smith et al., 2015; Zajdel et al., 2013) and for the purposes of this study. Each child watched a series of video clips from the animated movie "Dumbo", and between every two clips children were asked two questions in order to determine the level of attention and content comprehension. After the final clip, children were asked a series of questions on understanding and experiencing mixed emotions (*Interview I* or *Interview II* format), followed with additional questions related to their previous experience of mixed emotions, and whether they had seen before the movie that was just presented to them. In the end, as a form of debriefing, children were given an explanation that the animated movie has a happy ending. Children's responses were taped on a voice recorder. Parents whose children participated in the study completed questionnaire Empathy Quotient for children. The two researchers assessed each recording of the interview independently in order to evaluate the level of intersubjective agreement in their assessments.

Measures

The stimuli for testing the understanding and experiencing of mixed emotions included five video clips – excerpts (each lasting between a minute and a half and two minutes) from the animated movie "Dumbo" (Armstrong & Ferguson, 1941). The video clips first show how baby elephant Dumbo was delivered by a stork, as well as a close relation with its mother who is overprotective. In her wish to protect its baby, the mother elephant attacks a boy who is teasing Dumbo, whereupon she is put into a cage. The final bitter-sweet scene where Dumbo comes to visit his mother who kisses and cradles him through the bars signifies the happiness of being together again, but also sadness because it is fleeting and they have to part ways.

This stimulus represents a novelty in relation to former research in which parts of animated movies "Robots" (Meledandri et al., 2005; as cited in Smith et al., 2015; Zajdel et al., 2013) and "Little Mermaid" (Clements & Musker, 1989; as cited in Larens et al., 2007) were used. The stimulus for this study had been chosen taking into account that it is age-appropriate for the participants, and that it is as similar as possible to the previously used (Larsen et al., 2007; Smith et al., 2015; Zajdel et al., 2013), as well as that the sense of the final scene remains the same – the existence of mixed emotions of happiness and sadness in the main character. Also, since the main character Dumbo is an animal (neutral stimulus in terms of gender perception of the hero) we assumed that the stimulus would be equally relevant for both boys and girls.

The experience of mixed emotions was examined using a series of questions on how the children felt at the end of the movie, requiring an explanation why did they feel that. The first question: "How do you feel at the end of watching the animated movie "Dumbo"?", and probe if necessary other questions: "Did you feel anything else at the end of the movie "Dumbo" you have just watched?" In case the child does not report mixed emotions, a question directly related to the opposite valence emotion is posed: "Did you feel happy/sad at the end of the animated movie "Dumbo" you have just watched?" Children's responses on experiencing of mixed emotions score 0 if they did not report any emotion; 1 if they reported one emotion, but they did not manage to explain it; 2 if they stated one emotion which they managed to support with an explanation; 3 if they stated mixed emotions after the additional question and 4 if they spontaneously reported about mixed emotions.

The understanding of mixed emotions was operationalized in the same manner as *experience*, with the difference that children were asked a series of questions related to the protagonist's emotions. Children's responses on understanding of mixed emotions were scored in the same manner as responses on experiencing of mixed emotions.

In order to avoid the effect of the order of questions, two versions of the interview were made as in Smith et al. (2015) and Zajdel et al. (2013). In the version *Interview I*, questions on experiencing mixed emotions are posed first, followed by the questions referring to understanding, whereas in the version *Interview II* questions related to understanding mixed emotions are posed first, followed by the questions on experiencing.

The attention and content comprehension were examined by two questions referred to the action and characters of the cartoon "Dumbo" after each of the first four video clips, increasing the chances that emotional responses are indeed related to the action in video clips. For each correct answer the child got a point. Questions are designed to correspond to the scenario of the animated movie "Dumbo" and in line with the questions used in previous research, with the consent of the authors (Smith et al., 2015) e.g. "What happened when Dumbo sneezed?".

The previous experience of mixed emotions was determined with the question: "Have you ever felt (like Dumbo) both sad and happy at the same time?". When the answer was positive, the child was further asked to explain when and why he/she had experienced mixed emotions. This question is also used to test the child's ability to experience mixed emotions referring to its own experience as in Zajdel et al. (2013).

Empathy/Systemizing Quotient – child (EQ-SQ child; Auyeung et al., 2009) measures empathy and systemizing, but for the need of this study, we only used Empathy Quotient for children (EQ-C; version adopted by Baron-Cohen, 2011) that includes two main components of empathy (recognition and response). Empathy measure was included to test if it could be a mediator between children's age and the ability to experience mixed emotions as in Zajdel et al. (2013). EQ-C was completed by parents, thus eliminating any potential inaccuracies in the relation to children's reading and comprehension skills. The instrument consists of 27 items and the parent marks how much he/she agrees with each statement related to their child on a four-level scale (starting from 1 – I absolutely agree to 4 – I absolutely do not agree; Baron-Koen, 2012). After recoding certain items according to the syntax, the total EQ-C score is obtained by adding up the points. Scores below 24 represents low EQ-C, from 25 to 44 is the average, from 45 to 49 above average, and from 50 to 54 is a very high EQ-C.The authors used the translation of the instrument listed in the translation of the Baron-Cohen's book (2011; Baron-Koen, 2012) in the mother tongue of the respondents. The instrument had adequate internal consistency reliability in our sample (Cronbach $\alpha = .79$).

Statistical Analysis

In order to test the research hypotheses, methods of descriptive statistics (frequencies, percentages, *M, SD*, crosstabs) as well as Pearson's correlation, χ^2 test, two-way ANOVA, logistic regression analysis were used in the SPSS 24 software.

Results

Preliminary analysis showed that out of 60 children, 32 (53.3%) stated that they had previously seen the animated movie "Dumbo", and that 5 (25%) of preschoolers, 9 (45%) second-grade students and 17 (85%) fourth-grade students reported on their previous experience of mixed emotions.

In the preliminary analysis, we tested with Chi-Square test the effects of examiners, type of interview applied, coders' agreement, previous experience of watching the animated movie "Dumbo" in order to eliminate the possibility that the results could be influenced by them. It showed that there was no effect of:

examiner ($\chi^2(2, N = 60) = 2.5$, $p = .29$), type of interview applied ($\chi^2(2, N = 60) = 0.11$, $p = .95$), of previous experience of watching the animated movie ($\chi^2(2, N = 60) = 0.71$, $p = .70$) on understanding mixed emotions in children. Further it also showed that there was no effect of examiner ($\chi^2(4, N = 60) = 7.40$, $p = .12$), of type of the interview applied ($\chi^2(4, N = 60) = 1.14$, $p = .89$), of the previous experience of watching the animated movie ($\chi^2(4, N = 60) = 5.21$, $p = .27$) on experiencing mixed emotions in children. In addition, agreement in estimating children's understanding and experiencing of mixed emotions between the two examiners was 100% ($k = 1.00$).

On average, respondents answered correctly on 99.2% of the questions asked about the contents of video clips from the animated movie that were used to test respondents' attention ($M = 7.93$, $SD = 0.25$). On the measure of empathy, the EQ-C the mean of our sample was at what is considered the average level of empathy ($M = 38.78$, $SD = 7.49$). Average boys' score on empathy was 38.57 ($SD = 7.81$), and girls' was 39 ($SD = 7.3$). Average score of preschoolers on empathy was 36.7 ($SD = 6.66$), second-grade students was 41 ($SD = 6.84$), and fourth grade students was 38.65 ($SD = 8.57$).

H1: Children's ability to understand mixed emotions precedes their ability to experience them – children would be more successful in the task of understanding of mixed emotions than in the task of experiencing them.

Table 1
N (%) of children within the three age groups per categories of experiencing emotions

	Age group		
	Preschoolers	II grade	IV grade
Girls			
Without emotions/one emotion without explanation	4 (20)	0	0
One emotion explained	10 (50)	8 (40)	4 (20)
Mixed emotions with follow-up questions	2 (10)	12 (60)	8 (40)
Mixed emotions spontaneously	4 (20)	0	8 (40)
Boys			
Without emotions/one emotion without explanation	4 (20)	0	2 (10)
One emotion explained	10 (50)	14 (70)	2 (10)
Mixed emotions with follow-up questions	6 (30)	4 (20)	16 (80)
Mixed emotions spontaneously	0	2 (10)	0
Total			
Without emotions/one emotion without explanation	4 (20)	0	1 (5)
One emotion explained	10 (50)	11 (55)	3 (15)
Mixed emotions with follow-up questions	4 (20)	8 (40)	12 (60)
Mixed emotions spontaneously	5 (10)	1 (5)	4 (20)

Based on Table 1 we can see that the greatest percentage of children from the preschool group and the second grade stated to have experienced one emotion – in the preschool group 20% reported one emotion without an explanation why they felt that way at the end of the movie and 50% one emotion

with an explanation why they felt that way at the end of the movie, while in the second-grade group 55% reported one emotion followed by an explanation why they felt that way at the end of the movie. On the other hand, the greatest percentage of fourth grade students stated to have experienced mixed emotions, most of them after follow-up questions (60%), and 20% spontaneously said that they felt mixed emotions at the end of the movie.

Cross-tabulation showed that out of a total of 60 children, 21.7% (n = 13) did not manifest either the understanding or experience of mixed emotions. 26.7% (n = 16) of children manifested understanding, but not experiencing mixed emotions, whereas 46.7% (n = 28) manifested both understanding and experiencing mixed emotions. 5% (n = 3) of children manifested the experience of mixed emotions, but not understanding.

McNemar's test was used to test the hypothesis that children would be more successful in the task of understanding of mixed emotions than in the task of experiencing them. McNemar's test indicated that children understood mixed emotions 44 (73.3%) more frequently than they experienced them 31 (51.7%, p = .00) suggesting that understanding of mixed emotions occurs earlier in the development than the experience of mixed emotions. The results showed that out of 31 children who experienced mixed emotions, 28 (90.3%) children understood them also, and that out of 44 children who understood mixed emotions, 28 (63.6%) experienced them as well.

Average age of children who showed understanding of mixed emotions is 8.14 years (SD = 1.66), ranging from 5 to 10 years. Average age of children who experienced mixed emotions was 8.48 (SD = 1.61) ranging from 5.7 to 10 years. The average age of children who both understood and experienced mixed emotions was 8.64 years (SD = 1.59), ranging from 5.7 to 10.

H2: Age, gender, empathy, level of attention and content comprehension and previous experience of mixed emotions are correlated with the experience of mixed emotions. Experiencing mixed emotions correlated moderately with age (r(58) = .43, p < .01) and previous experience of mixed emotions (Phi = .27, p < .05). Yet, there were no statistically significant correlations between experiencing mixed emotions on one hand and the variables empathy (r(58) = 0.19, p > .05), attention (r(58) = .17, p > .05) and gender (Phi = -.1, p > .05) on the other. Given the hypotheses and the possibility of interaction between the variables, a number of hierarchic logistics regressions were carried out.

For the purposes of the analyses that follow, children were grouped in such a manner so that in one group were children whose answers did not include mixed emotions (category without emotions/one emotion without explanation and one emotion followed by an explanation), and in the second group children whose replies included mixed emotions reported after follow-up questions and spontaneously.

H3: Age, gender, empathy, level of attention and content comprehension and previous experience of mixed emotions will be statistically significant predictors of experiencing mixed emotions.

Age and Gender

In order to examine predictors of children's experience of mixed emotions, we conducted a logistic regression, where age and gender were input as predictors together. The model was statistically significant, $\chi^2(2, N = 60) = 12.27$, $p = .002$, showing that the model distinguished between participants who had experienced mixed emotions and those who had not. The model explained between 18.5 and 24.7% of the variance of experiencing mixed emotions and correctly classified 71.7% cases. Children's age statistically significantly predicted success in the task of experiencing of mixed emotions (*B* = .59, *SE* = 0.19, *WALD* = 9.80, *p* = .002), as age increased so did the likelihood of experiencing mixed emotions by 1.81 times (*Exp(B)* = 1.81, 95% CI [1.25, -2.63]). Gender did not prove to be a significant predictor (*B* = .44, *SE* = 0.58, *WALD* = 0.59, *odds ratio* = 1.56, *p* = .44, *Exp(B)* = 1.56, 95% CI [0.50, -4.82]) of experiencing mixed emotions.

A series of hierarchical logistic regressions were also carried out – in the first step gender and age were entered whereas in the second step as an additional predictor for experiencing mixed emotions one of the following variables was also entered.

Empathy

Model with all the predictors was statistically significant ($\chi^2(3, N = 60) = 14.04$, $p = .003$). In the second step, age remained a statistically significant predictor, whereas gender and empathy (*B* = .05, *SE* = 0.04, *WALD* = 1.76, *p* = .18, *Exp(B)* = 1.05, 95% CI [0.98, -1.14]) did not turn out to be statistically significant predictors of experiencing mixed emotions.

Attention and Content Comprehension

Model with all the predictors was statistically significant ($\chi^2(3, N = 60) = 16.29$, $p = .001$) in the second step. Age retained the status of a predictor, whereas gender and attention (*B* = -2.34, *SE* = 1.43, *WALD* = 3.39, *p* = .07, *Exp(B)* = 0.07, 95% CI [0.01, -1.21]) did not turn out to be statistically significant predictors.

Previous Experience of Mixed Emotions

The model with all the predictors (gender, age, previous experience of mixed emotions) was statistically significant ($\chi^2(3, N = 60) = 12.57$, $p = .006$). Age retained the status of a statistically significant predictor, whereas gender and previous experience (*B* = -.35, *SE* = 0.63, *WALD* = 0.30, *p* = .58, *Exp(B)* = 0.71, 95% CI [0.21, -2.42]) did not turn out to be statistically significant predictors.

These three variables were not statistically significant predictors for experiencing mixed emotions even when considered individually.

H4: Empathy will be a partial mediator of the relationship between age and the experience of mixed emotions. Given that empathy did not correlate with experiencing mixed emotions, indicating that it is not a significant predictor of these emotions, preconditions for undertaking additional analyses that would

test whether empathy was a mediator of the effect of age on understanding and experiencing mixed emotions were not met. H5 : Older children, in relation to younger, will be more successful in experiencing mixed emotions. Results of the analysis of age differences indicated that there was no difference in experiencing mixed emotions ($\chi^2(1, n = 40) = 0.96, p = .33$) between the children of preschool age and the second-grade primary school children. However, fourth grade students differed in experiencing mixed emotions from the second-grade students ($\chi^2(1, n = 40) = 5.23, p = .02$) and preschoolers ($\chi^2(1, n = 40) = 10.101, p = .001$).

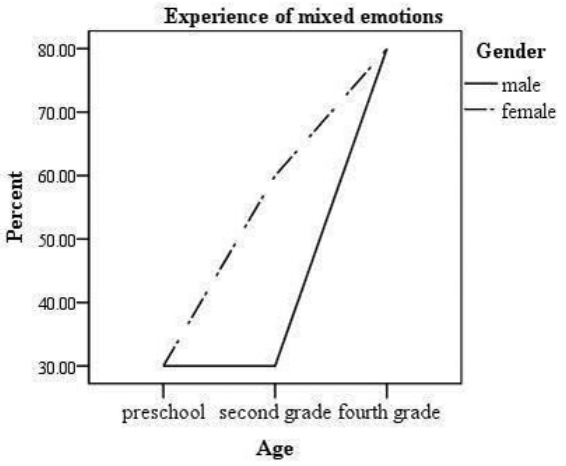
H6: Girls will have higher scores on experiencing mixed emotions than boys. The results showed that there were no gender differences in experiencing mixed emotions both on the entire sample ($\chi^2(1, N = 60) = 0.60, p = .44$), and on subsamples of preschool children ($\chi^2(1, n = 20) = 0.000, p = 1.00$), second-grade children ($\chi^2(1, n = 20) = 1.82, p = .18$) and fourth-grade children ($\chi^2(1, n = 20) = 0.000, p = 1.00$).

H7: There will be gender differences in developmental progression of mixed emotions. There was no difference between preschool boys and second-grade boys when it comes to experiencing mixed emotions ($\chi^2(1, n = 20) = 0.000, p = 1.00$). However, there was a difference in experiencing mixed emotions between fourth-grade boys on the one hand, and second-grade boys ($\chi^2(1, n = 20) = 5.05, p = .02$), or preschool boys ($\chi^2(1, n = 20) = 5.051, p = .02$), on the other hand – fourth grade boys were more successful.

It was also shown that there was no difference in experiencing mixed emotions between second-grade girls, on the one hand, and preschool girls ($\chi^2(1, n = 20) = 1.81, p = .18$), or fourth– grade girls ($\chi^2(1, n = 20) = 0.952, p = .33$), on the other hand. Nevertheless, the results show that there was a difference in experiencing mixed emotions ($\chi^2(1, n = 20) = 5.051, p = .02$) between preschool girls and fourth-grade girls, whereby fourth-grade girls were more successful.

Figure 1

Percentage of children who reported on experiencing of mixed emotions in relation to age group and gender



H8: The participants who report previous experience of mixed emotions will be more successful in experiencing mixed emotions than participants who reported no such experience. The results showed that there was a difference between children who had had previous experience of mixed emotions and those who had not when it comes to experiencing allocentric mixed emotions ($\chi^2(1, N = 60) = 4.24$, $p = .04$). Out of the children who had previously experienced mixed emotions at some point in their lives, 64.5% of them experienced those emotions during the study procedure as well, whereas 35.5% did not. On the other hand, most of the children who had not had previous experience of mixed emotions (62.1%) did not report experiencing mixed emotions during the study either.

Additional analysis – Age Differences in Stating Positive and Negative Valence Emotions

In addition to existing hypotheses, results showed that there was a difference in the tendency to state first positive/negative valence emotions between preschoolers and fourth-grade students ($\chi^2(2, n = 40) = 6.56$, $p = .04$) – children from preschool group mostly stated positive valence emotions first, whereas fourth-grade students mostly stated negative valence emotions first. Second-grade students did not differ from the other two age groups when it comes to this tendency, and when they did not state opposite valence emotions simultaneously, equally frequent was the first stated positive and the first stated negative emotion.

Discussion

Given the importance of recognizing, understanding and experiencing mixed emotions for children's emotional and social development we were interested in children's ability to verbally report experiencing allocentric emotions at the age ranging from 5 to 10 years, and the role that age, empathy and gender have in experiencing mixed emotions.

Preliminary analysis indicated that there were no effects of the interviewer, type of interview applied, previous experience of watching the stimulus movie on experiencing mixed emotions in children indicating that those factors could not have influenced the obtained results. Children correctly answered 99.2% of the questions posed referring to the content of the video clips from the animated movie which were used to test respondents' attention, indicating successful understanding of the stimulus content.

In line with previous studies (Larsen et al., 2007; Smith et al., 2015; Zajdel et al., 2013), the development progression of experience of mixed emotions could be noticed (Hypothesis 5) as well as that age is a significant predictor of experience of mixed emotions (Hypothesis 3). The majority of preschool children (aged 5 and 6) and about a half of the second-grade children stated to have experienced one emotion during the procedure (indicating general absence of mixed emotions). Half of the children from the second grade and the majority of

fourth grade students stated to have experienced mixed emotions, but mostly after the follow-up questions. More precisely, fourth grade children (9 and 10 years) in comparison to preschool children and second grade children reported to a greater extent experiencing of mixed emotions (in relation to the presented stimulus), confirming results of previous studies (Smith et al., 2015; Zajdel et al., 2013). Moreover, the youngest and middle-aged group did not differ in experiencing mixed emotions, whereas in study of Zajdel et al. (2013) there were differences between those two groups. The differences in results could be explained by different age range within groups. Nonetheless, it seems that a significant leap in experiencing mixed emotions happens somewhere around the age of 8, which is consistent with the study done by Wintre and Vallance (1994). Somewhat different results were obtained in the study by Burkitt et al. (2017) where the younger age group (aged 5–6 years) reported and graphed more single and sequential mixed emotion experiences than the older group (aged 6–7 years), and the older group reported and graphed more prevalent (both emotions are enduring, but one is of a higher intensity while the other is of a much lower intensity) in the self-condition (when protagonist in presented vignette during procedure was the interviewed child), inverse (both emotions are present but one increases while the other decreases over time) and highly simultaneous experiences (both emotions are present at moderate to high intensity with one slightly higher in intensity than the other throughout the experience) with no effect of condition (self/other). These findings (Burkitt et al., 2017) indicate the existence of experience of sequential or simultaneous mixed emotions in children at the age of 5 to 7 years old by applying the graphic technique, in contrast to the previous above-mentioned studies that indicated existence of experience mixed emotions in slightly older children.

Furthermore, results showed that most children manifest understanding rather than experiencing of allocentric mixed emotions as well as that understanding of mixed emotions precedes the experience of mixed emotions, confirming the results of the previous study (Larsen et al., 2007; Smith et al., 2015; Zajdel et al., 2013) and Hypothesis 1. To some extant this is also a confirmation of Zajdel et al. (2013) assumption that the ability to experience allocentric mixed emotions requires cognitive-emotional abilities that occur only later in development. In addition, the majority of children who experienced mixed emotions, also understood them concurrently, whereas a little more than half of the children who understood mixed emotions, also experienced them. Results are in line with previous findings that understanding emotions and emotional experience are separate and distant domains i.e., that emotions as feelings should not be mixed with emotion as cognition (Zajdel et al., 2013).

During the study we observed that children of different age differ in their tendency to name positive or negative emotions first – preschool children mainly report positive valence emotions first, whereas fourth grade students mainly mention negative valence emotions first. Similar conclusion can be found in some other studies (Roberts & Strayer, 1996; Wilson & Cantor, 1985), although with slightly different designs concerning age differences in dominant presence of one emotion of positive/negative valence in children's experiencing/empathizing with the protagonist. It could be assumed that children experience

mixed emotions, but that they eliminate cognitive dissonance opting for the more dominant emotion. For example, if a younger child is experiencing sadness it would tend to distract itself from the situation/event that evokes negative emotions (Dennis et al., 2009; as cited in Smith et al., 2015), whereas in older children development of cognitive abilities and more mature coping strategies make negative emotions less devastating/destructive and thus more acceptable, where denial as defense mechanism, intensely present at a younger age, is gradually replaced by more mature mechanisms (Brody et al., 1985). The possibility of integrating positive and negative emotions, i.e., the ability to tolerate ambivalence, is one of the significant developmental achievements in the process of personality structuring according to psychoanalysis and theories of object relations (e.g., Donaldson & Westerman, 1986). According to Donaldson and Westerman (1986) understanding ambivalence requires recognition that conflicting feelings can coexist at the same time toward the same person, that contradictory feelings interact, and coordination of feelings evoked by the immediate situation, with feelings related to the target's enduring traits and to internal processes such as memories and attitudes. It should also be mentioned that mixed emotions occur more often in emotionally negatively colored events than in positive ones (Larsen et al., 2003; as cited in Hui et al., 2009), and one of the explanations is that in this way a person copes with negative feelings by focusing on the positive aspects of the situation, indicating that mixed feelings carry self-affirmation motives (Hui et al., 2009).

Considering Hypothesis 6, the study results showed that there are no gender differences in experiencing mixed emotions neither on the level of the entire sample, nor on the level of age subsamples, nor that gender is a significant predictor of mixed emotions or is correlated with them (considering Hypothesis 2 and 3). These results partly confirm the findings of previous studies (Larsen et al., 2007; Zajdel et al., 2013). One possible explanation for the lack of differences in experiencing mixed emotions between boys and girls in our study could be the video stimulus we used in which the protagonist was baby elephant Dumbo. We expected that a more neutral stimulus would be more attractive for both boys and girls, since the previous studies (Larsen et al., 2007; Zajdel et al., 2013) led to the question of whether the subject matter of the stimulus, besides being receptive for girls, is receptive enough for boys. For this reason, unlike the stimulus used in previous studies ("Little Mermaid") with the relation between daughter and father (Larsen et al., 2007) we chose that the protagonist be a more neutral character, as well that the relation be with its mother, instead of father, so that the stimulus would be stronger and more receptive for children to identify, in line with stimuli used in studies by Zajdel et al. (2013) and Smith et al. (2015). Namely, the study that examined empathy (Feshbach & Roe, 1968), showed that matching in gender between participants and character in the stimulus helps vicarious affective response in children. Also, based on children's spontaneous statements, it can be assumed that children are very familiar with the subject matter of our study stimulus – separation from parents, and that it associated and evoked similar memories and emotions in boys and girls (separation from parents due to a school trip or parents' job position in another city). Still, further

research is needed in order to confirm assumptions about using more neutral stimuli, and if future results confirm the obtained result that could mean that boys and girls do not differ when it comes to development of mixed emotions.

When it comes to gender differences considering Hypothesis 7, it is interesting to note the development paths of experiencing mixed emotions in the subsamples of boys and girls, respectively. Comparing experience of mixed emotions in boys from different age groups, it was determined that there is a similarity between boys from preschool group and second grade in manifesting the experience of mixed emotions, whereby they significantly differ from fourth grade / boys, who were more successful (in relation to younger boys). Based on that, it can be assumed that more significant developmental leap on this variable in boys occurs after the second grade, namely between the ages 8 and 9. However, on the subsample of girls we note a slightly different developmental flow. The only significant difference noticed is in the ability to experience mixed emotions between preschool girls and fourth grade girls, indicating that the development of experiencing mixed emotions follows girls' age linearly. Based on the above, we notice that there is a difference in the dynamics of development of experiencing mixed emotions between boys and girls. Although the results obtained partially confirm results from previous research (Harter & Buddin, 1987; Zajdel et al., 2013), considering that this is a transverse, and not a longitudinal study, the assumptions on developmental progression should be taken with caution.

Having in mind allocentric design of the study as well as considerations of previous researchers (Larsen et al., 2007; Zajdel et al., 2013) we aimed to test the role of empathy as a mediator between age and ability to experience mixed emotions (Hypothesis 4). However, given that empathy did not prove to be a statistically significant predictor (Hypothesis 3) of experience of mixed emotions, conditions for examining its mediation role in the relation between age and the experience of mixed emotions were not met, whereby neither the hypothesis was confirmed nor were the results of Zajdel et al. (2013) replicated. One of the explanations could be too small variability of empathy in our sample. Namely, it could be possible that parents themselves gave socially desirable responses or that consent for participation of their children was given to a greater extent by parents who assess their children as more emotionally competent.

Also, we didn't find any differences between children of different age when it comes to the level of empathy. Such results are not in line with the findings of Zajdel et al. (2013) study, but they are in line with the study done on children aged from 5 to thirteen years (Roberts & Strayer, 1996; Strayer & Roberts, 1997). Although, according to literature, the capacity for empathy is generally more pronounced in females (Baron-Cohen, 2011), even among children (Auyeung et al., 2009; Zajdel et al., 2013), this was not confirmed in our study.

Zajdel et al. (2013) assumed that gender differences at the level of empathy might have a role in allocentric experiencing of mixed emotions of boys and girls. Although it might be said that our results are in line with this assumption, as gender differences were not determined either at the level of allocentric experience of mixed emotion, or on empathy, we have to be cautious when interpreting the results.

Although most of our results are in line with some of the previous findings (e.g., Larsen et al., 2007; Smith et al., 2015; Wintre & Vallance, 1994; Zajdel et al., 2013), we can also notice a discrepancy in findings between current and some other previous studies (e.g., Burkitt et al., 2017; Zajdel et al., 2013). Obtained differences could be considered in the light of different methodologies, differing in the applied instruments and stimuli (e.g., Zajdel et al., 2013) or in the design of the study (e.g., Burkitt et al., 2017).

The results should be considered in the light of certain limitations. Firstly, we must have in mind that only half of the parents we asked agreed that his/her child participate in the study. It might be that consent for participation of their children was given to a greater extent by parents who assess their children as more emotionally competent. In order to verify the results obtained, it seems important in future studies to examine children's empathy using different instruments – e.g., instruments that integrate the assessment of emotional synchronization with another person as well as the child's cognitive attribution for his/her own emotions such as "The Empathy Continuum scoring system" (Strayer, 1993), or to obtain information from different sources (teacher, peers, parent, child etc.). Also, a recommendation for further research is that the sample should include a wider range of children's ages in order to better consider developmental progression on understanding and experiencing mixed emotions. Another limitation is a small number of participants, so it would be recommended to use larger samples in future studies. Based on the interview procedure used, one can only implicitly draw a conclusion whether children experience/estimate that the character is experiencing mixed emotions simultaneously or in time sequence related to the same situation. It is desirable to add to the interview a question explicitly referring to the simultaneousness of mixed emotions. Larsen et al. (2007) propose that pressing buttons for particular emotion while watching the video stimulus should be introduced in the procedure in order to measure the experience of mixed emotions more precisely. In their study Burkitt et al. (2017) used a graphic method that demonstrated to be a valuable addition to the knowledge about the experience of mixed feelings in children in addition to interviews. Further, we did not control the family environment (e.g., complete family, separated parents etc.), nor the fact of previous history of the child-participant (e.g., longer hospitalizations), which may also have influenced the way children interpret what they feel and why. Although participants in our study did not have any problems understanding the content of the presented stimulus (animated movie "Dumbo"), as previous research (Burkitt et al., 2017) had showed that verbal ability predicted overall mixed emotion reports (but not graphed responses) in children aged 5 to 7, it would be useful in future research to control verbal ability. In future research it would be useful to control intelligence and theory of mind as well.

This study also has its merits and strengths. It represents a pioneer work in Serbia in the field of development of mixed emotions in children. The results have shown that the developmental path of understanding and experiencing mixed emotions is similar to the developmental path of children from other

(primarily western) countries, providing certain proof in favor of cross-cultural universality of the development of mixed emotions, but also indicating the ecological validity of the present study. Even though, to the best of authors' knowledge, a cross-cultural study on this topic hasn't been done, it seems that such a study would confirm obtained results and that could extend well-grounded findings about cultural universality when it comes to development of simple emotions (happiness, sadness, anger etc.) into mixed emotions. Furthermore, another merit of this study is that we used a more gender-neutral stimulus that showed to be sufficiently stimulative for most children of our study regardless of gender or age. There is an impression that the video stimulus was sufficiently stimulative for most children in our sample and that the relational subject matter of separation from parents was close to children (although this should be taken with caution).

Conclusion

Summing up, children aged between 5 and 10 years are generally successful at recognizing and experiencing allocentric mixed emotions, whereby developmental progression is noticed so that older children (9 and 10 years) report experiencing mixed emotions to a greater extent than preschool children (5 and 6 years) and second grade primary school children (7 and 8 years). Although it showed that understanding precedes experiencing mixed emotions, confirming results of previous research, the question remains whether the experience of allocentric mixed emotions requires cognitive-emotional abilities that appear later in development, or children find it easier to understand and accept that the other person is experiencing conflicting emotions, rather than them, or it comes as a consequence of failure of the stimulus to provoke mixed emotions. We should also mention that the results have shown that the developmental path of understanding and experiencing mixed emotions is similar to the developmental path of children from other (primarily, western) countries, providing, we could say, an argument in favor of cross-cultural universality of development of mixed emotions, but also indicating the ecological validity of the present study.

A child's capacity to understand that under certain circumstances a person can have more than one emotion increases the chance for successful resolution of social and emotional problems in the everyday life. Accordingly, identifying the age at which children start to experience and understand mixed emotions is important for detecting factors that contribute to the development of adaptive functioning skills, coping strategies, understanding the environment and socioemotional competence. Understanding these mechanisms might be of help in organizing educational processes and play so that these encourage the development of emotional competences. Also, the knowledge of the typical developmental flow of this aspect of emotional development opens up the possibility of noticing individuals with difficulties and in need of support.

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Sposobnost doživljavanja pomešanih osećanja kod dece uzrasta od pet do deset godina

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Glavni cilj ovog istraživanja je bio da se ispita sposobnost za verbalno izražavanje doživljenih alocentričnih pomešanih osećanja na uzorku od 60 dece uzrasta od 5 do 10 godina podeljenih u tri uzrasne grupe – grupu dece predškolskog uzrasta, dece drugog i grupu dece četvrtog razreda. Pet kratkih video klipova iz animiranog filma "Dambo" gde protagonista doživljava pomešana osećanja su korišćeni kao stimulus materijal u ovom istraživanju, a nakon toga je rađen intervju sa decom, dok su njihovi roditelji popunjavali upitnik emocionalne inteligencije u cilju procene dečije empatije. Rezultati pokazuju razvojnu progresiju dečije sposobnosti za doživljavanje pomešanih osećanja – učenici četvrtog razreda su bili uspešniji od preostale dve grupe mlađe dece. Uzrast se izdvojio kao statistički značajan prediktor doživljavanja pomešanih osećanja, što nije bio slučaj sa empatijom. Polne razlike u doživljavanju pomešanih osećanja nisu nađene, ali jeste razlika u dinamici razvoja ove sposobnosti među polovima. Nalazi su interpetirani iz razvojno-kognitivne perspektive prema kojoj se sposobnost za integraciju osećanja suprotnih valenci, kao dva konceptulano različita skupa predstava, formira sa uzrastom.

Ključne reči: emocionalni razvoj, pomešana osećanja, empatija, deca

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