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Definitions and Beliefs about Creativity: Perspectives of Primary School Teachers, Students and Parents in Croatia

Abstract: According to the standard definition, creativity is a process that results in the creation of an original product that is considered to be useful and effective by society or social group at a certain time. Contemporary educational policies emphasise the importance of developing creativity, but the implementation of policies depends on several factors. Intrinsic theories of creativity suggest that the perception of creativity and creative people depends on personal beliefs about creativity, so it is important to understand teachers', parents' and students' beliefs about creativity. A survey was administered to 185 participants. The sample consisted of students (n = 62), parents (n = 61) and teachers (n = 62) sampled from elementary schools in Zagreb and Rijeka, Croatia. Although similarities were observed among the three groups, in some cases, the students' definitions and beliefs about creativity were significantly different compared with the teachers' and parents' definitions and beliefs. Students were more likely to associate creativity with quirky ideas and were less likely to associate it with problem solving compared with teachers and parents. They were also less likely to agree with the notion that creativity implies breaking the determined rules and were more likely to agree that creativity is a manifestation of confidence and self-actualisation when compared with teachers and parents.

Keywords: creativity, creative teaching, implicit theories, primary school, STEM disciplines

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Introduction

Creativity research dates back to the 1930s, and according to the first standard definition of creativity, which was developed during the 1950s, originality and effectiveness are the two criteria of creativity (Runco in Jaeger 2012; Stein 1953). The product of the creative process can be considered creative only if it is new, unique or unusual, but originality is not sufficient as the only criterion because something new is not also necessary or useful. Therefore, the product must also be effective, which means that society or a social group finds it useful in practical situations (Stein 1953). In addition to originality and effectiveness, environmental influences are associated with the development of creativity and creative problem solving, but Stein (1953) remarked that the effects of the environment on creativity are not predictable because these effects depend on how the individual perceives them. The literature offers different definitions of creativity as a complex and multidimensional phenomenon, but they all consider creativity to be a transformation of something familiar into something new, different and unexpected (Csikszentmihalyi 2014; Cvetković Lay and Sekulić Majurec 2008; Feldhusen and Goh 1995; Kaufman 2016; Winner 2005).

Creativity can also be perceived as domain specific, which would suggest that different predictors can be associated with creativity in different domains. For example, assuredness was associated with creativity in the arts but not in the problem-solving and writing domains (Kaufman 2012). In mathematics education, creativity depends on the ability to overcome the fixation on using familiar methods to solve problems, instead using one's divergent thinking ability to find solutions to problems (Haylock 1987). Being creative in one domain is not associated with creativity in other domains, so Kaufman (2012) identified five domains of creativity: self/everyday, scholarly, performance, mechanical/science and artistic.

According to implicit theories of creativity, individual factors, such as attitudes and beliefs about creativity, determine how people perceive their creative thinking and creative behaviour, as well as the creativity of others (Pavlović in Maksić 2014; Pavlović et al. 2013; Runco 1999). Therefore, it is possible to suggest that the development of creativity through education depends on the teachers' perceptions of

creativity, that is, how they define creativity, perceive creative students and perceive the role of the classroom environment in supporting creativity (Maksić and Spasenović 2018). In education, creative expression is considered to be inherent to all individuals, and children are said to possess an unlimited creative potential (Craft 2003; Vygotsky 1978; Županić Benić and Vidović 2018), but only creative teachers who are competent, motivated, engaged in life-long learning and focused on exploring new creative teaching strategies can foster the development of their students' creativity (Craft 2003; Čandrlić 1988; Feldhusen 1994; Marzano et al. 2006; Yates and Hattie 2013). Learning and teaching should arise from curiosity and aim to develop divergent thinking, freedom of expression and self-confidence (Županić Benić and Ivić 2018). Divergent thinking allows students to be creative because it is the ability to find multiple, original solutions to a single problem (Guilford 1956), but its development is underrepresented in contemporary education (Sternberg and Lubart 1993). The arts develop divergent thinking and creativity, but given the current evidence, teachers should foster the development of creativity through other subjects as well (Bognar 2012; Huzjak and Županić Benić 2017; Robinson 2015).

The latest educational policies, official documents and national curricula emphasise the need to transition from traditional teacher-centred education to student-centred education that develops their competencies, including creativity (Annual report on Ontario's publicly funded schools 2011; Colorado academic standards 2009; Davis 2008; Duncan et al. 2014; Education and Skills Act 2008; Ministarstvo znanosti obrazovanja i sporta [MZOS] 2011; Recommendation 2006/962/EC, 2006; The Ontario curriculum 2009; Washington State K-12 2014). Active learning, student-centred teaching methods and other concepts introduced in modern policies can be associated with the constructivist paradigm in education (Babić 2007; Fosnot and Perry 2005; von Glaserfeld 2001; Palekčić 2002; Pritchard and Woollard 2010). Here, the aim of education is to address students' needs so that they can feel successful, hence increasing their intrinsic motivation to learn and their competencies, including creativity (Runco 2014). In addition to teaching students the contents of a subject, teachers should prepare students to learn and solve problems on their own (Sekulić-Majurec 2007). This can be achieved through active learning, individualising the course contents to the students' interests and implementing a wide range of teaching methods and techniques to engage students and facilitate learning (Stevanović 1986). However, modifications to national curricula and recommendations are not always implemented in practice because teachers' professional competencies have a significant effect on students' academic, social and individual growth (Darling-Hammond 2000; Jennings and Greenberg 2009; Sanders and Rivers 1996).

The general opinion is that schools do not contribute to the development of creativity or even have a negative effect on it (Azzam 2009; Beghetto 2005; Robinson 2015). Teaching focuses on the intellectual development of students and allots the most time to the science, technology, engineering and mathematics (STEM) disciplines, so students tend not to develop the social and emotional aspects that are important for fostering their creativity (Maksić 2006). Although educational systems and institutions can restrict the development of creativity (Maksić and

Spasenović 2018), teachers can also inhibit creative development if they have low confidence in their own creativity (Pendergast et al. 2011). Cheung and Mok (2018) investigated the predictors of creativity-oriented pedagogy and found that the teachers' traits associated with discipline (i.e., being honest, well mannered, cautious), cognitive abilities (e.g., being self-confident, reflective) and openness (e.g., preference for challenges and risk taking) were associated with their style of teaching. One suggested way to improve the development of creativity is to integrate the arts with the STEM disciplines (Conradty and Bogner 2018; Henriksen 2014). The application of creative techniques for learning new skills has also proved to be an effective way of simultaneously developing specific skills and creativity (Beghetto 2010; Olugbenga 2016; Starko 2013).

Creativity is usually perceived as depending the individual characteristics of creative individuals, such as their cognitive abilities, personality traits and motivation (Pavlović et al. 2013; Rudowicz 2003; Sternberg 1985). Creativity is also often associated with innate abilities such as talent and giftedness (Pavlović et al. 2013). Here, Gagné (2004) defined giftedness as an individual's inherent potential, whereas talent is the manifestation of achievements in certain activities. According to the triad/revolving door model, the manifestation of giftedness depends on individual abilities, motivation, dedication to a task and personality traits such as creativity (Renzulli and Reis 1986). Cultural, historical, political and other social influences also determine how society perceives creativity and creative people (Chiu 2010; Rudowicz 2003).

Teachers, students and parents all have a role in achieving the goals of education. According to implicit theories, their beliefs about creativity are associated with the perceptions of creativity and creative people, which means that they all contribute to the development of creativity through education. Within this context, the purpose of the current study was to increase the understanding of how teachers, parents and students perceive creativity. The first aim was to determine how the participants described creativity. The second aim was to identify and compare their beliefs about creative behaviours with creative individuals.

Methods

Participants

A convenience sampling strategy was used to recruit 185 participants from elementary schools in Zagreb and Rijeka, Croatia. Students (n = 62), parents (n = 61) and teachers (n = 62) completed a survey consisting of demographic questions and items pertaining to their perceptions of creativity. The students were between 8 and 11 years of age and were enrolled in the second, third and fourth elementary school grades. The parents and teachers who agreed to participate in the survey were mostly female: 85,25% and 90,32% of the two groups, respectively. Teachers were between 21 and 60 years of age, whereas 98,36% of the parents were between 31 and 50 years of age. The highest level of academic achievement for most parents

was a diploma (44,26%) or a high school degree (27,87%). After finishing their initial education, most of the teachers who participated in the current study had a diploma (58,06%) or a master's degree (22,58%). Thirty teachers also reported continuing their education on the topic of creativity. The most common types of continuing education were professional training (n = 22), workshops (n = 25) and lectures (n = 15). A smaller number of participants reported attending conferences (n = 3), seminars (n = 9) and online courses (n = 11) on the topic of creativity.

Instrument

An anonymous survey was administered to collect the participants' demographic data and their self-reported beliefs about creativity. The survey was adopted from Chiu (2010) and translated to Croatian. The translation was reviewed to identify the items that would need to be adapted to the new sociocultural context, but the statements in the original survey did not contain any cultural references that would impact cross-cultural applications, so no further adaptation was done. To determine how the participants described creativity, they were instructed to choose three of the following eight words: (a) imagination, (b) design, (c) creation, (d) quirky ideas, (e) taking risks, (f) unusual ideas, (g) problem finding and (h) breaking the rules. Although the questionnaire was designed to explore numerous beliefs about creativity and creative people, three items associated with beliefs about creative individuals and creative behaviours were selected as the variables: (a) »Some people are just born creative«, (b) »Being creative involves breaking the original rules« and (c) »Being creative is a performance of self-actualisation and confidence«. The participants' responses to those items were recorded using a 4-point scale (1 = Strongly Disagree; 4 = Strongly Agree); they were not given the option of a neutral response to any of the items.

Data Analysis Procedures

For the first aim of the study, the frequencies for each of the eight terms were calculated, and Pearson's chi-square test was used to compare the responses by group. For the second aim of the study, the Shapiro–Wilk test and Levene's test were used to test the assumptions of normality and homogeneity of variance of the three variables: (a) »Some people are just born creative«, (b) »Being creative involves breaking the original rules« and (c) »Being creative is a performance of self-actualisation and confidence«. The variables were not normally distributed, so the Kruskal–Wallis test was used to identify statistically significant differences between the responses of the parents, teachers and students. A post hoc pairwise comparison was performed using the Mann–Whitney test. The Holm (1979) method was used in the post hoc tests to perform p-value corrections to control for the family-wise error rate.

Results

To understand how the participants described creativity, which was the first aim of the study, they were asked to associate creativity with imagination, design, creation, quirky ideas, taking risks, unusual ideas, problem finding or breaking the rules. The participants were asked to choose three terms, and the frequencies of their responses can be seen in Table 1. Creativity was most often associated with imagination (n = 136) and creating (n = 134), whereas only a few participants associated creativity with taking risks (n = 17) and breaking rules (n = 6).

		Frequencies (n)	
What is Creativity?	**Teachers**	**Parents**	**Students**
Imagination	34	47	55
Design	7	11	21
Creating	40	46	48
Quirky ideas	5	4	23
Risk taking	6	9	2
Unusual ideas	27	23	27
Problem solving	26	23	6
Breaking the rules	2	3	1

Table 1: How teachers, parents and students describe creativity

The parents and teachers selected similar terms to describe creativity, $\chi^2 = 3.67$, $p = .82$. However, the students selected different terms to describe creativity compared with the parents, $\chi^2 = 32.15$, $p < .001$, and compared with the teachers, $\chi^2 = 35.58$, $p < .001$. The students were more likely to associate creativity with quirky ideas compared with teachers, 23 vs. 5, and parents, 23 vs. 4, and they were also less likely to associate creativity with solving problems compared with parents, 6 vs. 23, and teachers, 6 vs. 26. Although all the participants associated creativity with imagination, it is important to note that the students associated creativity with imagination more often than teachers, 55 vs. 34.

The second aim of the present study was to identify the participants' beliefs about creativity and creative individuals, which were measured using the following three statements: (a) »Some people are just born creative«, (b) »Being creative involves breaking the original rules«, and (c) »Being creative is a performance of self-actualisation and confidence«. The descriptive statistics are shown in Table 2. Based on the mean results, all groups were likely to agree with the statements »Some people are just born creative« and »Being creative is a performance of self-actualisation and confidence«. Teachers were the only group likely to agree with the statement »Being creative involves breaking the original rules«, whereas the parents and students were more likely to disagree with that statement.

Variable	Group	N	Mean	St. Dev.	Median
Some people are just born creative.	Parents	60	2.47	0.85	3.00
	Students	62	2.56	1.10	3.00
	Teachers	62	2.39	0.84	2.00
Being creative involves breaking original rules.	Parents	60	1.85	0.78	2.00
	Students	62	1.35	0.83	1.00
	Teachers	62	2.18	0.80	2.00
Being creative is a performance of self-actualisation and confidence.	Parents	61	3.38	0.76	4.00
	Students	62	3.73	0.61	4.00
	Teachers	62	3.34	0.77	3.00

Table 2: Descriptive statistics

The mean ranks by group for each statement are shown in Table 3. All groups were likely to agree with the statement »Some people are just born creative«, and according to the results of the Kruskal–Wallis test, the differences between the groups were not significant. However, significant differences between the groups were observed when the responses to the other statements were analysed.

	Mean Ranks				
Variable	**Students**	**Teachers**	**Parents**	χ^2	**p**
Some people are just born creative.	97.50	87.72	93.79	1.16	.56
Being creative involves breaking original rules.	62.30	117.13	99.67	39.30	< .001
Being creative is a performance of self-actualisation and confidence.	110.65	82.66	85.57	13.53	.001

Table 3: Kruskal–Wallis test results

Most of the participants agreed with the statement »Being creative involves breaking original rules«, but the students were significantly less likely to agree with that statement compared with teachers, 62.30 vs. 117.13, $U = 833$, $p < .001$, and parents. 62.30 vs. 99.67, $U = 1054$, $p < .001$. The teachers were more likely to agree with the aforementioned statement than the parents, 117.13 vs. 99.67, $U = 1451$, $p = .02$. Although the participants were likely to agree with the statement »Being creative is a performance of self-actualisation and confidence« in general, the students were significantly more likely to agree with that statement compared with teachers, 110.65 vs. 82.66, $U = 1373$, $p = .002$, and parents, 110.65 vs. 85.57, $U = 1340$, $p = .004$.

Discussion

According to the implicit theories of creativity, the perception of creativity and creative individuals depends on personal beliefs about creativity (Pavlović and Maksić 2014; Pavlović et al. 2013; Runco 1999). The current study found that teachers were more likely to associate creativity with breaking the original rules, whereas students were more likely to perceive creativity as a result of self-actualisation and confidence. The beliefs that the teachers expressed about creative behaviour could be associated with the teacher-centred approach to pedagogy, which can sometimes consider creativity to be detrimental to discipline and that emphasises traditional teaching methods such as frontal teaching (Cheung and Mok 2018). The beliefs expressed by the students suggest that a constructivist approach to teaching and learning in schools is needed because they recognise creativity as the result of self-actualisation and confidence. Therefore, teachers need to support their students' individual growth, allow them to explore their needs and interests through active learning and encourage them to creatively express themselves.

The students were also less likely to associate creativity with solving problems compared with the teachers and parents, which could suggest that education does not prepare them to solve problems creatively. From the students' perspectives, it is possible that they do not associate creativity with education in the classroom because the teaching styles in practice do not reflect the requirements of contemporary education proposed by national curricula and other official documents (Norman and Schmidt 1992; Them et al. 2003). Changes in practice are not always consistent with changes in educational policy, and teacher-centred pedagogy persists in practice because teachers need to develop professional competencies so that they can foster the holistic growth of their students (Darling-Hammond 2000; Jennings and Greenberg 2009; Sanders and Rivers 1996).

The results of the current study are similar to those reported by Chiu (2010), where students from Taiwanese schools were also more likely to associate creativity with quirky ideas and less likely to associate it with problem solving when compared with teachers and parents. Taiwanese parents and teachers were also more likely to associate being creative with breaking the original rules, whereas the Taiwanese students disagreed with this statement more often than their parents and teachers. All groups were also likely to agree with the statements »Some people are just born creative« and »Being creative is a performance of self-actualization and confidence,« which was observed in the current study as well. Chiu (2010) noted the importance of parental beliefs about creativity, how their beliefs affect creative education and the role of initial teacher education in developing teaching competencies so that teachers can foster a creative teaching environment in the classroom. The importance of beliefs about creativity in education and of developing teachers' professional competencies to encourage creativity through education has been emphasised by other authors as well (Darling-Hammond 2000; Maksić and Spasenović 2018).

It is important to note that the current study has several limitations. First, the study was conducted in Croatia, so the results cannot be generalised to other

countries because the curriculum, initial teacher education and differences between generations can affect the participants' responses. Older teachers, for example, tend to use traditional teacher-centred styles in the classroom, whereas younger generations are more likely to engage in continuous training and implement new, student-centred teaching styles. The definitions presented in the national curriculum also determine how the participants perceive creativity in general and in education. Second, because of the nonexperimental design and cross-sectional nature of the data, it is not possible to make causal inferences based on the results. The present study showed that students, teachers and parents have significantly different perceptions of creativity, but further research is necessary to explain why their perceptions of creativity are different and how that understanding can be used to improve the development of creativity through education.

Conclusion

The purpose of the current study was to understand how teachers, parents and students as participants in the process of education perceive creativity and creative individuals. The first aim was to determine how the participants described creativity, and it was found that the students were more likely to associate creativity with quirky ideas, whereas the parents and teachers were more likely to associate creativity with problem solving and risk taking. The second aim was to identify and compare their beliefs about creative behaviours and creative individuals. The students were less likely to agree with the notion that creativity implies breaking the original rules and were more likely to agree with creativity being a manifestation of confidence and self-actualisation compared with the teachers and parents. The results suggest that more attention is needed to develop students' divergent and creative thinking abilities in a way that prepares them to learn and solve problems on their own. This outcome can be achieve using student-centred teaching styles that focus on the needs of the students, encourage them to actively participate in learning and foster creative expression.

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OPREDELITVE IN PREPRIČANJA O USTVARJALNOSTI: POGLEDI OSNOVNOŠOLSKIH UČITELJEV, UČENCEV IN STARŠEV NA HRVAŠKEM

Povzetek: Po uveljavljeni opredelitvi je ustvarjalnost proces, katerega rezultat je stvaritev nečesa izvirnega, ki je hkrati tudi uporabno in učinkovito za družbo ali določeno družbeno skupino v nekem času. Sodobne izobraževalne politike poudarjajo pomen razvoja ustvarjalnosti, toda implementacija teh politik je odvisna od številnih dejavnikov. Intrinzične teorije ustvarjalnosti gradijo na predpostavki, da je dojemanje ustvarjalnosti in ustvarjalnih posameznikov odvisno od subjektivnih prepričanj o ustvarjalnosti, iz česar izhaja, da je pomembno razumeti, kakšna prepričanja o ustvarjalnost imajo učitelji, učenci in starši. Opravili smo raziskavo, v katero smo vključili vzorec 185 udeležencev iz hrvaških osnovnih šol v Zagrebu in na Reki. Med temi je bilo 62 učencev, 61 staršev in 62 učiteljev. Čeprav smo med vsemi tremi skupinami opazili podobnosti, smo ugotovili, da so se v nekaterih primerih opredelitve in prepričanja učencev o ustvarjalnosti pomembno razlikovale od tistih, ki so jih izrazili učitelji in starši. Učenci so v primerjavi z učitelji in starši v večji meri ustvarjalnost povezovali z nenavadnimi, domiselnimi idejami, manj pa z reševanjem problemov. Prav tako so se v manjši meri strinjali s pojmovanjem, da ustvarjalnost pomeni tudi delovanje v nasprotju s postavljenimi pravili, bolj kot starši in učitelji pa so se strinjali, da je ustvarjalnost izraz samozavesti in samouresničenja.

Ključne besede: ustvarjalnost, ustvarjalno poučevanje, implicitne teorije, osnovna šola, naravoslovje

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