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Investigation of pre-school teachers' creativity levels*

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Abstract

This study was conducted to reveal the creativity skill levels of preschool teachers. 221 volunteer preschool teachers studying in official independent kindergartens and official nursery schools in Düzce province participated in the study. The effect of the variables of gender, education level, marital status, professional seniority, and whether or not they received training on creativity on the creativity skill levels of these teachers was investigated. Descriptive survey and causal comparison models were used together in the study. The "Creative Personality Traits Scale", consisting of four dimensions and a total of 17 items was used to measure the creative personality traits of preschool teachers in this study. In data analysis, minimum, maximum, arithmetic mean, and standard deviation values were used in the context of descriptive statistics; t-tests (independent samples) and ANOVA tests were used in intergroup comparisons. According to the research findings, it was determined that the variables of gender, education level, marital status, professional seniority, and whether or not they received training on creativity did not differentiate the creative personality traits of the participants in a statistically significant way. According to the study's findings, the preschool teachers' creativity in the study group was high. At the same time, based on the findings, it was determined that the dimension in which the participants showed the highest level of participation in the context of creative personality traits was intrinsic motivation, and the dimension in which they showed the lowest level of participation was risk-taking.

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INTRODUCTION

Although creativity is one of the terms we have difficulty defining, it occupies our minds as a concept discussed and tried to be understood in almost every field in our age (Demirci, 2007; Üstündağ, 2002). Memduhoğlu, Uçar, and Uçar (2020) defined creativity as questioning existing knowledge, moving away from prejudices, establishing new relationships from the known to the unknown, looking at events from different perspectives, and making new experiments. Vygotsky (2004) defines creativity as a process in which new thoughts and behaviors emerge by restructuring (synthesis) or rethinking the information we have previously learned, while Mumford (2003) defines creativity as creating new and valuable things that are tangible and visible-concrete (such as inventions) and intangible and invisible-abstract (such as ideas and hypotheses). Moreover, creativity is the ability to produce a new and socially helpful idea or product by establishing original connections between concepts that no one can think of (invention), eliminating prejudices, and bringing different solutions to the problem (Ayden & İşguzar, 2006). When the definitions of creativity made to date are examined, common concepts such as creating a new product or idea, bringing different solutions to the problem, and going out of the ordinary draw attention. In the developing and changing world, modern universal values of societies have replaced traditional values. These universal values include freedom, reconciliation, justice, tolerance, peace, knowledge, and creativity (Altunay & Yalçınkaya, 2011).

According to Runco (2007), societies are experiencing a serious acculturation. The concept of creativity is even more critical in the face of these rapid changes caused by the development of communication. Although creativity is an innate ability of individuals, it has been revealed through studies that it is an ability that can be developed through education (Üstündağ, 2014; Dere & Ömeroğlu, 2018; Yıldız, 2000). In the 20th and 21st centuries, this concept, previously encountered only in areas such as artistic professions, has emerged as a critical force in the development and progress of many fields, from health to technology, economy to education (Koray, 2005).

Creativity is as essential in the development of science and technology as it is in the development and progress of societies (Robinson, 2001). Since creativity includes fluency, flexibility, originality, and elaboration skills, it helps the individual to make connections between seemingly unrelated ideas. People who develop creative thinking skills know that different thoughts are valuable and respect different thought structures (Orhon, 2014). At the same time, creativity is a skill that is necessary not only for producing original ideas but also for personal fulfillment, finding solutions to complex problems, or coping with stress (Torrance, 1962; cited in Orhon, 2014). In the 21st century, teachers who are active implementers of education programs are prepared to train people with high-level thinking skills, such as creative thinking, and they have much work to do. In our age, where information spreads rapidly with the development of technology, teachers' job descriptions have also changed. The teacher should update himself/herself in the face of changing and increasing information and should be a good guide with sufficient technological equipment for students to reach the right information quickly (Balay, 2004).

For students to develop creative thinking skills, teachers should primarily use methods and techniques to support the development of these skills and make the classroom environment and children's psychology suitable for acquiring these skills. They should encourage and guide students to find their solutions to problems. Creative teachers should create teaching environments that enable students to discover their creative talents and use them for self-realization. Taking individual differences into account, they should be guided in a way that supports their creativity rather than transferring information (Aydoğan, 2008).

Creative teachers support children in dreaming, finding solutions to problems, coming up with new ideas, interacting with different materials, and realizing their abilities and strengths (Argun, 2012). When creative teachers make a mistake, they realize it and try to find a solution without making their students feel it, while teachers who are not creative do not even realize their mistakes (Bartel, 2000; cited: Üstündağ, 2014).

Creativity is an ability that is transmitted through learning. As such, students in the classrooms of creative teachers have a good chance of developing their creativity. It is unthinkable for a person to pass on a teaching that he or she does not have. For this reason, it is thought to be important that preschool teachers and all teachers have these creative thinking skills and strive to transfer them (Argun, 2012; Üstündağ, 2014).

Torrance (1969) stated that the creativity of individuals reaches its maximum level at the age of four, so the preschool age range should be seen as the golden age of creativity (cited in Sönmez Ektem, 2017). In a study conducted by Moran et al. (1983), it was found that preschool-age children gave more original responses than 9-12-year-old children. This is thought to be because this age range is the golden age of creativity, as well as the fact that preschool education programs are more flexible and that age group has not yet met formal education.

In Turkey, studies on this subject have increased in the 21st century, and the importance of creative thinking skills has started to be emphasized more. When the basic features of the Preschool Education Program, which the Ministry of National Education is implementing with 18244 preschool education institutions, 87323 preschool teachers, 59805 classrooms, 118941 branches, and 991261 preschool students in the 2022-2023 academic year, are examined, it is seen that contributing to the development of creativity is of primary importance. In addition, it was emphasized that preschool teachers should know the concept of creativity and apply it to carry out this program within the framework of the principle of fitness for purpose (MEB, 2013; MEB, 2023). Meanwhile, aesthetics and creativity are included as competency areas within the special field competencies of preschool teaching (ÖYGM, 2017). All these show how important creativity is in the education of 0-6-year-old children in our country and indicate that creativity has a significant share in the teacher characteristics of our age.

CHARACTERISTICS OF CREATIVE PEOPLE

According to Sak (2014), creativity requires differences in individual perceptions, social relations, ways of thinking, and personality traits. Extraordinary people are usually creative. They use different methods to resolve complexities using humor in their style. They do not behave monotonously, avoid rules, and enjoy change due to the impulse of their imagination. Creative people are also entrepreneurs. People who are far from classical thinking and who are flexible in problem-solving are in the stages of creativity.

Edward, who introduced creative thinking, expressed creativity in horizontal and vertical aspects. In vertical thinking, problems are identified in detail and investigated in depth. Different solution methods are developed in the face of problems in horizontal thinking. People with horizontal thinking are mostly creative people. They are not afraid of making mistakes; even if they do, they learn from them. They do not like to be restricted by rules and other people. They solve problems with their own methods and techniques (cited in Saraçoğlu, Duran, and Taşkın, 2010).

When the characteristics of creative people in the literature are analyzed, the following characteristics can be stated according to the research findings (Arslantaş, 2001; Barker, 2002; Csikszentmihalyi, 1996; Karwowski et al., 2013; Nicolaou, 2015; San, 1979; Shane):

-They resist uncertainties,

-They organize complexities without giving up,

-Because they have an expansive imagination, they see things from a different perspective,

-They take risks,

-They are selective because their perception is high,

-They are sociable personalities and easy to communicate with,

- They are sociable but emotional,

-Their sense of curiosity is developed,

- They are realistic,

- They are outspoken and do not hide their opinions,

- Their physical energy is at its peak,

- They make objective assessments,

-Being criticized is not something to be afraid of for them,

-They can be self-motivated,

-They have original lives,

- They are hard workers with high work concentration.

- They think differently,

-They like to try new things,

- Rules are boring for them

Investigating preschool teachers' creativity levels and comparing them by demographics is crucial for enhancing educational practices, supporting teacher development, promoting diversity, and ultimately improving the quality of early childhood Education, which implies the significance of the current study.

PROBLEM STATEMENT

"Determining the creativity skill levels of preschool teachers" can be stated as the problem statement of this research. Based on the primary purpose, answers to the following sub-problems were sought.

-Is there a statistically significant difference between the scores of preschool teachers on the creative personality scale by gender?

- Is there a statistically significant difference between the scores of preschool teachers on the creative personality scale by the education level?

Is there a statistically significant difference in the scores of preschool teachers on the creative personality scale by marital status?

Is there a statistically significant difference in the scores of preschool teachers on the creative personality scale by professional seniority?

-Is there a statistically significant difference between the scores of preschool teachers on the creative personality scale by whether or not they received training on creativity?

-What are the views of preschool teachers on the concept of creativity?

METHODOLOGY

This study section details the research design, sample, data collection tools, and data analysis.

RESEARCH DESIGN AND SAMPLE

In the present study, which aims to measure the creative personality traits of preschool teachers, descriptive survey and causal comparison models were used together. The descriptive survey model aims to reveal specific characteristics of the research participants (Fraenkel & Wallen, 2006), while

causal comparison aims to compare groups regarding independent variables such as gender, education level, and seniority (Mertens, 2010).

The study's population comprises preschool teachers working in independent kindergartens and official preschools in Düzce province. The sample consists of 211 teachers selected from 396 preschool teachers who were determined according to the rule of impartiality through simple random sampling (Fraenkel & Wallen, 2006). Demographic information about the sample is presented in Table 1.

Table 1. *Demographic results of the research participants*

Variable	Group	f	(%)
Gender	Female	129	58.4
	Male	92	41.6
Education level	2 years program	34	15.4
	Undergraduate	147	66.5
	Graduate	40	18.1
Seniority	0-5 years	55	24.9
	6-10 years	42	19.0
	11-15 years	50	22.6
	16-20 years	32	14.5
	21 years +	42	19.0
Marital status	Married	167	75.6
	Single	54	24.4
Receive a creativity training program	Yes	77	34.8
	No	144	65.2

As Table 1 shows, 129 of the participants were female (58.4%) and 92 were male (41.6%); 34 had associate degree (15.4%), 147 undergraduate (66.5%) and 40 graduate (18.1%) degrees. When the seniority of the participants is analyzed, 55 teachers (24.9%) had 0-5 years of experience, 42 teachers (19.0%) 6-10 years of experience, 50 teachers (22.6%) 11-15 years of experience, 32 teachers (14.5%) 16-20 years of experience, and 42 teachers (19.0%) 21 years or more of experience. Of the participants, 167 (75.6%) were married and 54 (24.4%) were single. Lastly, 77 participants (34.8%) had training on creativity, while 144 participants (65.2%) did not attend training on creativity.

DATA COLLECTION TOOL

In the study, the “Creative Personality Traits Scale” developed by Şahin and Danışman (2017) was used to measure the creative personality traits of preschool teachers. The scale consists of four dimensions, namely “goal orientation (5 items)”, “intrinsic motivation (5 items)”, self-confidence (3 items)” and ‘risk-taking (4 items)’, and a total of 17 items. Statements in the dimensions of goal orientation and risk-taking were reverse-coded. An example of the statements in the scale is the statement, “I like to ask people unexpected questions.” The researchers demonstrated the scale's validity through exploratory and confirmatory factor analyses and reliability through Cronbach's Alpha internal consistency coefficient.

The validity and reliability of the scale were tested using the current research data. Confirmatory factor analysis was conducted within the scope of validity. As a result of the analysis, the goodness of fit indices of the scale was calculated as x^2/sd=1.54; p=.00; CFI=.93; RMSEA=.05.These values indicate that the scale's factor structure is compatible with the existing data set (Hair et al., 2014). On the other hand, within the scope of reliability, Cronbach's Alpha internal consistency coefficient was calculated, and the coefficient was found to be α=.73. This coefficient meets the criteria sought in the literature (Büyüköztürk, 2017). Based on these findings, it can be stated that the validity and reliability of the scale within the scope of the current study were achieved.

DATA ANALYSIS

Data analysis was conducted on the SPSS 25 program. Before the analysis process, the data set was examined for missing values, and no missing data were found. Secondly, the data distribution was checked by means of kurtosis and skewness values. As a result of the first analysis, it was observed that the relevant values were outside the range of ±1.96. Therefore, it was evaluated that the data did not show a normal distribution (Field, 2009). Using the box plot method, the data of 12 participants considered outliers were excluded from the analysis, and the kurtosis skewness values were recalculated. As a result of this analysis, it was observed that the relevant values indicated a normal distribution (See Table 3). After the assumption of normal distribution was met, the analysis continued with the data obtained from 209 participants. Parametric tests were used in data analysis. In the context of descriptive statistics, minimum, maximum, arithmetic mean, and standard deviation values, t-test (independent samples), and ANOVA (in groups of 3 or more) tests were used in group comparisons. The significance value was set as p<.05. The criteria used to evaluate arithmetic means are as follows.

Table 2. *Intervals used in the interpretation of arithmetic mean*

Score Range	Interpretation
1.00-1.80	Strongly disagree
1.81-2.60	Disagree
2.61-3.40	Undecided
3.41-4.20	Agree
4.21-5.00	Strongly agree

RESULTS

Table 3. *Descriptive statistics*

Factor	n	Min.	Max.	x̄	S.D.	Skewness	S.E.	Kurtosis	S.E.
Goal orientation	209	1,80	5,00	3,78	,79	-,25	,17	-,67	,33
Intrinsic motivation	209	2,60	5,00	4,34	,61	-,74	,17	-,31	,33
Self-confidence	209	1,00	5,00	3,93	,91	-,64	,17	-,27	,33
Risk-taking	209	1,00	5,00	3,32	,84	-,12	,17	-,49	,33
Scale-wide	209	2,71	5,00	3,87	,48	-,16	,17	-,35	,33

Table 3 presents descriptive findings regarding the overall and dimensions of the creative personality traits scale. Accordingly, the arithmetic means of the participant's scores of goal

orientation (x̄=3,78; S.D.=.79), of self-confidence (x̄=3.93; S.D.=.91), and in the overall scale (x̄=3,87; S.D.=,48) and can be interpreted as "Agree". The arithmetic means in the risk-taking dimension is (x̄=3.32; S.D.=.84) and can be interpreted as "undecided"; finally, the arithmetic mean in the intrinsic motivation dimension is (x̄=4.34; S.S.=.61) and can be interpreted as "Strongly agree". Based on these findings, it can be stated that the dimension in which the participants show the highest level of agreement in the context of creative personality traits is intrinsic motivation, and the dimension in which they show the lowest level of agreement is risk-taking.

Table 4. *Comparison of creative personality traits in the context of gender variable*

Factor	Gender	N	x̄	S.D.	df	t	p
Goal orientation	Female	122	3.86	.75	207	1.62	.27
	Male	87	3.68	.83			
Intrinsic motivation	Female	122	4.38	.61	207	.92	.33
	Male	87	4.30	.60			
Self-confidence	Female	122	3.85	.95	207	1.53	.24
	Male	87	4.04	.86			
Risk-taking	Female	122	3.17	.85	207	3.11	.37
	Male	87	3.53	.77			
Total	Female	122	3.85	.49	207	.64	.78
	Male	87	3.89	.47			

Table 4 presents the findings regarding the comparison of the participant's scores on the creative personality traits scale by gender. The findings obtained are as follows: "Goal orientation" ($t_{(207)}$=1.62; p>.05), "Intrinsic motivation" ($t_{(207)}$=.92; p>.05), "Self-confidence" ($t_{(207)}$=1.53; p>.05), the overall scale ($t_{(207)}$=.64; p>.05) show that gender does not statistically significantly differentiate the creative personality traits of the participants. In other words, female and male teachers do not exhibit a significant difference in terms of creative personality traits.

Table 5. *Comparison of creative personality traits in the context of marital status variable*

Factor	Marital Status	N	x̄	S.D.	df	t	p
Goal orientation	Married	156	3.83	.80	207	1.33	.18
	Single	53	3.66	.73			
Intrinsic motivation	Married	156	4.34	.62	207	.06	.98
	Single	53	4.35	.59			
Self-confidence	Married	156	3.92	.94	207	.31	.15
	Single	53	3.96	.83			
Risk Taking	Married	156	3.31	.84	207	.50	.64
	Single	53	3.37	.82			

Total	Married	156	3.87	.49	207	.31	.48
	Single	53	3.85	.44			

Table 5 presents the findings regarding the comparison of the participant's scores on the creative personality traits scale by marital status. The findings are as follows: “Goal orientation” ($t_{(207)}$=1.33; p>.05), “Intrinsic motivation” ($t_{(207)}$=.06; p>.05), “Self-confidence” ($t_{(207)}$=.31; p>.05), “Risk-taking” ($t_{(207)}$=.50; p>.05), and the overall scale ($t_{(207)}$=.31; p>.05) show that the marital status does not statistically significantly differentiate the creative personality traits of the participants. In other words, teachers' marital status does not significantly affect their creative personality traits.

Table 6. *Comparison of creative personality traits in the context of creativity education variable*

Factor	Creativity Training	N	x̄	S.D.	df	t	p
Goal orientation	Yes	72	3.89	.80	207	1.43	.31
	No	137	3.73	.73			
Intrinsic motivation	Yes	72	4.45	.62	207	1.91	.44
	No	137	4.28	.59			
Self-confidence	Yes	72	4.02	.94	207	1.09	.56
	No	137	3.88	.83			
Risk Taking	Yes	72	3.31	.84	207	.17	.31
	No	137	3.33	.82			
Total	Yes	72	3.94	.49	207	1.70	.70
	No	137	3.82	.44			

Table 6 presents the findings regarding the comparison of the participants' scores from the creative personality traits scale in the context of whether they received creativity training or not. As can be seen in the table, it is possible to see that the participants' scores on “goal orientation” ($t_{(207)=}$1.43; p>.05), “intrinsic motivation” ($t_{(207)}$=1.91; p>.05), “self-confidence” ($t_{(207)}$=1.09; p>.05), “risk taking” ($t_{(207)}$=.17; p>.05), and the overall scale ($t_{(207)}$=.70; p>.05) do not differ statistically significantly by receiving creativity training or not. In other words, the teachers participating in the study have similar creativity characteristics regardless of their training on creativity.

Table 7. *Comparison of creative personality traits in the context of education level variable*

Factor	Education level	N	x̄	S.D.	F	p	Post Hocc
Goal orientation	(1) Associate degree	30	3.71	.64	.14	.87	-
	(2) Undergraduate	140	3.80	.85			
	(3) Graduate	39	3.79	.68			
Intrinsic motivation	(1) Associate degree	30	4.35	.62	.43	.64	-
	(2) Undergraduate	140	4.36	.59			

	(3) Graduate	39	4.26	.68			
Self-confidence	(1) Associate degree	30	3.90	.88	.15	.86	
	(2) Undergraduate	140	3.91	.92			
	(3) Graduate	39	4.00	.93			
Risk Taking	(1) Associate degree	30	2.80	.87	7.52	**.00**	1-2; 1-3
	(2) Undergraduate	140	3.39	.82			
	(3) Graduate	39	3.49	.73			
Total	(1) Associate degree	30	3.72	.41	1.69	.19	-
	(2) Undergraduate	140	3.89	.51			
	(3) Graduate	39	3.90	.41			

Table 7 presents the findings regarding the comparison of the participant's scores on the creative personality traits scale by the level of education. The findings show that the scores obtained on "goal orientation" ($F_{(2,206)}$=.14; p>.05), "intrinsic motivation" ($F_{(2,206)}$=.43; p>.05), "self-confidence" ($F_{(2,206)}$=.86; p>.05) and the overall scale ($F_{(2,206)}$=1.69; p>.05) do not differ statistically significantly by educational level. On the other hand, on the "Risk-taking" dimension ($F_{(2,206)}$=7.52; p<.05), the level of education creates a statistically significant difference. The homogeneity of variance test was performed to determine between which groups the difference was and as a result of Levene's Test (Levene Value=1,69; p=,21), it was evaluated that the variances were homogeneous. Since the variances were homogeneous and the number of participants in the groups was not homogeneously distributed, the Scheffe test was preferred. Accordingly, the arithmetic means of the scores of teachers with undergraduate degrees (x̄=3.89; S.D.=.51) and graduate degrees (x̄=3,90; S.D.=,41) are statistically significantly higher than the mean scores of teachers with an associate degree (x̄=3.72; S.S.=.41).

Table 8. *Comparison of creative personality traits by experience*

Factor	Experience	N	x̄	S.D.	F	p	Post Hocc
Goal orientation	(1) 0-5 years	53	3.74	.83	.96	.43	-
	(2) 6-10 years	40	3.81	.76			
	(3) 11-15 yıl	45	3.96	.78			
	(4) 16-20 years	32	3.64	.73			
	(5) 20 years +	39	3.74	.81			
Intrinsic motivation	(1) 0-5 years	53	4.49	.55	2.02	.09	-
	(2) 6-10 years	40	4.34	.72			
	(3) 11-15 years	45	4.41	.53			
	(4) 16-20 years	32	4.17	.67			
	(5) 20 years+	39	4.22	.57			
Self-confidence	(1) 0-5 years	53	3.91	.97	.51	.73	-
	(2) 6-10 years	40	3.79	.92			

	(3) 11-15 years	45	3.99	.93			
	(4) 16-20 years	32	3.88	.91			
	(5) 20 years+	39	4.06	.83			
Risk Taking	(1) 0-5 years	53	3.20	.89	1.76	.14	-
	(2) 6-10 years	40	3.18	.84			
	(3) 11-15 years	45	3.27	.93			
	(4) 16-20 years	32	3.57	.66			
	(5) 20 years+	39	3.49	.73			
Total	(1) 0-5 years	53	3.86	.47	.46	.77	-
	(2) 6-10 years	40	3.81	.53			
	(3) 11-15 years	45	3.94	.50			
	(4) 16-20 years	32	3.82	.44			
	(5) 20 years+	39	3.88	.45			

Table 8 presents the findings regarding the comparison of the participants' scores on the creative personality traits scale by experience. When the findings are examined, it is seen that the scores on "goal orientation" ($F_{(4,204)}$=.96; p>.05), "intrinsic motivation" ($F_{(4,204)}$=2.02; p>.05), "self-confidence" ($F_{(4,204)}$=.51; p>.05), "risk-taking" ($F_{(4,204)}$=1.76; p>.05) and the overall scale ($F_{(4,204)}$=.46; p>. 05) did not differ statistically significantly by experience.

DISCUSSION AND CONCLUSION

The study aimed to determine whether the creativity skill levels of preschool teachers differ by gender, education level, marital status, experience, and whether or not they receive training on creativity. 221 preschool teachers participated in this study. According to the study's findings, the creativity of preschool teachers in the study group was high. In the study conducted by Çoban (2016), it was determined that the creativity of preschool teachers was high. At the same time, Titrek, Yilmaz, and Özgüray (2023) found the highest creativity characteristics of preschool teachers in their perceptions of creativity and its sub-dimensions in the originality dimension and at the "High" level.

According to the study's findings, the gender variable does not differentiate the creative personality traits of the participants in a statistically significant way. In other words, female and male teachers do not exhibit a significant difference in terms of creative personality traits. Other studies with similar results confirm these findings (Kenç, 2001; Sonmaz, 2002; Yenilmez & Yolcu, 2007). On the other hand, Köse, Çelik-Ercoşkun, and Balcı (2016) found that gender significantly differentiated teachers' creativity levels. Furthermore, Titrek, Yilmaz, and Özgüray (2023) stated that there was no gender difference among preschool teachers regarding academic, original, artistic, and general perceptions of creativity. The creativity perceptions of preschool educators revealed a significant difference in favor of men in the field of scientific and mechanical creativity and in favor of women in the field of artistic performance creativity. However, they are superior in the scientific/mechanical field, but in this case, women believe they have more creativity in artistic performance.

The study's findings show that the scores obtained do not differ statistically significantly by the level of education. Çetingöz (2002) investigated whether the creativity level of pre-service teachers varies by the high school they graduated from, and no significant difference was found in the creativity levels

of pre-service teachers by the type of high school. However, Gülel (2006) and Çoban (2016) did not find a significant difference by the level of education. However, the creativity scores of preschool teachers who graduated from vocational high schools were higher than those of other high school graduates. It can be said that the courses in vocational high schools are oriented in the field, and the teachers who graduated from here have increased their level of readiness. They have made a difference compared to others in terms of creativity.

According to the findings of the study, it is seen that there is no statistically significant difference by experince. Gülel (2006), who conducted a similar study, did not find a significant difference by age of pre-service teachers. In the study conducted by Çoban (2016), it was found that there was no significant difference between the age of teachers and their creativity. The study conducted by Dursun and Ünüvar (2011) concluded that the opinions of preschool teachers regarding the factors that prevent creativity in the preschool period did not differ significantly by their experience. Demirel (2007) states that it is difficult to determine clear boundaries between creativity and age, but creative thinking reaches its highest level in middle adulthood. According to the findings of this study, teachers' creative thinking tendencies do not differ significantly by age and professional seniority. However, according to Uzman's (2003) study, a significant difference was found by the age range of preschool teachers. When an analysis was made according to the dimensions, a significant difference was found only in the fluency dimension, and no significant difference was found in the other dimensions.

In the scientific study conducted by Zembat, İlçi Küsmüş, and Yılmaz (2018), it was found that the creative thinking tendencies of preschool teachers differed significantly by age and professional experience. The scores of teachers over 36 years of age were found to be higher than the scores of teachers between 21-25 years of age. It was also found that the scores of teachers with 11-15 years and 16 or more years of professional experience were higher than those with 0-5 years. Again, when Titrek, Yilmaz, Özgüray (2023) examined how preschool teachers perceive creativity, it was concluded that teachers' perceptions of creativity did not vary according to age and showed similar characteristics across age groups. Preschool teachers' academic, scientific/mechanical, distinctiveness, and general creativity evaluations are consistent regardless of specialisation. It was found that there was a difference in the perception of artistic performance between those with less seniority and those with more seniority in favour of those with less seniority.

Based on the study's findings, the marital status variable does not statistically significantly differentiate the creative personality traits of the participants. In other words, the marital status of teachers does not significantly affect their creative personality traits. Skeja (2019) found that there is a difference in the idea generation sub-dimension of creativity by marital status. Similarly, Tabarestani et al. (2014) stated that single people are more creative than married people.

According to the study's findings, there is no statistically significant difference in the variable of receiving creativity training. In other words, the teachers participating in the study have similar creativity characteristics regardless of their training in creativity. In a study conducted by Eskidemir-Meral and Tezel-Şahin (2019), it was seen that teachers' creative thinking tendencies did not differ significantly depending on whether they received in-service training or not. However, the study by Uzman (2003) determined significant differences in the originality dimension of creativity according to whether or not teachers working in preschool education institutions received in-service training on creativity. However, there was no significant difference in the fluency and flexibility dimension.

Based on these findings, the dimension in which the participants showed the highest level of participation in terms of creative personality traits was intrinsic motivation, while the dimension in which they showed the lowest level of participation was risk-taking. Since preschool teachers are working with an age group whose creativity is at its peak, this can influence their intrinsic motivation to be creative.

RECOMMENDATIONS

This study tried to determine the creativity skill levels of preschool teachers. Since this study was applied only to preschool teachers working in official independent kindergartens and official preschools in Düzce province, it is not correct to generalise and evaluate all preschool teachers. For this reason, conducting similar studies in different provinces will contribute to the field. Studies can be conducted to determine and comparatively examine preschool teachers' creativity and creative thinking tendencies.

Studies can be conducted to examine the creative thinking tendencies of teachers in different branches. Studies can be conducted to examine the practices of preschool teachers to develop children's creativity and creative thinking skills. At the same time, it can be suggested that administrators should provide opportunities for candidates to provide environments that develop their creativity individually and enrich the environment by providing educational materials and resources. In addition, teaching the concept of creativity as a course would be a positive attitude toward improving the quality of preschool education. In addition, school administrators must give importance to in-service training for teachers to increase their creativity skill levels after they take office to increase productivity. In addition, it would be more beneficial for teachers to evaluate the creative activities of students by considering their individual interests and abilities while observing them. In addition to determining preschool teachers' creativity and creativity skill levels, different studies should be conducted to support the studies to be carried out to improve these levels and organise the educational environment and the activities to be implemented.

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