Theory and Practice in Child Development

https://tpicd.org

E-ISSN: 2791-9943

Volume: 2 Issue: 1 2022

pp. 64-75

The Examination of the Relationship between Creative Thinking Tendencies and Organizational Creativities of Preschool Teachers

Sümeyye Öcal Dörterler[*a] & Dicle Akay[b]

* Corresponding author
E-mail: sumeyye.dorterler@dpu.edu.tr

a. Department of Child Development, Kütahya Dumlupınar University, Kütahya, Turkey

b. Department of Preschool Education, Faculty of Science Education, Bahçeşehir University, İstanbul, Turkey

Article Info
Received: April 7, 2022
Revised: May 10, 2022
Accepted: June 24, 2022

10.46303/tpicd.2022.10

How to cite
Dörterler, S. Ö. & Akay, D. (2022). The Examination of the Relationship between Creative Thinking Tendencies and Organizational Creativities of Preschool Teachers. *Theory and Practice in Child Development*, 2(1), 64-75. https://doi.org/10.46303/tpicd.2022.10

ABSTRACT

Environmental and hereditary factors have an effect on the improvement of creativity, which is among 21st century skills. Family, school, teacher and classmates influence individuals' creativity. Studies show that organizational climate, organization and leadership attitudes are influential on teacher creativity. The aim of this study is to investigate the relationship between creative thinking tendencies and organizational creativities of preschool teachers. The research was conducted in correlational survey model. 173 preschool teachers participated in the research. The data was obtained from Personal Information Form, Marmara Creative Thinking Tendencies and Organizational Creativity scales by means of Google Form. Independent t-test, one-way ANOVA analysis, Kruskal Wallis Test and Pearson correlation were used to analyze the data. While there was a significant difference according to institution type between organizational creativity scores of preschool teachers in individual and administrative dimensions, there was no significant difference in creative thinking tendencies. Besides, there was a significant difference between the organizational creativity scores in the administrative dimension. Considering the relationship between teacher creative thinking tendency and organizational creativity in individual and administrative dimensions, teacher competencies should be revised and teachers should be able to develop their creativity before graduation.

KEYWORDS

21st century skills; creativity; creative thinking; teacher competence; preschool education.

INTRODUCTION

Expectations of every age from the individual are different. While human beings were expected to be able to develop strong gathering skills in order to survive in the past, such expectations gradually left their place to mental processes, and machines started to fulfill physical requirements instead of human beings. Today, the expectations of the age from the individual have changed considerably compared to thousands of years ago, and the skills the individual is expected to acquire are expressed by the researchers as 21st century skills (Ocal, 2018; Tugluk & Ocal, 2018). Although these skills are many, they can be listed as creativity, creative thinking, critical thinking, productivity, problem solving, harmony, cooperation, entrepreneurship, self-direction, social and intercultural interaction, leadership, personal and social responsibility, information literacy, learning how to learn and renew, digital literacy, etc. (Soh et al., 2015; Yadav et al., 2014; Trilling & Fadel, 2009).

Creativity, which is one of the 21st century skills and related to many skills, is important for the national economy as it affects the productivity of the individual and therefore the society. The societies of economically fast developing countries make inventions and are advanced in terms of technology and industry thanks to both their good educational level and making use of their creativity. (Karwowski et al., 2007). There are two main factors affecting creativity, which is of great importance to the country, society and the individual. These are hereditary and environmental factors. In other words, along with hereditary source of creativity to a certain extent (Kirisoglu, 2002 as cited in Isleyen & Kucuk, 2013), it can also be supported and developed by environmental factors (Scott et al., 2004).

Since there is no single definition of creativity in the literature, there are many different thoughts and perceptions about what creativity is. Creativity has been defined by DeSchryver and Yadav (2015) as a way of shaping the information obtained through real world observations by making use of imagination in order to produce a new product to meet a need. Torrance (1965), on the other hand, defined it as being sensitive to problems, incompatibilities and deficiencies, searching for solutions to these by making predictions and developing hypothesis, testing and changing the results, and re-testing them and communicating the results to others. In another definition, creativity is expressed as awareness, observation, imagination, conceptualization and rearrangement of existing elements to produce new ideas (Sternberg & Lubart, 1999). Creativity requires, before all, to be able to view critically and to bring new suggestions to events and situations (Emir & Bahar, 2003). In other words, critical thinking is closely related with creativity and crucial for being creative.

On the other hand, creative thinking is an interdisciplinary approach to knowledge and creativity. It involves challenging the limits of knowledge and creativity and requires critical thinking (DeSchryver & Yadav, 2015). In other words, creative thinking is to help the individual to produce new solutions and products by bringing different perspectives to the problems and to reach a synthesis (Emir & Bahar, 2003). To think creatively, one has to have flexibility, originality, fluidity and detailing skills (Torrance, 1972). Research has shown that teacher

behaviors influence students' thinking skills (Ozcan, 2010). For this reason, it could be said that the influence of the environment on one's thinking action is great.

The aim of the educational institutions, where the teacher plays an important part, is to prepare the individual for the world in which they live and to facilitate their adaptation to the environment. In this respect, education should develop an individual's high-level thinking skills and provide individuals with opportunities to develop themselves in problem solving, critical thinking and creativity skills (Gunes, 2012). In the preschool classroom environment, the most important person who will provide the experiences that will lead children to ask questions, satisfy their curiosity and discover is their preschool teacher. The personality, interests and qualifications of the teacher are important in terms of the educational environment it will present to children. Therefore, preschool teachers possessing creative thinking skills will positively influence the learning environment they create in the classroom (Isleyen & Kucuk, 2013; Oktay, 1998; Tok & Sevinc, 2012; Yenilmez & Yolcu, 2007). At their early age, children are naturally curious and want to discover new things. Therefore, they always ask questions and are open to experiences that surprise their minds (Szkolak & Martinez Lopez, 2013). In other words, preschool teachers who will provide these experiences to children should be open to these experiences themselves and present different ideas in terms of organizing classroom environment, planning activities and applying them to their interests in order to provide different experiences to children. However, it should also not be forgotten that the basic and psychological needs of children should be first met in order to support creative thinking in educational environments (Sternberg & Grigorenko, 2000). In other words teachers' creativity not only has positive effects on children, but it also positively affects one's job satisfaction and self-confidence (Kurtzber, 2005). So, being creative is important for both students and teachers.

There are many studies in the literature about the factors affecting creativity which is important for teachers and students and therefore the society. One of these studies was conducted by Tok and Sevinc (2012), which examined the effect of Successful Intelligence Theory based thinking skills education on preschool teachers' creative thinking skills candidates and used Torrance Creative Thought Test to collect the findings. It was revealed that, among the 19 sub-dimensions of this test, prospective teachers had significant differences in the sub-dimensions of originality, formal fluency, formal originality, verbal fluency, verbal originality, humor, stretching-trespassing the boundaries, colorful imagination, fantasy, abstraction of titles, and imagination.

There are some factors that have effect on the organizational creativity. Among the factors affecting organizational creativity are the available materials presented in the working environment, the management of innovations in the organization and motivation of the members of the organization for innovation (Amabile & Gryskiewicz, 1989). The leader has of course a lot of responsibility for innovation management and motivation of the members. Therefore, it is stated in the literature that the behaviors and attitudes of the leader also have a significant effect on organizational creativity. Yilmaz (2010) found a significant relationship

between organizational creativity and moral leadership in terms of ethical behavior, environmental ethics and ethical decision making. The school principal having an ethical understanding, telling the truth, being honest (Dilenschneider, 2005 as cited in Yilmaz, 2010), being fair, respecting the characteristics of others, making fair and democratic decisions, being polite and gentleman, being reliable (Cuilla, 1998 as cited in Yilmaz, 2010) are the indicators that they display ethical behaviors. In order to influence organizational creativity in a positive way, the leader should not only pay attention to these behaviors but also make the organizational climate suitable for the emergence of creativity because the research shows that work environment affects organizational creativity (Shalley, Gilson & Blum, 2000). For this reason, it is necessary to pay attention to factors such as frequent meeting of the employees, creating suitable environments where they can share their suggestions and thoughts, and supporting their active participation in decision-making process (Kochanek, 2005). In other words, leader styles are important for employees.

According to the studies, the organizational climate and leadership attitudes have an effect on the creativity of the teacher and the creativity of the teacher has an effect on the creativity of the children who will make the future society. The aim of this study is to examine the relationship of preschool teachers' creative thinking tendencies and organizational creativity

METHOD

Research Model

This research is in a correlational survey model. The survey model is described as studies that determine the interests or attitudes of participants so on. (Buyukozturk et al., 2008). The survey model in which two or more variables are compared or the relationships between them are determined is the correlational survey model (Karasar, 2007).

In this study, after determining creative thinking tendencies and organizational creativity of preschool teachers, the relationship among these variables was examined and comparisons were made in terms of different variables. Research questions are;

- Is there a relationship between preschool teachers' creative thinking tendencies and their organizational creativity?
- Does institution type, another job expectancy, number of child in classroom, professional experiences, and weekly working hours make difference in terms of preschool teachers' creative thinking tendencies and their organizational creativity?

Population and Sample

The research population is Turkiye's preschool teachers, the sample consists of 173 preschool teachers from different regions of Turkiye. The sampling method of the research is convenience sampling method. Table 1 shows preschool teachers' demographic information.

Table 1. Preschool Teachers' Demographic Distribution

Variables	Categories	n	%
Institution Type	State	123	71,1
	Private	50	28,9
If they wish to work in a different job	Yes	57	32,9
	No	116	67,1
Number of Children in the Class	0-10 children	11	6,4
	11-20 children	105	60,7
	21-30 children	54	31,2
	31 children or more	3	1,7
Professional Experience	0-2 years	42	24,3
	3-5 years	38	22
	6-8 years	26	15
	9 years or more	67	28,7
Weekly Working Hours	20-30 hours	107	61,8
	31-40 hours	41	23,7
	41 hours or more	25	14,5

When looked at the type of institution according to Table 1, it can be said that nearly 70% of the teachers work in state institutions and almost 30% work in private sector. While nearly 30% of the teachers stated that they wanted to do another job, almost 70% stated that they did not want. Nearly 6% of the participants had 0-10 students in classes, 61% had 11-20 students in the class, 31% had 21-30 students in the class and nearly 2% had more than 31 students in the class. Almost 25% of the teachers had 0-2 years, 22% had 3-5 years, 15% had 6-8 years and 28.7% had 9 years or more professional experience. 62% of the teachers work 20-30 hours a week, 24% 31-40 hours a week and 15% 41 hours a week.

Data Collection Tools

Personal information form: Personal Information Form was used to collect the demographic data of the pre-school teachers. The professional experience of the teachers, the type of institution (state or private), weekly working hours, the number of children in the class, and if they wanted to do another job or not are included.

Organizational creativity scale: The validity analysis and reliability analysis of this scale were made by Balay (2010). Item loads of the scale factors are between 47 and 88. The alpha values of the factors for each sub-dimension of the scale were found to be between 92 and 95. The scale consists of a total of 39 items, 16 items being individual, 11 being administrative and 11 being social. The items of the 5-point likert scale can be marked as "I totally disagree ," I partially agree", I moderately agree ", I strongly agree "and" I totally agree ". For this study, individual and administrative sub-dimensions of the scale were used.

Marmara Creative Thinking Tendencies Scale: Ozgenel and Cetin (2017) evaluated the validity and reliability of the study group which consisted of teachers. The item loads of the factors of the scale ranged from .429 to .799. The Cronbach alpha value was .87 in the overall scale and the alpha values of the factors ranged between .62 and .83. The scale consists of a total of 6 sub-dimensions and 25 items; 8 items of looking for innovation, 4 items of courage, 5 items of self-discipline, 3 items of curiosity, 2 items of doubt, and 3 items of flexibility. The items of the likert scale can be marked as “never”, “rarely”, “sometimes”, “usually” and “always”.

Collection of the Data

Firstly, “Personal Information Form” was developed by using “Google Form”. Individual and administrative sub-dimensions of Organizational Creativity Scale, and Job Satisfaction Scale were also used for gathering the data and added to the form. Then the link of the form was sent to the preschool teachers over the internet. Therefore, the data was gathered with preschool teachers filling the forms over the internet. Data collection process took approximately two months.

Analysis of the Data

Firstly, the normality test was performed to determine the appropriate analysis method. While Kruskal Wallis test was used for the number of children in the class variable because it did not show a normal distribution, for other variables T-test for independent samplings, Pearson correlation analysis and one way analysis of variance were used.

RESULTS

In this section, it is examined whether there is a significant difference between the organizational creativity scores of individual and administrative dimensions according to the variables of professional experience, type of institution, weekly working hours, number of children in class and if they wanted to do another job or not. In addition, the relationship between pre-participants’ organizational creativity in individual dimension, organizational creativity in administrative dimension and creative thinking tendencies were examined.

The findings of the creativity and job satisfaction of the preschool teachers in the individual dimension and the administrative dimension regarding the type of institution are given below.

As can be seen in Table 2, there is a significant difference in favor of those working in private institutions between pre-school teachers’ organizational creativity scores in the individual dimension ($t = 2.003$, $p = .47 < .05$) and the organizational creativity scores in the administrative dimension ($t = 3.621$, $p = .00 < .01$). There was no significant difference between the creative thinking tendency scores of preschool teachers according to the institution they worked ($t = -.572$, $p = .568 > .05$).

Table 2. Results of Preschool Teachers' Organizational Creativity Scores in Individual and Administrative Dimensions and Creative Thinking Tendency Scores According to Institution

	Institution	N	x	s	sd	t	p
Individual-wise Organizational Creativity	State	123	3,7536	0,51104	171	2.003	.047
	Private	50	3,9338	0,59473			
Administrative-wise Organizational Creativity	State	123	2,7576	0,87412	171	3.621	.000
	Private	50	3,3218	1,0535			
Creative Thinking Tendencies	State	123	4,1444	0,40077	171	-.572	.568
	Private	50	4,184	0,44248			

Table 3. Results of Preschool Teachers' Individual and Administrative Dimensions of Organizational Creativity and Creative Thinking Tendency Scores According to Whether they Wanted to Work at another Job or not

	Do you want to work at another job	**N**	**x**	**s**	**sd**	**t**	**p**
Organizational Creativity in Individual Dimension	I would want	57	3,79	.521	171	.219	.827
	I wouldn't want	116	3,81	.552			
Organizational Creativity in Administrative Dimension	I would want	57	2,6332	0,99318	171	2,81	.005
	I wouldn't want	116	3,0619	0,91677			
Creative Thinking Tendency	I would want	57	4,146	0,41819	171	-.220	.826
	I wouldn't want	116	4,1607	0,41118			

As seen in Table 3, while there was no significant difference between the pre-school teachers' organizational creativity scores in the individual dimension (t = .219, p = .827> .05) according to whether they wished to do another job or not, organizational creativity scores in the administrative dimension (t = 2.81). p = .005 <.01) differed significantly according to whether

they wished to do another job or not. This difference is in favor of preschool teachers who do not want a different job. There was no significant difference between preschool teachers' creative thinking tendency scores (t = -. 220, p = .826> .05) according to whether they wanted to do another job or not.

Table 4. Kruskal-Wallis Results of Organizational Creativity Scores of Preschool Teachers in Individual Dimension According to the Number of Students in Classes

	Number of Children in Class	**N**	**Mean Rank**	**sd**	**X^2**	**p**
Organizational Creativity in Individual Dimension	0 – 10	11	82,05	2	1.875	.392
	11-20	105	89,51			
	21 – 30	57	78,41			
Organizational Creativity in Organizational Dimension	0 – 10	11	99,09	2	.4.034	.133
	11-20	105	89,51			
	21 – 30	57	74,93			
Creative Thinking Tendencies	0 – 10	11	80,95	2	.751	.687
	11-20	105	88,07			
	21 – 30	57	81,43			

In Table 4, no significant difference was found between the pre-school teachers' organizational creativity scores in the individual dimension (p = .392> .05) and the organizational creativity scores in the administrative dimension (p = .133> .05) according to the number of students in their classes. Also, there was no significant difference between the creative thinking tendency scores of preschool teachers according to the number of students in their classes (p = .687> .05). According to the ANOVA results of preschool teachers' creative thinking tendencies (p = .343) and individual (p = .473) and administrative (p = .056) organizational creativity scores, there was no significant difference between preschool teachers according to their professional experience (p> .05). According to the ANOVA results of preschool teachers' creative thinking tendencies (p = .917), individual (p = .270) and administrative (p = .715) organizational creativity scores, there was no significant difference between groups according to weekly working hours. (p> .05).

Findings related to the relationship between organizational creativity scores of individual and administrative dimensions and creative thinking tendency scores of preschool teachers are given below.

Table 5. Correlation of Organizational Creativity Scores of Preschool Teachers in Individual and Administrative Dimensions and Creative Thinking Tendency

Feature		Individual Dimension	Administrative Dimension	Creative Thinking Tendency
Individual Dimension	r	1	.271**	.671
	p		.00	.00
	n	173	173	173
Administrative Dimension	r	.271**	1	.176
	p	.00		.02
	n	173	173	173
Creative Thinking Tendency	r	.671**	.176**	1
	p	.00	.02	
	n	173	173	173

When Table 5 is examined, it is seen that there is a weak, positive and statistically significant relationship between administrative individual and organizational creativity scores of preschool teachers (r = .271, p = .00 <.01). It is also seen that there is a high level positive and statistically significant relationship between participants' creative thinking tendencies and organizational creativity (r = .671, p = .00 <.05). Again according to Table 3.4, it is seen that there is a very weak, positive and significant relationship between the organizational creativity and creative thinking tendencies of the teachers in the administrative dimension (r = .176, p = .02 <.05).

DISCUSSION, CONCLUSION AND SUGGESTIONS

Preschool teachers working in private institutions were statistically seen to have significantly higher organizational creativity scores in administrative and individual dimensions than the teachers working in state institutions. This finding suggests that teachers of private institutions have more support for individual and administrative organizational creativity compared to state institutions. In a different study conducted with high school teachers, it was found that the organizational creativity of the teachers working in private sector was higher than the teachers working in the state school (Ugurlu and Ceylan, 2014). According to the institution they worked in, there was not statistically significant difference between the creative thinking tendency scores of participants. This shows that the type of institution, which is an external factor, does not affect the creative thinking tendency, which is an internal factor. The intrinsic motivation of the teacher was superior according to the research result

According to results it could be said that there was not statistically significant difference between the organizational creativity scores of the preschool teachers according to their willingness to do a different job. This situation shows whether they are satisfied with their job or not does not affect teachers' organizational creativity in individual dimension. According to

findings, the organizational creativity scores of the participants who are satisfied with being a preschool teacher and who are not in search of another profession have higher administrative creativity scores. This is a predicted result. When teachers are satisfied with their jobs their administrative organizational creativity increases. Their self-satisfaction might have a positive impact on this perception they have. There was not statistically significant difference between preschool teachers' creative thinking tendency scores according to their willingness to do a different job. Even if teachers are not satisfied with their jobs, this negative situation does not demotivate them for creative thinking.

There was no significant difference between organizational creativity scores of the participants in individual and administrative dimensions and creative thinking tendency scores of participants according to the number of students in their classes. This situation shows that the negativities that may arise from the number of students do not affect teachers' individual and administrative organizational creativity and creative thinking tendencies. Preschool teachers' individual and administrative organizational creativity scores and creative thinking tendency scores did not show significant differences in terms of professional experience and weekly working hours. This finding indicates that creativity of teachers who worked for many years does not fade away, contrary to the popular belief.

While the organizational creativity scores of participants increased in the individual dimension, the organizational creativity scores in the administrative dimension also increased. This shows that teachers' personality traits affect their perception of working environment. This is an expected result.

The creative thinking tendencies of preschool teachers increased while individual and administrative organizational creativity scores increased. However, while creative thinking tendencies were found to be highly correlated with the individual dimension, the correlation with the administrative dimension was found to be very weak. As the individual dimension is mostly related to the individual themselves and the administrative dimension has the factor of the administrators, this finding is essentially a foreseeable one. As a matter of fact, the creative thinking tendency can be counted among the personality traits of the individual and it is less related to external factors than internal factors.

Yilmaz and Karahan (2010) examined leadership behavior, organizational creativity and employee performance, and showed that vision-oriented leadership behavior has more effect on organizational creativity than employee-oriented leadership. This shows that leadership characteristics affect organizational creativity. It can said that organizational creativity in administrative dimension could have an effect on the performance of the employee and thus their creativity.

Considering the relationship among teachers' creative thinking tendency and organizational creativity in individual and administrative dimensions, teacher competencies should be revised and teachers should be able to develop their creativity before graduation. Because of this, in-service trainings that support teachers' creativity can be implemented. It can

be also suggested that before being admitted to the teaching departments of universities, prospective teachers may be subjected to certain criteria related to their personality along with academic success. This study can be repeated with a larger sample group and by introducing different variables findings can be re-examined.

REFERENCES

Amabile, T. M., & Gryskiewicz, N. D. (1989). The creative environment scales: Work environment inventory. *Creativity Research Journal,* 2 (4), 231-253.

Balay, R. (2010). Ogretim elemanlarin orgutsel yaraticilik algilari. *Ankara Universitesi Egitim Bilimleri Fakultesi Dergisi,* 43 (1), 41-78.

Buyukozturk, Ş., Kilic Cakmak, E., Akgun, O. E., Karadeniz, S., & Demirel, F. (2008). *Bilimsel araştırma yöntemleri* (1st ed.). Ankara: Pegem Akademi.

DeSchryver, M. D., & Yadav, A. (2015). Creative and computational thinking in the context of new literacies: Working with teachers to scaffold complex technology-mediated approaches to teaching and learning. J*ournal of Technology and Teacher Education*, 23 (3), 411-431.

Emir, S. & Bahar, M. (2003). Yaratıcılıkla ilgili öğretmen ve öğrenci görüşleri. *Abant İzzet Baysal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi,* 6 (6), 91-110.

Gunes, F. (2012). Öğrencilerin düşünme becerilerini geliştirme. *Türklük Bilimi Araştırmaları,* (32), 127-146.

Isleyen, T., & Kucuk, B. (2013). Öğretmen adaylarının yaratıcı düşünme düzeylerinin farklı değişkenler açısından incelenmesi. *Mustafa Kemal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi,* 10 (21), 199-208.

Karasar, N. (2007). *Bilimsel arastirma yontemi.* (17th ed.). Ankara: Nobel Yayın Dağıtım.

Karwowski, M., Gralewski, J., Lebuda, I., & Wiśniewska, E. (2007). Creative teaching of creativity teachers: Polish perspective. *Thinking Skills and Creativity,* 2 (1), 57-61.

Kochanek, J.R. (2005). *Building trust for beter schools (Research-based practices).* California: Corwin Pres.

Kurtzberg, T. R. (2005). Feeling creative, being creative: An empirical study of diversity and creativity in teams. *Creativity Research Journal,* 17 (1), 51-65.

Oktay, A. (1998). Turkiye'de ogretmen egitimi. *Milli Egitim,* 137, 26-27.

Ocal, S. (2018). *Okul öncesi eğitime devam eden 60-66 ay çocuklarına yönelik geliştirilen STEM programının çocukların bilimsel süreç becerilerine etkisinin incelenmesi.* (Yüksek Lisans Tezi). Yıldız Teknik Üniversitesi, İstanbul.

Ozcan, D. (2010). Contributions of English teachers' behaviours on students' creative thinking abilities. *Procedia-Social and Behavioral Sciences,* 2 (2), 5850-5854.

Ozgenel, M., & Cetin, Ö. (2017). Marmara yaratici dusunme egilimleri olceginin gelistirilmesi: Gecerlik ve guvenirlik calismasi. *Marmara Universitesi Ataturk Egitim Fakü-ultesi Egitim Bilimleri Dergisi,* 46, 113-132.

Scott, G., Leritz, L. E., & Mumford, M. D. (2004). The effectiveness of creativity training: A quantitative review. *Creativity Research Journal,* 16(4), 361-388.

Shalley, C. E., Gilson, L. L., & Blum, T. C. (2000). Matching creativity requirements and the work environment: Effects on satisfaction and intentions to leave. *Academy of Management Journal,* 43 (2), 215-223.

Soh, L. K., Shell, D. F., Ingraham, E., Ramsay, S., & Moore, B. (2015). Learning through computational creativity. Commun. *ACM*, 58 (8), 33-35.

Sternberg, R. J., & Grigorenko, E. (2000). *Teaching thinking for successful intelligence.* Arlington Heights, II: Skylight.

Sternberg, R. J., & Lubart, T. I. (1999). The concept of creativity: Prospects and paradigms. *Handbook of Creativity*, 3-15.

Szkolak, A., & Martinez Lopez, A. (2013). Creative teacher of early childhood education. *Pedagogika Przedsszkolnai Wczesnoszkolna,* 73-85.

Tok, E., & Sevinc, M. (2012). Düşünme becerileri eğitiminin okul öncesi öğretmen adaylarının yaratıcı düşünme becerilerine etkisi. *Eğitim ve Bilim*, 37 (164).

Torrance, E. P. (1965). Scientific views of creativity and factors affecting its growth. *Daedalus*, 663-681.

Torrance, E. P. (1972). Creative young women in today's world. *Exceptional Children,* 38 (8), 597-603.

Trilling, B., & Fadel, C. (2009). *21st century skills: Learning for life in our times*. John Wiley & Sons.

Tugluk, M.N., & Ocal, S. (2018). Erken çocukluk eğitiminde STEM yaklaşımı. (Edt: Gürol, A). *Erken çocuklukta öğrenme yaklaşımları*. Efe Akademi Yayınları.

Ugurlu, C. T., & Ceylan, N. (2014). An examination of teachers' perceptions of organizational cerativity and ethical leadership. *Mersin University Education Faculty Journal*, 10(2), 96-102.

Yadav, A., Mayfield, C., Zhou, N., Hambrusch, S., & Korb, J. T. (2014). Computational thinking in elementary and secondary teacher education. *ACM Transactions on Computing Education (TOCE),* 14 (1), 5.

Yenilmez, K., & Yolcu, B. (2007). Öğretmen davranışlarının yaratıcı düşünme becerilerinin gelişimine katkısı. *Sosyal Bilimler Dergisi,* 18, 95-105.

Yilmaz, E. (2010). The analysis of organizational creativity in schools regarding principals' ethical leadership characteristics. *Procedia-Social and Behavioral Sciences*, 2(2), 3949-3953.

Yilmaz, H., & Karahan, A. (2010). Liderlik davranışı, örgütsel yaratıcılık ve işgören performansı arasındaki ilişkilerin incelenmesi: Uşak'ta bir araştırma. *Yönetim ve Ekonomi: Celal Bayar Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi,* 17 (2), 145-158.