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Creativity as a Cross-program Skill of Teachers: Based on TALIS 2018 Data

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Abstract
This study aims to examine the relationship between teachers' sense of readiness to teach cross-curricular skills (eg creativity, critical thinking, problem-solving) and their professional development needs for this area. In addition, it has been tried to examine whether the professional development needs of teachers for teaching cross-program skills (for example, creativity, critical thinking, problem-solving) change according to whether previous teacher training have taken courses in this field. The research is in the scanning model. The participants of the research are the teachers who answered the questions of the researchers who participated in The Teaching and Learning International Survey (TALIS). While the first sub-problem was analyzed with the data of 236409 teachers, the second sub-problem was examined with the data of 247597 teachers. The data of the research was obtained from the TALIS 2018 page. Within the scope of TALIS 2018, teachers' perceptions of their readiness to teach cross-program skills (for example, creativity, critical thinking, problem-solving) were asked as an ordinal scale as "Not at all", "Somewhat", "Well", "Very well". The needs of participation in professional development activities were asked as "No need at present", "Low level of need", "Moderate level of need" and "High level of need". In the analysis of the data, the Goodman-Kruskal Gamma test was used to determine the relationship in ordinal scales. Mann-Whitney U test was applied for 2 X c dimensional tables to determine the change according to the previous course taking. To determine whether there is a relationship between the questions, the Gamma coefficient, and the Mann-Whitney U test were performed for the groups as (2Xc). According to the findings of the study, a moderately inverse significant relationship was found between the teachers' feeling ready to teach cross-program skills (eg creativity, critical thinking, problem-solving) and their professional development needs for this area. On the other hand, teachers' cross-program skills (eg creativity, critical thinking, problem-solving) change their professional development needs for teaching compared to taking courses in previous teacher training. There is a significant difference in favor of those who have not taken courses before, that is, those who have not taken a course, even with a small margin, feel the need for professional development.

Keywords: Creativity, cross-curricular skills, TALIS 2018.

Introduction

It is indispensable for human beings to find inventions within the scope of their struggle for survival, to make discoveries and produce new things to make life easier. To make life more comfortable and to do things that leave a mark in the world, people are in a constant act of creation. Although ages and dates have changed, this reality has not changed. The invention of the wheel, the discovery of the internet, the making of works of art are examples of this reality. To realize creation and production, it is necessary to look at it from an entrepreneurial point of view. Because the importance of entrepreneurial and creative perspectives increases day by day, its place in education systems is expanding.

Learning and innovation skills are among the four basic skills included in the framework he created within the scope of 21st-century learning vision. When the sub-skills are examined, it is seen that they are expressed as creativity and innovation, critical thinking and problem solving, and communication and cooperation (P21, 2019). Entrepreneurial behaviors, creativity, and innovations are among the cornerstones of the economies and development of countries (Yıldız ve Alp, 2012). The role of entrepreneurial individuals in economic development has been great since the early periods of economic history, with their putting creative ideas into action (Alerasoul, Tiberius & Bouncken, 2022; Özkul, 2007). The relationship between innovation, creativity, and entrepreneurship, which is expressed as the transformation of ideas into production, is the main determinant of the rise in the economy and the development of countries (Er, 2013; Fadaee & Abd Alzahrh, 2014). Making creative thinking a way of life is an indispensable option for countries that put productivity based on development and development (Karakuş & Özbilgin, 2020). The fact that the importance of creative ideas is so high in the development levels of countries is evidence of how much creativity should be emphasized in education. Based on this

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evidence, the creativity skills of teachers, who are practitioners of creativity development activities and educational programs that take their place in education programs, have also become a questionable reality.

At the point of developing entrepreneurship, creativity education is an academic stage where serious success should be aimed. As with many competencies, creativity takes place in people's potential. However, the frequency of use of this competence and accordingly the level of development are different. Considering that creativity is a feature that can be developed, educational institutions, and especially teachers, have important responsibilities in education-teaching processes to reveal, process, and develop them (Yazar, 2022). Education aims to develop students' creativity by increasing the frequency of their use (Lasky & Yoon, 2020). It has been concluded that creative thinking-oriented teaching practices not only improve students' creativity levels but also positively affect their design and development abilities. In the creation of classroom environments where creativity will be developed, care should be taken to create democratic environments where students can act comfortably and express their thoughts without hesitation (Çiftçi, Yayla & Sağlam, 2021). It is essential for students to be active in the lesson and to be encouraged to think critically and to raise entrepreneurial and creative individuals (Yurtseven & Ergün, 2018). Students and learners in entrepreneurship education work like colleagues (Heathcote, 2010).

In addition to the ongoing discussions about how creativity education will be, it is another problem that teachers do not know exactly how to implement activities that will develop creativity (Koç & Demirkan, 2020). In the research conducted by Polat & Kontaş (2018), it was found that the creativity levels of teachers were low. In this case, it indicates that teachers are inclined towards the traditional teaching approach. Traditional education systems often do not give the necessary importance to creativity. In the traditional education approach, while it is aimed that the students receive the existing information directly, there are no activities that will improve the creativity of the students and support their learning by doing and experiencing. A contemporary perspective is needed for creativity education. One of the most important features of contemporary education systems from the perspective of creativity is that creativity can be developed. creativity adventures of individuals start from preschool and can be developed through various variables of the school environment. however, the teacher-centered environment envisaged by traditional education may blunt creativity (Ünveren, 2002).

While creativity is increasing value when positive conditions are created, unfortunately, deprivation of interaction not only prevents the development of creativity but can even push its level back. At this point, it is inevitable to say that teachers have an important task when it is taken into consideration that educational institutions should raise creative thinking individuals and develop these characteristics of individuals (Yeşilyurt 2020). Teachers provide students with problem-solving skills that organize the free classroom environment, and initiate higher-order thinking processes, to reveal creativity behavior in students. Therefore, the behaviors of teachers to reveal creativity in their relations with their students are important (Sadıç & Alcı, 2021).

Considering that the role of the teacher in the development of creativity is so important, it can be said that creativity-related lessons should be given to teacher candidates during the training process of teachers. In the study conducted by Yılmaz and Güven (2019), it was concluded that the creativity levels of the teacher candidates who took the creativity course were higher than the others. According to the results of the research conducted by Leylak & Say (2021), which supports the results of the study conducted by Yılmaz and Güven (2019); It was found that there is a positive and highly significant relationship between creative personality traits of the primary school teacher candidates and their ability to support creativity. To provide an education that develops creativity, teachers should pay attention to and care about the individual characteristics of students. Teachers can carry out this process successfully if they have proficiency above a certain level. Starting from this important point in education, this research aims to determine how ready teachers feel to provide students with some basic skills such as creativity. For this purpose, TALIS 2018 data was used, taking into account the sample size, to reach the most reliable results. Starting from here the aim of this study is to examine the relationship between teachers' sense of readiness to teach cross-curricular skills (eg creativity, critical thinking, problem-solving) and their professional development needs for this area. In addition, it has been tried to examine whether the professional development needs of teachers for teaching cross-program skills (for example, creativity, critical thinking, problem-solving) change according to whether previous teacher training have taken courses in this field.

Method

In this section, the model of the study, its participants, data collection tools, and data analysis are explained. Since the study was carried out to reveal the existing situation, the survey model was chosen as the basis. TALIS 2018 data set was used in the study. The structure of the research is explained under the main headings.

Model the research

This study was based on data from the Teaching and Learning International Survey (TALIS) 2018, organized by the Organization for Economic Co-operation and Development (OECD). Therefore, the study is in the survey model, which is one of the quantitative research types.

Study group

In the TALIS 2018 study, a questionnaire was applied to teachers and principals working at International Standard Classification of Education (ISCED) Level 1, ISCED Level 2 and ISCED Level 3. From this applied questionnaire, the answers of the teachers to the questions suitable for the study were used as data. While the first sub-problem was analyzed with the data obtained from 236409 teachers, the second sub-problem was examined with the data obtained from 247597 teachers. The distribution of the participants included in the study by country is presented in Table 1.

Table 1. The distribution of the participants included in the study by country

Countries	N (for the first sub problem)	N (for the second sub-problem)
Australia	7881	8085
Austria	3729	4095
Belgium	4884	4992
Brazil	4879	5007
Bulgaria	2489	2682
Chile	1840	1902
Chinese Taipei	9489	9659
Colombia	4213	4382
Croatia	5617	5805
Cyprus	1376	1474
Czech Republic	5695	5866
Denmark	6460	6611
Estonia	2493	2733
Finland	2486	2671
France	3278	3961
Georgia	3904	4411
Hungary	3103	3159
Israel	2130	2270
Italy	3148	3383
Japan	6429	6617
Kazakhstan	6448	6538
Korea	5865	5959
Latvia	1990	2133
Lithuania	3169	3679
Malta	2154	2292
Mexico	2572	2624
Netherlands	3075	3207
New Zealand	2029	2097
Norway	3782	3911
Portugal	6402	6975
Russian Federation	3728	3905
Saudi Arabia	1711	2124
Singapore	3170	3218
Slovak Republic	2747	2859
Viet Nam	13563	13796
Slovenia	3964	4114
South Africa	1725	1845
Spain	13997	14410
Sweden	7251	7441
United Arab Emirates	20771	22428
Turkey	17866	18467
United States	2341	2416

England (United Kingdom)	3952	4043
Flemish Community (Belgium)	2508	2553
Alberta (Canada)	1989	2012
Romania	3381	3533
Ciudad Autónoma de Buenos Aires (Argentina)	5070	5363
Shanghai (China)	3666	3890
Total	236409	247597

Data collection tools

The data of the study was obtained from the TALIS 2018 page. In the TALIS 2018 survey, teachers were taught asked "where the following elements included in your formal, and to what extent did you feel prepared for each element in your teaching" (yes/no) in "teaching cross-curricular skills (e.g. creativity, critical thinking, problem-solving)". Teachers were asked to answer these questions on a ranking scale as "not at all", "somewhat", "well", and "very well".

In addition, another question utilized in the study is "teaching cross-curricular skills (e.g. creativity, critical thinking, problem-solving)" posed within the scope of "for each of the areas listed below, please indicate the extent to which you currently need professional development". They were asked to answer this question in the order of "no need at present", "low level of need", "moderate level of need" and "high level of need". The data obtained within the scope of these questions were evaluated during the analysis process.

Data Analysis

The Goodman-Kruskal Gamma test was used to determine the relationship between teachers' sense of readiness and their need for professional development. The cut-off value for the significance of the results was accepted as .05. Babbie, Halley & Zaino (2007) opinions were used to interpret the Goodman-Kruskal Gamma coefficient. Accordingly, it was expressed as 0 for "not related", 0.01-0.09 for "poorly related", 0.1-0.29 for "medium" and, 0.30-0.99 for "strongly related".

The second question of the research is to determine whether the professional development needs of teachers for "teaching cross-curricular skills (e.g. creativity, critical thinking, problem-solving)" have changed significantly (yes/no) depending on whether they have taken courses in teacher training in this field. In this context, the Mann-Whitney U test was applied for 2 X c-dimensional tables. The cut-off value for the significance of the results was accepted as .05. The effect value of the difference was calculated with η2. The result obtained is in line with the views of Cohen (1988); A value between 0.01 and 0.05 was evaluated as low, between 0.06 and 0.13 as moderate, and greater than 0.14 as a strong effect.

Findings

The Goodman-Kruskal Gamma coefficient was calculated to determine whether there is a significant relationship between teachers' sense of readiness for teaching cross-curricular skills (e.g. creativity, critical thinking, problem-solving) and their need for in-service training in this field, and the results are presented in Table 2.

Tablo 2. Goodman-Kruskal Gamma results

	Prof.dev needs Teaching cross-curricular skills					**Gamma**
Prep. for tch. elements Teaching cross-curricular skills	**No need at present**	**Low level of need**	**Moderate level of need**	**High level of need**	**Total**	
Not at all	4714	8044	12043	6542	31343	-0,175*
Somewhat	7608	19362	27934	11418	66322	
Well	15248	28991	33664	17333	95236	
Very well	14751	12650	9892	6215	43508	
Total	42321	69047	83533	41508	236409	

*p<0,05

There is a moderately significant negative correlation between teachers' feeling of readiness and their need for in-service training in this field. In other words, as they feel ready, the need for in-service training in this field decreases. Or the opposite can also be stated.

To determine whether the needs of teachers for in-service training in this field change depending on whether or not they take courses in teacher training for this field, the Mann-Whitney U test was performed for 2 X c-dimensional tables and the results are presented in Table 3.

Table 3. Mann-Whitney U test results

	Elements in form. educ. Teaching cross-curricular skills	N	Mean Rank	Sum of Ranks	U	Effect size
Prof.dev needs Teaching cross-curricular skills	Yes	176821	121140,72	21420224060	5787302632*	0,003
	No	70776	130440,22	9232036940		

*p<0.05

According to the analysis of the data, the professional development needs of teachers to teach cross-program skills (eg creativity, critical thinking, problem-solving) vary based on taking courses in teacher education. There is a significant difference in favor of those who have not taken courses before, that is, those who have not taken courses, even with a small margin, feel the need for professional development.

Results, Conclusions, and Recommendations

TALIS 2018 data was used in this study. It is stated by Zhang, Zhao, Xu, Liu & Wu, (2021) that TALİS 2018 data is an important document that has an impact on the professional development of teachers and policymakers. In the study conducted by Titrek and Sarı (2020), it is stated that it is necessary to keep up with the changes in every field in the education sector. There is a moderately significant negative correlation between teachers' feeling ready for teaching cross-curricular skills (e.g. creativity, critical thinking, problem-solving) and their need for in-service training in this field. In other words, as they feel ready, the need for in-service training in this field decreases. As teachers feel ready to teach creativity, critical thinking, and problem-solving skills, they need less training in creativity, problem-solving and critical thinking. In the study conducted by Aslan and Arslan Cansever (2009), primary school teachers' awareness of the importance of creativity in education and their attitudes toward using creativity in their lessons were examined.

According to the findings, all the participating teachers stated that creativity is important in education and they make an effort to use creativity in their lessons. However, they stated that they faced significant obstacles arising from both parents, school administrations, and the system. The study conducted by Erdoğdu (2006), it was aimed to reveal the relationship between creativity, teacher behaviors, and academic achievements. The fact that there are low but significant relationships between students' creativity and academic achievement is in line with the findings of this study. In the study conducted by İşenler and Küçük (2013), the creative thinking levels of teacher candidates were examined in terms of different variables. The necessity for teachers to be creative and open to change also stems from their role models for their students. In particular, the personal characteristics of teachers are more prominent in their extracurricular activities (Blandul, 2016).

According to the research findings, it was concluded that the creativity levels of the pre-service teachers were lower than the fluency level in flexibility and originality dimensions. In the study conducted by Konaklı and Akdeniz (2022), the reasons why teachers resist change, how they show resistance, and the suggestions of teachers and school administrators to prevent resistance were examined. The results show that teachers' resistance to change affects the school environment, therefore interpersonal relations and educational success. It is suggested that reasonable and useful changes should be made for teachers to have a positive attitude towards change and that the changes should not have a dimension that will put teachers under stress.

According to the analysis of the data, the professional development needs of teachers to teach cross-program skills (eg creativity, critical thinking, problem-solving) vary according to taking courses in teacher education. There is a significant difference in favor of those who have not taken courses before, that is, those who have not taken courses, even with a small margin, feel the need for professional development. In the study conducted by Martin, Rautiainen, Tarnanen & Tynjälä (2022) it is emphasized that teachers should include activities that will improve their creativity in their professional development processes. The study conducted by Yenice and Yavaşoğlu (2018), it was aimed to determine the individual innovativeness and individual creativity levels of science teacher candidates, and to determine the relationship between individual innovativeness levels and individual creativity. Considering that innovative approaches in the

education process will increase the professional success of teachers and thus the success of the education system, the importance of teachers' creativity emerges (Blömeke, Nilsen & Scherer, 2021).

According to the results obtained, it was determined that pre-service science teachers were in the category of interrogators in terms of their innovativeness levels, and they were at a moderate level in terms of scientific creativity. Based on TALİS 2018 data, it can be said that teachers' perceptions of school culture are effective in producing creative solutions (Wei, Chung & Smith, 2022). The study conducted by Tok and Sevinç (2012), it was aimed to determine the effect of the thinking skills training program based on Robert Sternberg's Successful Theory of Intelligence on the creative thinking skills of preschool teacher candidates. When the results are examined, the posttest mean scores in the creative thinking test pretest and posttest scores of the education group in terms of verbal fluency, verbal flexibility, verbal originality, figural fluency, figural originality, the abstractness of titles, figural enrichment, emotional expressions, unusual visualization, the richness of imagination are significantly higher than the pretest mean scores degree high.

Considering the difference between the posttest scores of the education and comparison groups; there were significant differences in favor of the education group in terms of verbal fluency, verbal originality, figural originality, the abstractness of titles, richness of imagination and fantasy. The study conducted by Akcanca and Cerrah Özseveç (2016), it was aimed to determine the thoughts of pre-service science teachers about creativity and factors related to creativity. As a result of the research, it was determined that the pre-service teachers thought that creativity could be developed and that the teacher played an important role in this regard. Likewise in many teacher training programs, it is emphasized that teachers should be trained to use their creative skills in the science education process (Schwartz, Schuster, Cobern, Applegate, Titrek & İskender, 2010). In addition, it was concluded that pre-service teachers thought that the school program was not effective in developing creativity. Considering the findings of this study and the studies in the literature, it can be said that creativity is very important in the education process and plays a major role in the development of countries. In addition, the importance of providing pre-service teachers with an education that will improve their creativity in the teacher training process is a point that needs to be underlined.

Suggestions

Based on the findings of this study, some suggestions can be made.

- Teachers should be made aware of creativity.
- Creativity-enhancing activities should be done for teacher candidates in teacher education.
- Teachers should be supervised on whether they add qualities that support creativity to the teaching process.
- Researchers should do more work on teachers and creativity.

References

Akcanca, N. & Cerrah Özsevgeç, L. (2016). Fen bilimleri öğretmen adaylarının yaratıcılığa ilişkin düşüncelerinin belirlenmesi. *Bayburt Eğitim Fakültesi Dergisi, 11*(2), 0-0. Retrieved from https://dergipark.org.tr/en/pub/befdergi/issue/28762/307849.

Akdeniz, R. K. & Konaklı, T. (2022). The Emergence, Reasons and Results of Resistance to Change in Teachers. International Journal on Lifelong Education and Leadership, 8(1), 49-67. DOI: 10.25233/ijlel.1107137.

Alerasoul, S. A., Tiberius, V., & Bouncken, R. B. (2022). Entrepreneurship and innovation: The coevolution of two fields. *Journal of Small Business Strategy, 32*(2), 128-151.

Aslan, N. & Arslan Cansever, B. (2010). Eğitimde yaratıcılığın kullanımına ilişkin öğretmen tutumları. *TÜBAV Bilim Dergisi*, *2*(3). Retrieved from https://dergipark.org.tr/en/pub/tubav/issue/21516/614979.

Babbie, E. R., Halley, F., & Zaino, J. (2007). *Adventures in social research: Data analysis using SPSS 14.0 and 15.0 for Windows*. Pine Forge Press.

Blândul, V. C. (2016). Some Characteristics of Teachers' from Non-Formal Education Perspective . *International Journal on Lifelong Education and Leadership*, 2(2), 27-30. Retrieved from https://dergipark.org.tr/en/pub/ijlel/issue/39625/468923.

Blömeke, S., Nilsen, T., & Scherer, R. (2021). School innovativeness is associated with enhanced teacher collaboration, innovative classroom practices, and job satisfaction. *Journal of Educational Psychology, 113*(8), 1645–1667. https://doi.org/10.1037/edu0000668

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences.* (2nd). New Jersey: Lawrence Erlbaum.

Çiftci, S. , Yayla, A. & Sağlam, A. (2021). 21. yüzyıl becerileri bağlamında öğrenci, öğretmen ve eğitim ortamları. *RumeliDE Dil ve Edebiyat Araştırmaları Dergisi, 24*, 718-734. DOI: 10.29000/rumelide.995863.

Er, P. H. (2013). Girişimcilik ve yenilikçilik kavramlarının iktisadi düşüncedeki yeri: Joseph A. Schumpeter. *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 29*, 75-85. Retrieved from https://dergipark.org.tr/en/pub/susbed/issue/61807/924672.

Erdoğdu, D. M. Y. (2006). Yaratıcılık ile öğretmen davranışları ve akademik başarı arasındaki ilişkiler. *Elektronik Sosyal Bilimler Dergisi, 5*(17), 95-106. Retrieved from https://dergipark.org.tr/en/pub/esosder/issue/6131/82229

Fadaee, A., & Abd Alzahrh, H. O. (2014). Explaining the relationship between creativity, innovation and entrepreneurship. *International Journal of Economy, Management and Social Sciences, 3*(1), 1-4.

Heathcote, D. (2010). Uzman Mantosu Yaklaşımı: 26-28 Kasım 2009 liseli gençlerle atölye çalışması. Yaratıcı Drama Dergisi, Dorothy Heathcote Özel Sayısı, 111-214. Retrieved from https://dergipark.org.tr/en/pub/ydrama/issue/23805/253672.

İşleyen, T. & Küçük, B. (2013). Öğretmen adaylarının yaratıcı düşünme düzeylerinin farklı değişkenler açısından incelenmesi/Examining prospective teachers' level of creative thinking in terms of different variables. *Mustafa Kemal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 10*(21) , 199-208. Retrieved from https://dergipark.org.tr/en/pub/mkusbed/issue/19547/208196

J.-H. Wei, H.-H. Chuang, T.J. Smith, et al. (2022), The relationship between a school culture's openness to creative solutions and inquiry-based teaching practices. *Journal of Creative Behavior, 56* (3) pp. 382-395, 10.1002/jocb.535

Karakuş, M. & Özbilgin, M. (2020). İlkokul dördüncü sınıf öğrencilerinin sözel ve şekilsel yaratıcılık düzeylerinin incelenmesi. *Manisa Celal Bayar Üniversitesi Sosyal Bilimler Dergisi, 18* (4) , 171-183. DOI: 10.18026/cbayarsos.675419.

Koç, O & Demirkan, Ö. (2020). Yaratıcı düşünmenin eğitim ortamlarında desteklenmesi sürecinde teknoloji entegrasyonunu inceleme/Investigation of technology integration in the process of supporting creative thinking in educational environment. *Eğitimde Teknoloji Uygulamaları Dergisi/Journal of Technology Applications in Education, 1*(1), 58-75 https://doi.org/10.29329/jtae.2020.283.5.

Lasky, D., & Yoon, S. (2020). A creative classroom for everyone: An introduction to a small 'creativity framework. *Thinking Skills and Creativity, 36*, 100660. https://doi.org/10.1016/j.tsc.2020.100660.

Leylak, D. & Say, S. (2021). Sınıf öğretmeni adaylarının yaratıcı kişilik özellikleri ile yaratıcılığı destekleme becerileri arasındaki ilişkinin incelenmesi. *Uluslararası Sosyal Bilgilerde Yeni Yaklaşımlar Dergisi, 5*(1) , 177-190. DOI: 10.38015/sbyy.911805

Martin, A., Rautiainen, A. M., Tarnanen, M., & Tynjälä, P. (2022). Teachers as writing students: narratives of professional development in a leisure-time creative writing community. *Teacher Development*, *26*(3), 432-451. https://doi.org/10.1080/13664530.2022.2083220.

Özkul, . A. (2007). Kapitalist sistemin sürükleyici aktörleri: ekonomik teoride girişimciler. *Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 12*(3) , 343-366. Retrieved from https://dergipark.org.tr/en/pub/sduiibfd/issue/20835/223255.

Partnership for 21st Century Learning (2019). Framework for 21st Century Learning. http://static.battelleforkids.org/documents/p21/P21_Framework_Brief.pdf adresinden 21.12.2020 tarihinde erişilmiştir.

Schwartz, R., Schuster, D., Cobern, W., Applegate, B., Titrek, O. & İskender, M. (2010). Assessing teachers' orientations toward inquiry science teaching: instrument development and international collaboration In G. Cakmakci & M. F. Taşar (Eds.), Contemporary science education research: learning and assessment (pp. 235–246). Ankara, Turkey: Pegem Akademi.

Sadıç, T. ve Alcı, B. (2021). Öğretmenlerin yaratıcılığı besleme davranışı ölçeğinin Türkçeye uyarlanması: geçerlik ve güvenirlik çalışması. *Uluslararası Türkçe Edebiyat Kültür Eğitim Dergisi, 10*(3), 1203-1214. Retrieved from https://dergipark.org.tr/en/pub/teke/issue/65009/1000832.

Ünveren, D. (2020). Türkçe öğretiminde hayal gücü ve yaratıcılık eğitimi. *OPUS–Uluslararası Toplum Araştırmaları Dergisi, 15*(21), 378-404. DOI: 10.26466/opus.656984.

Yazar, İ. (2022). Yaratıcılık ve yaratıcı yazma. *International Journal of New Trends in Arts, Sports & Science Education (IJTASE), 11*(3), 178-189.

Yenice, N. & Yavaşoğlu, N. (2018). Fen bilgisi öğretmen adaylarının bireysel yenilikçilik düzeyleri ile bireysel yaratıcılıkları arasındaki ilişkinin incelenmesi. *Eğitimde Kuram ve Uygulama, 14* (2), 107-128. DOI: 10.17244/eku.334590.

Titrek, O. & Sarı, E. (2020). The School Administrator's Social Network Use Intentions . *International Journal on Lifelong Education and Leadership,* 6(1), 1-9. Retrieved from https://dergipark.org.tr/en/pub/ijlel/issue/55906/567563.

Tok, E., & Sevinç, M. (2012). Düşünme becerileri eğitiminin okul öncesi öğretmen adaylarının yaratıcı düşünme becerilerine etkisi. *Eğitim ve Bilim, 37*(164). http://eb.ted.org.tr/index.php/EB/article/view/744 adresinden erişildi.

Yeşilyurt, E. (2020). Yaratıcılık ve yaratıcı düşünme: Tüm boyut ve paydaşlarıyla kapsayıcı bir derleme çalışması. *OPUS International Journal of Society Researches, 15*(25), 3874-3915. DOI: 10.26466/opus.662721.

Yıldız, S. ve Alp, S. (2012). Girişimcilik teorisi çerçevesinde kobilerin ekonomiye etkileri ve rekabet koşullarını etkileyen faktörler. *Girişimcilik ve Kalkınma Dergisi, 7*(2), 29-49. http://gkd.comu.edu.tr/images/form/dosya/dosya_408012.pdf/.

Yılmaz, H., & Güven, Y. (2019). Yaratıcılık ve hoşgörü: Okul öncesi öğretmen adayları üzerine bir araştırma. *Erken Çocukluk Çalışmaları Dergisi, 3*(2), 258–277. https://doi.org/10.24130/eccd-jecs.1967201932165

Yurtseven, R. & Ergün, M. (2018). İlkokul öğrencilerinin girişimcilik becerilerinin geliştirilmesine yönelik öğretmen görüşleri. *International Journal of Social Science Research, 7*(1) , 118-140 . Retrieved from https://dergipark.org.tr/en/pub/ijssresearch/issue/38209/434121.

Zhang, X., Zhao, C., Xu, Y., Liu, S., & Wu, Z. (2021). Kernel causality among teacher self-efficacy, job satisfaction, school climate, and workplace well-being and stress in TALIS. *Frontiers in Psychology*. https://doi.org/10.3389/fpsyg.2021.694961.