

Improvement of soft skills in preschool teachers through gamification

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Abstract

With the use of education in technology, many applications in the field of education are among these teaching methods and techniques in gamification. Gamification provides many skill acquisitions. In this study, it is aimed to examine the opinions of teachers about the social skills gains of gamification for the application of gamification in preschool education. The qualitative method was used in the research. The study was conducted using the case study design, one of the qualitative research methods. Interviews were conducted with 35 preschool teachers working in independent kindergartens. The data obtained, as a result of the research, were analysed in detail using the content analysis method. As

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a result of the research, it was concluded that gamification education is especially effective in the preschool period and is effective in gaining skills for children. In the same way, it is seen that there are some problems in the implementation of gamification training. These problems can be eliminated with in-service training. It can be solved by providing technological support tools at school.

Keywords: Gamification, acquisition, preschool, teacher, education;

1. Introduction

People, by nature, communicate by communicating with each other. At the beginning of healthy communication between people, basic human values should take place. In addition to human values, people also have values in their societies, and in order for each society to know its own value and transfer it to future generations, information about values must be transferred to people. This is the beginning of existence, and the reference point begins to gain importance in early childhood (Uzun & Köse, 2017).

It is the responsibility of families and caregivers to ensure the healthy development of children's personality, cognitive skills, language development, social characteristics, emotional characteristics and physical characteristics (Dağlıoğlu, 2012; Oktay, 2007; Uzunboylu & Ozcan, 2019). People's skills at an early age, i.e., in childhood, are very open to cognitive, physical, emotional and social development, which is why the first years are so important (Oktay, 2007; Şahin, 2000). Full and correct assimilation of values in preschool education is of great importance. Schools fulfil this important task through teachers (Uyanık Balat & Balaban Dağal, 2011). Since the teacher is the implementer of the curriculum and has the greatest influence on students in schools, it is also the teacher who plays the most important role in teaching values (Salama et al., 2020; Şen, 2011) because the upbringing given to children during this period leaves indelible marks on them (Özkubat, 2013; Uzun & Köse, 2017).

Today's children are under the siege of mobile devices connected to the Internet, especially smartphones, and they waste their valuable time, which should be spent on their development, by using these devices for other purposes. Interactive e-books offer opportunities that can increase children's reading activities and therefore their intellectual development, mainly through mobile devices. Providing children with an opportunity that they cannot refuse on mobile is very important in terms of directing their development in the right direction. Akcil et al. (2021) argued that the use of technology is effective in learning in their study. Although interactive e-books are not used in practice in educational institutions and libraries (Uzunboylu et al., 2022), there are successful examples in the world of developing children's cognitive and intellectual abilities (Genc, 2014; Plowman et al., 2012; Wang et al., 2019).

One of the methods that can be used in tools designed for preschool children is gamification. A learning environment that uses gamification elements will help ensure children's participation as it will include play activities that children enjoy. The integration of gamification dynamics into educational activities can be expressed as 'gamification in education'. Yıldırım (2017) explained gamification in education as 'increasing student motivation by incorporating the game development

process into education in order to take advantage of its strengths, increase success and increase positive attitude towards the lesson'. In this explanation, expressions of increasing motivation and creating a positive attitude are important in terms of forming a positive opinion of preschool children about school and education. Creating a more enjoyable learning environment for children will also improve their attitudes towards future educational activities in a positive way to do the operation.

Regarding effective environmental education, teachers and new educators are responsible for 'being a role model', 'organising environmental trips', 'playing environmental problems', 'reading environmental books', 'organising teacher training' and 'teaching the arts and about nature'. When children participate in environmental education, especially through play, knowledge becomes much more permanent. Children can be educated about the environment and environmental issues, which can make them more concerned about the environment so they can be easily motivated to engage in pro-environmental behaviour (Kim et al., 2017; Palmberg et al., 2015).

Preschool education covers the whole life of a child from the age of 0–6. From the moment the child is born, the foundations of the characteristics that will affect him are laid. This is the period of time that includes their lives until they go to primary school (Papadopoulos, 2020; Yıldız, 2008). Preschool education, which develops the child's self-esteem, is rich in content. A self-confident personality trait that develops self-control by creating an educational environment, increases their productivity, must be of a quality that meets their imagination, individual interest and needs and provides children with basic academic skills (Elmira et al., 2022; Hautakangas et al., 2022; Kelemen, 2020).

Research has shown that children learn better in unstructured play. As a result, they are healthier, happier and get along better with those around them, as well as with plants and nature (Bálint-Svella, 2021; Burdette & Whitaker, 2005; Hari & Zsoldos-Marchis, 2020). Children who spend a lot of time outside are more successful in social situations (Ewert et al., 2005). It is important to create an environment that enriches education with hands-on activities and allows children to spend more and more time in nature (Discutido & Especi, 2022; Gülay & Ekici, 2010; Olgan & Öztürk, 2011; Ozcinar et al., 2021). At this point, the importance of teachers' knowledge about environmental activities comes to the fore.

Most teachers used the expression block and drama game centre as the most preferred learning centre for children; some teachers used the art centre and books as the most preferred learning centre for children; and few teachers used the expression children's science and nature centre. The teacher listed the music centre among the centres preferred by the children. Similar to these findings, in studies conducted by various researchers, it has been determined that the most preferred centres of children during play are blocks and drama play centres (Altay, 2018; Aysu & Aral, 2016; DiCarlo & Vagianos, 2009; Lloyd & Howe, 2003; Özyürek & Aydoğan, 2011; Taş, 2018).

Regarding gamification, it is a process aimed at providing external and internal motivation and involving people in a task with recreational activity (Kim & Castelli, 2021). A great task falls to the trainers in gamification. These are tools that allow people to effectively participate in cooperation

with each other when developing gamification strategies. Content selection is very important when preparing gamification processes (Kim & Castelli, 2021).

1.1. Purpose of the research

Along with the changing technology, which is effective in all areas of life, diversity has also occurred in the teaching process. Gamification is among the technology-supported teaching methods and techniques used in education. Gamification provides many skill acquisitions. In this study, it aims to examine the opinions of teachers about the social skills gains of gamification for the application of gamification in preschool education.

1. What are the advantages of using technology in the preschool period?
2. What are the benefits of gamification education in the preschool period?
3. What are the difficulties experienced while applying gamification training?
4. What are the social skills gains in gamification education?

2. Method

This research aims to examine the views of kindergarten teachers on the application of gamification in education on the acquisition of social skills through gamification. The case study design, which is one of the qualitative research approaches, was adopted to determine the views of illiterate students on the social skills of gamified education in the preschool age. The case study is an exploratory and investigative research method. It is used to examine the existing situation in real life in a real environment (Alwattar, 2022; Ferdosipour & Mirzaei, 2021; Hawkins et al., 2021; Yin, 2009). For this purpose, the single-case holistic design, which is one of the case study designs, is adopted to test a theory or concept, to test the effectiveness of the application, to investigate a unique case, or to explore questions that have not been researched or sufficiently researched before (Cronin, 2014).

2.1. Working group

The qualitative method was used in the research. The study was conducted using the case study design, one of the qualitative research methods. Interviews were conducted with 35 preschool teachers working in independent kindergartens. In the sample selection of the teachers, the selection was made on a voluntary basis. 25 female and 10 male teachers were included in the study. While selecting the research group, they used gamification training during their classes as a prerequisite. Within the scope of this prerequisite, a study was conducted with 35 teachers.

2.2. Data collection

In this study, semi-structured interview questions developed by the researcher were prepared as a data collection tool. The questions were prepared by the researcher and the questions were finalised by three experts in their fields. Voice recordings were taken with a voice recorder during the interview session. After the findings obtained from the research were documented, they were

presented to the students for confirmation. The accuracy of the data obtained in this way has been determined.

2.3. Analysis of data

The content analysis method was used in the analysis process of the data obtained from the teachers working in the kindergarten. While performing content analysis, data is gathered around similar concepts and themes. Themes are interpreted in a way that the reader can understand. In this research, the process of coding the raw data obtained from the interviews, and then collecting and interpreting the coded data under themes was followed.

3. Findings

3.1. Findings on the advantages of technology use in the preschool period

Table 1. Advantages of technology in preschool

Theme	<i>f</i>
Fun learning	20
Attracting attention	12
Creativity	10
Reinforcement	10

When the findings of preschool teachers regarding the advantages of using technology in education are examined, there are 20 teachers stated that it offers a fun learning opportunity. 12 teachers stated that they attracted attention, 10 teachers stated that it developed their creativity and 10 teachers stated that it provided reinforcement.

The opinions of some teachers are as follows:

‘The use of technology in education is very effective, especially in the preschool period. Illiterate students are allowed to make their education fun with technology’.

‘Technology is very important in education. There are many advantages. We are in the age of technology. Technological tools are effective in the education of adult individuals, as well as very advantageous for children who are in the preschool period. It is effective in developing children's creativity’.

3.2. Findings on the benefits of gamification education in the preschool period

Table 2. Benefits of gamification

Theme	<i>f</i>
Making learning fun	31
Developing skills for solving real-life problems	12
Increases their motivation to learn	12
Increases attention and focus times	8

In their findings on the impact of gamified learning environments used by teachers working in the preschool period in educational processes on children in their lessons, most teachers stated that it was an advantage to offer entertaining learning content. Again, they stated that gamification provides their skills with gamification environments against the problems they encounter in life. They stated that gamification provides motivation for students and enables them to learn more permanently in this way. It is also very effective in the attention span of students.

Some teachers' views on the importance of gamification in education are as follows:

'Gamification I can say that game applications in education increase the motivation of students, especially in the preschool period, where they provide attention. It is an effective educational teaching technique'.

'With gamification, students can be prepared in advance for problems encountered in real life. Problem solving skills improve and motivation for learning increases'.

3.3. Findings regarding the difficulties encountered in the implementation of gamification education

Table 3. Difficulties encountered in the implementation of gamification education

Theme	<i>f</i>
Crowded classrooms	20
Lack of tools	18
Lack of knowledge in story creation	12

The problems faced by preschool teachers while applying gamified education in their classrooms were examined. The findings obtained from the teachers were that most teachers had difficulties in applying in crowded classrooms. They also stated that they had difficulties in gamification training due to the lack of equipment, namely materials. 12 teachers stated that they had difficulty in creating and designing stories for gamification education.

The opinions of some teachers are as follows:

'Gamification education is a very effective technique in the illiterate preschool period. However, the lack of sufficient equipment creates a problem in terms of applicability. Internet outage is an example of this'.

'While designing the gamification training, it is necessary to design the story-making application programmes. For this reason, I sometimes have difficulties in finding or designing a suitable story. In-service training can be provided on this subject'.

3.4. Findings on social skills acquisitions in gamification education

Table 4. Gamification education gains in social skills

Theme	<i>f</i>
Communication skills	25

Confidence	21
Decency	12
Problem-solving skill	10

Most of the findings related to the gains of preschool teachers in social skills in children with gamification education stated that they improved their communication skills; provides self-confidence in children; and provides the characteristics of understanding. In the same way, they stated that by developing problem-solving skills, they gained experience regarding the problems they would encounter in the outside social environment and prepare them for social life.

The opinions of some teachers are as follows:

‘Many skills of children are developed through gamification. It develops communication skills and gives effective communication skills’.

‘With gamification, students both learn and have fun because they learn by playing games. Gaining problem solving skills is an important skill in education. This skill is provided by gamification, and they become ready for the problems they will encounter in daily life’.

4. Conclusion, discussion and suggestions

The aim of this study is to determine the opinions of students about the effectiveness of gamification used in the education of illiterate children in the preschool period. Especially, when the results obtained from the teachers are examined, it is concluded that gamification provides fun learning for children. In the results obtained from the findings of preschool teachers on the advantages of using technology in education, it was concluded that gamification provides a fun learning opportunity, provides learning by increasing motivation towards learning, develops children's creativity and is effective in reinforcing the taught subjects. Similar results have emerged in studies conducted within the scope of contributions to education on gamification. It has been found that gamified education models affect motivation positively and enable learning (Alsancak-Sırakaya, 2015; Chao et al., 2015; Turan, 2015). There are studies that increase students' interest in the lesson and their motivation to learn through gamification (Arkün-Kocadere & Çağlar, 2015; Hanus & Fox, 2015; Su & Cheng, 2015; Yıldırım & Demir, 2016).

Most of the teachers stated that presenting fun learning content is an advantage in their findings regarding the effect of the gamified learning environments used by the preschool teachers in their education processes with the children in their lessons. It has been concluded that gamification environments and gamification against the problems they encounter in life provide motivation to students and thus enable them to learn more permanently. It is also very effective on the attention span of students. It can be said that the attention span of the students increases with the gamified educational content. Arkün-Kocadere and Çağlar (2015) concluded in their research that students' gamification is fun. In studies where the flipped classroom model is applied, students have a fun learning experience (Touchton, 2015) and feel better (Findlay-Thompson & Mombourquette, 2014; Urh et al., 2022).

When we look at the results of the findings, regarding the problems that preschool teachers encounter while applying gamified education in their classrooms, it is seen that they have difficulty in practicing in crowded classrooms. It can be concluded that while the gamification training is applied in crowded classrooms, each child has difficulty in providing control one by one. The lack of sufficient hardware and software systems also emerges as a problem. Again, most of the teachers stated that they had problems in the editing part of the gamified learning environment and that they could not find enough stories. As a result, the equipment in the schools should be adjusted. In-service training can be given to increase the competence of teachers from technology-supported education to gamification.

The results of preschool teachers on social skill acquisition in children receiving gamification training are quite positive. They stated that children improved their communication skills. Taking a voice and showing respect skills are among the skills they use in social life. It can be concluded that these skills are provided by gamification. They stated that it provides self-confidence and understanding features in children. Likewise, it can be concluded that by developing their problem-solving skills, they gain experience with the problems they will encounter in the external social environment and prepare them for social life. Maloney et al. (2008), within the scope of the activities they carried out, designed a game with Scratch as an out-of-school activity for a year with participants ranging from 8 to 18 years old and examined its effects on coding education. This programme, which is under the gamification programme, was shown to have a social impact on students.

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References

- Akçay, D., & Özcebe, H. (2012). Okul öncesi eğitim alan çocukların ve ailelerinin bilgisayar oyunu oynama alışkanlıklarının değerlendirilmesi. *Çocuk Dergisi*, 12(2), 66–71. <https://doi.org/10.5222/j.child.2012.066>
- Akcil, U., Uzunboylu, H., & Kinik, E. (2021). Integration of technology to learning-teaching processes and Google Workspace tools: A literature review. *Sustainability*, 13(9), 5018. <https://doi.org/10.3390/su13095018>
- Alsancak-Sırakaya, D. (2015). *Tersyüz sınıf modelinin akademik başarı, öz-yönetimli öğrenme hazırbulunuşluğu ve motivasyon üzerine etkisi* [Doktora Tezi, Gazi Üniversitesi].
- Altay, M. (2018). *Okul öncesi eğitim kurumlarında, öğrenme merkezlerinin düzenlenmesinin ve kullanılmasının öğretmen görüşlerine göre değerlendirilmesi* [Yüksek Lisans Tezi, Necmettin Erbakan Üniversitesi Eğitim Bilimleri Enstitüsü].
- Alwattar, H. G. K. A. (2022). A quantitative analysis of student's satisfaction. *International Journal of Innovative Research in Education*, 9(1), 19–34. <https://doi.org/10.18844/ijire.v9i1.7765>
- Arkün-Kocadere, S. A., & Çağlar, Ş. (2015). The design and implementation of a gamified assessment. *Journal of E-Learning and Knowledge Society*, 11(3), 85–99.

- Atabay, E., & Albayrak, M. (2020). Okul Öncesi Dönem Çocuklarına Oyunlaştırma İle Algoritma Eğitimi Verilmesi. *Mühendislik Bilimleri ve Tasarım Dergisi*, 8(3), 856–868.
- Aysu, B., & Aral, N. (2016). Okul öncesi öğretmenlerinin öğrenme merkezleri hakkındaki görüş ve uygulamalarının incelenmesi. *Kastamonu Education Journal*, 24(5), 2561–2574. <https://dergipark.org.tr/en/download/article-file/309482>
- Bálint-Svella, É. (2021). Prospective preschool and primary school teachers' knowledge and opinion about gamification. *Acta Didactica Napocensia*, 14(1), 104–114. <https://doi.org/10.24193/adn.14.1.8>
- Berrin, G. E. (2021). Erken Okuryazarlığın ve Okuma Yazmanın Okul Öncesi Dönemde Kazandırılmasına İlişkin Paydaş Görüşleri. *Journal of Qualitative Research in Education*, 25, 263–294.
- Burdette, H. L., & Whitaker, R. C. (2005). Resurrecting free play in young children: Looking beyond fitness and fatness to attention, affiliation, and affect. *Archives of Pediatrics & Adolescent Medicine*, 159(1), 46–50. <https://doi.org/10.1001/archpedi.159.1.46>
- Çabuk, B., İlhan, E., & Günay, A. (2020). Okul Öncesi Dönem Çocuklarının Gelişimlerinin Desteklenmesi: Sosyal Sorumluluk Projelerinin Rolü. *Selçuk Üniversitesi Sosyal Bilimler Meslek Yüksekokulu Dergisi*, 23(2), 497–512. <https://doi.org/10.29249/selcuksbmyd.663005>
- Chao, C., Chen, Y., & Chuang, K. (2015) Exploring students' learning attitude and achievement in flipped learning supported computer aided design curriculum: A study in high school engineering education. *Computer Applications in Engineering Education*, 23(4), 514–526.
- Cronin, C. (2014). Using case study research as a rigorous form of inquiry. *Nurse Researcher*, 21(5). https://www.researchgate.net/publication/262733997_Using_case_study_research_as_a_rigorous_form_of_inquiry
- Dağlıoğlu, H. E. (2012). Okul Öncesi Öğretmenlerinin Özellikleri ve Okul Öncesi Eğitime Öğretmen Yetiştirme. In G. Haktanır (Ed.), *Okul Öncesi Eğitime Giriş* (7th ed., p. 42). Anı Yayıncılık.
- DiCarlo, C. F., & Vagianos, L. (2009). Using child preferences to increase play across interest centers in inclusive early childhood classrooms. *Young Exceptional Children*, 12(4), 31–39.
- Discutido, R., & Especi, J. (2022). Development and evaluation of multiple intelligence-based differentiated instructional material for reading and writing. *International Journal of Learning and Teaching*, 14(4), 173–180. <https://doi.org/10.18844/ijlt.v14i4.7541>
- Elmira, U., Abay, D., Shaimahanovna, D. A., Erzhenbaikyzy, M. A., Aigul, A., & Rabikha, K. (2022). The importance of game technology in primary education. *World Journal on Educational Technology: Current Issues*, 14(4), 996–1004. <https://doi.org/10.18844/wjet.v14i4.7652>
- Ewert, A., Place, G., & Sibthorp, J. (2005). Early-life outdoor experiences and an individual's environmental attitudes. *Leisure Sciences*, 27(3), 225–239. <https://doi.org/10.1080/01490400590930853>
- Ferdosipour, A., & Mirzaei, Z. (2021). The effectiveness of preventive-behavioural therapy and cognitive anxiety group and student's attention. *Global Journal of Psychology Research: New Trends and Issues*, 11(2), 89–102. <https://doi.org/10.18844/gjpr.v11i2.5303>
- Findlay-Thompson, S., & Mombourquette, P. (2014). Evaluation of a flipped classroom in an undergraduate business course. *Business Education & Accreditation*, 6(1), 63–72.
- Genc, Z. (2014). Parents' perceptions about the mobile technology use of preschool aged children. *Procedia-Social and Behavioral Sciences*, 146, 55–60. <https://doi.org/10.1016/j.sbspro.2014.08.086>

- Gülay, H., & Ekici, G. (2010). MEB okul öncesi eğitim programının çevre eğitimi açısından analizi. *Türk Fen Eğitimi Dergisi*, 7(1), 74–84.
- Hanus, M. D., & Fox, J. (2015). Assessing the effects of gamification in the classroom: A longitudinal study on intrinsic motivation, social comparison, satisfaction, effort, and academic performance. *Computers & Education*, 80, 152–161.
- Hari, T. H., & Zsoldos-Marchis, I. (2020). Primary school teachers' knowledge and opinion about gamification. *Development*, 1(22), 3. <https://doi.org/10.21125/iceri.2020.2058>
- Hautakangas, M., Kumpulainen, K., & Uusitalo, L. (2022). Children developing self-regulation skills in a kids' skills intervention programme in Finnish early childhood education and care. *Early Child Development and Care*, 192(10), 1626–1642. <https://10.1080/03004430.2021.1918125>
- Hawkins, D. S., Budi, D. N. P. R., Shafira, A. B., & Abbas, R. J. (2021). Sustainable tourism and environmental degradation in the Rin-jani-Lombok UNESCO Global Geopark. *New Trends and Issues Proceedings on Advances in Pure and Applied Sciences*, 14, 38–50. <https://un-pub.eu/ojs/index.php/paas/article/view/6794>
- Kelemen, G. (2020). Developing early childhood education competences (early childhood education and care, ECEC). *Journal Plus Education*, 27(2), 304–312.
- Kim, G., Vaswani, R. T., Kang, W., Nam, M., & Lee, D. (2017). Enhancing ecoliteracy through traditional ecological knowledge in proverbs. *Sustainability*, 9(7), 1182. <https://doi.org/10.3390/su9071182>
- Kim, J., & Castelli, D. M. (2021). Effects of gamification on behavioral change in education: A meta-analysis. *International Journal of Environmental Research and Public Health*, 18(7), 3550. <https://doi.org/10.3390/ijerph18073550>
- Lloyd, B., & Howe, N. (2003). Solitary play and convergent and divergent thinking skills in preschool children. *Early Childhood Research Quarterly*, 18(1), 22–41. [https://doi.org/10.1016/S0885-2006\(03\)00004-8](https://doi.org/10.1016/S0885-2006(03)00004-8)
- Maloney, J. H., Peppler, K., Kafai, Y., Resnick, M., & Rusk, N. (2008). Programming by choice: Urban youth learning programming with scratch. *ACM SIGCSE Bulletin*, 40(1), 367–371. <https://doi.org/10.1145/1352322.1352260>
- Oktay, A. (2003). 21. Yüzyıla Girenken Dünyada Yaşanan Değişimler ve Erken Çocukluk Eğitimi. In M. Sevinç (Ed.), *Erken Çocuklukta Gelişim ve Eğitimde Yeni Yaklaşımlar* (p. 25). Morpa Kültür Yayınları.
- Oktay, A. (2007). *Yaşamın Sihirli Yılları: Okul Öncesi Dönem* (6th ed., p. 22). Epsilon Yayınları.
- Olğan, R., & Öztürk, D. K. (2011). An investigation in the playgrounds of public and private preschools in Ankara. *Eğitim ve Bilim*, 36(161), 85.
- Ozcinar, Z., Orekhovskaya, N., Svintsova, M., Panov, E., Zamaraeva, E., & Khuziakmetov, A. (2021). University students' views on the application of gamification in distance education. *International Journal of Emerging Technologies in Learning (IJET)*, 16(19), 4–15. <https://doi.org/10.3991/ijet.v15i23.19065>
- Özkubat, S. (2013). Okul öncesi kurumlarında eğitim ortamlarının düzenlenmesi ve donanım. *Adnan Menderes Üniversitesi Eğitim Fakültesi Eğitim Bilimleri Dergisi*, 4(2), 58–66. <https://dergipark.org.tr/pub/aduefebder/issue/33895/375263>
- Özyürek, A., & Aydoğan, Y. (2011). Okul öncesi öğretmenlerinin serbest zaman etkinliklerine ilişkin uygulamalarının incelenmesi. *Sakarya Üniversitesi Eğitim Fakültesi Dergisi*, 22, 41–58. <https://dergipark.org.tr/pub/sakaefd/issue/11218/133961>

- Palmberg, I., Berg, I., Jeronen, E., Kärkkäinen, S., Norrgård-Sillanpää, P., Persson, C., Vilkonis, R., & Yli-Panula, E. (2015). Nordic–Baltic student teachers' identification of and interest in plant and animal species: The importance of species identification and biodiversity for sustainable development. *Journal of Science Teacher Education*, 26(6), 549–571. <https://doi.org/10.1007/s10972-015-9438-z>
- Papadopoulos, D. (2020). Effects of a social-emotional learning-based program on self-esteem and self-perception of gifted kindergarten students: A pilot study. *Journal for the Education of Gifted Young Scientists*, 8(3), 1275–1290.
- Plowman, L., Stevenson, O., Stephen, C., & McPake, J. (2012). Preschool children's learning with technology at home. *Computers & Education*, 59(1), 30–37. <https://doi.org/10.1016/j.compedu.2011.11.014>
- Şahin, F. (2000). *Okul Öncesinde Fen Bilgisi Öğretimi ve Aktivite Örnekleri*. Ya-Pa Yayınları.
- Salama, R., Uzunboylu, H., & Alkaddah, B. (2020). Distance learning system, learning programming languages by using mobile applications. *New Trends and Issues Proceedings on Humanities and Social Sciences*, 7(2), 23–47. <https://doi.org/10.18844/prosoc.v7i2.5015>
- Şen, M. (2011). Okulöncesi dönem değerler eğitiminde öğretmenin ve okulun rolü. In A. Arıkan (Ed.), *Okulöncesi dönemde değerler eğitimi* (pp. 123–147). Anadolu Üniversitesi Yayınları No: 2301.
- Su, C. H., & Cheng, C. H. (2015). A mobile gamification learning system for improving the learning motivation and achievements. *Journal of Computer Assisted Learning*, 31(3), 268–286.
- Taş, I. (2018). An analysis on play and playmate preferences of 48 to 66 months old children in the context of gender. *Educational Research and Reviews*, 13(13), 511–517. <https://doi.org/10.5897/ERR2017.3355>
- Touchton, M. (2015). Flipping the classroom and student performance in advanced statistics: Evidence from a quasi experiment. *Journal of Political Science Education*, 11(1), 28–44.
- Turan, Z. (2015). *Tersyüz sınıf yönteminin değerlendirilmesi ve akademik başarı, bilişsel yük ve motivasyona etkisinin incelenmesi* [Doktora Tezi, Atatürk Üniversitesi].
- Urh, M., Jereb, E., Šprajc, P., Jerebic, J., & Rakovec, P. (2022). The impact of higher education students' personality traits on susceptibility to specific gamification elements. *New Trends and Issues Proceedings on Humanities and Social Sciences*, 9(1), 19–30. <https://doi.org/10.18844/prosoc.v9i1.7092>
- Uzun, M., & Köse, A. (2017). Okul Öncesi Eğitimde Değerler Eğitiminin Uygulanmasına Yönelik Öğretmen Görüşleri. *Bayburt Eğitim Fakültesi Dergisi*, 12(23), 305–338. <https://dergipark.org.tr/tr/pub/befdergi/issue/30012/305131>
- Uzunboylu, H., & Özcan, D. (2019). Teaching methods used in special education: A content analysis study. *International Journal of Cognitive Research in Science, Engineering and Education*, 7(2), 99–108. <http://www.scopus.com/inward/record.url?eid=2-s2.0-85073358809&partnerID=MN8TOARS>
- Uzunboylu, H., Prokopyev, A. I., Kashina, S. G., Makarova, E. V., Chizh, N. V., & Sakhieva, R. G. (2022). Determining the Opinions of university students on the education they receive with technology during the pandemic process. *International Journal of Engineering Pedagogy*, 12(2). <https://doi.org/10.3991/ijep.v12i2.29329>
- Wang, X., Sun, H., & Li, L. (2019). An innovative preschool education method based on computer multimedia technology. *International Journal of Emerging Technologies in Learning*, 14(14). <https://www.learntechlib.org/p/210548/>
- Yin, R. K. (2009). *Case study research: Design and methods* (Vol. 5). Sage.

- Yıldırım, İ. (2017). Students' perceptions about gamification of education: A Q-method analysis. *Eğitim ve Bilim*, 42(191), 235–246.
- Yıldırım, İ., & Demir, S. (2016). Oyunlaştırma temelli 'öğretim ilke ve yöntemleri' dersi öğretim programı hakkında öğrenci görüşleri. *International Journal of Curriculum and Instructional Studies*, 6(11), 85–101.
- Yıldız, Ö. (2008). Working children: The 'question' or the 'solution?' *Gaziantep University Journal of Social Sciences*, 6(2), 57–66.