



Volume 4 No 1 (2021)  
ISSN Number: 2651-3099

NEAR EAST UNIVERSITY  
**ONLINE JOURNAL OF  
EDUCATION**  
(NEUJE)



## TABLE OF CONTENTS

<i>Aslı Kasabalı Günhan, Fatma Köprülü</i> Ma Students' Views on the Lecturers' Use of Powerpoint Presentations in Online Live Lectures During the COVID-19 Lockdown	Research article PN: 01-10
<i>Murad Buijlayyil, Aşkın Kiraz</i> Environmental Education and Awareness to Protect Egyptian Tortoise (Testudo Kleinmanni) by Local Community Participation	Research article PN: 11-22
<i>Mustafa M. A. Mohamed, Hatem A. M. Darabee, Emrah Soykan</i> Human-Computer Interaction in Medical Education	Review article PN: 23-38
<i>Pelin Üretici</i> Metaphor Analysis of the Perceptions of "Global Warming" as a Concept	Research article PN: 39-64
<i>Ezgi Ulu, Mehmet Eyüp Haksal</i> Anxiety and Subjective Well-Being Relationship in Individuals with Visually Impaired Parents	Research article PN: 65-71
<i>Ebba Ossiannilsson</i> The New Normal: Post COVID-19 is About Change And Sustainability	Review article PN: 72-77
<i>Şermin Kuset, Kezban Özgem, Emine Şaşmacıoğlu, Şebnem Güldal Kan</i> Evaluation of the Impact of Distance Education on Children in Preschool Period: Teachers' Opinions	Research article PN: 78-87
<i>Mahide Özçelik, Mukaddes Sakallı Demirok</i> Examination of Graduate Theses Conducted on Pre-School Inclusion Between 2016-2020 in Turkey	Review article PN: 88-99
<i>Mutlu Soykurt</i> Reflections of Creativity in the 21st Century Classroom	Research article PN: 100-108
<i>Fevziye Ertekin, Başak Bağlama</i> Examination of Postgraduate Thesis Carried out with Errorless Teaching Methods in Individuals with Autism Spectrum Disorder	Review article PN: 109-117
<i>Burak Demir, Mert Baştaş, Yücehan Yücesoy</i> Evaluating the Content of Teacher Candidates' Course Books According to Visual Design Elements	Research article PN: 118-125
<i>Yasemin Sorakın, Yağmur Çerkez</i> Content Analysis Study for the Studies Done on Parental Education	Review article PN: 126-133



## MA STUDENTS' VIEWS ON THE LECTURERS' USE OF POWERPOINT PRESENTATIONS IN ONLINE LIVE LECTURES DURING THE COVID-19 LOCKDOWN

Aslı Kasabalı Günhan<sup>1</sup>, Fatma Köprülü<sup>2,\*</sup>

<sup>1</sup>Near East University, [asli.kasabali@neu.edu.tr](mailto:asli.kasabali@neu.edu.tr)

<sup>2</sup>Near East University, [fatma.koprulu@neu.edu.tr](mailto:fatma.koprulu@neu.edu.tr)

\*Correspondence: [fatma.koprulu@neu.edu.tr](mailto:fatma.koprulu@neu.edu.tr); Tel.: +90-392-22-36464

### Abstract

PowerPoint Presentations have been one of the content delivery tools used heavily by the lecturers in online live lectures during the Covid-19 lockdown. They were chosen by the lecturers for the delivery of the lessons with the belief that they provide an effective visual support and organization of the content. However, do students have the same views on the use of PowerPoint presentations? The study aimed to present the views of MA students' on the lecturers' use of PowerPoint presentations during online live lectures. To meet the aim of this research, qualitative research method was used. Data obtained from structured interviews which consisted of 4 open-ended questions. Participants presented their views on the use of Power Point presentations during live lectures in terms of positive and negative sides mentioning the problems, if any, and their suggestions to those problems. The study group was comprised of 16 MA students who were studying at Near East University during the Spring term of the academic year 2019-2020. Results of the research indicated that in MA students' views, the use of materials presented through PowerPoint proves to be practical in the lesson, offers visual richness while at the same time providing efficient monitoring and evaluation.

**Keywords:** Power Point presentations, online live lecture, Covid-19.

### Introduction

Technology assisted learning has conquered the classrooms as the need for providing attractive, visual, audial, interactive, and authentic materials has gained importance. This need escalated even more during the Covid-19 period. The Covid-19 lockdown has made it obvious that there is a huge need to use instructional tools that can be integrated into online delivery of lessons. This sudden shift towards fully online education all over the world raised the need to look for online applications and online/computer-based tools that can provide an efficient and practical way of transferring the target content to students. The use of such applications and tools integrated into the lessons lead to an interactive lesson where there is an opportunity to get access to multi-media content (Bayne, 2015; Conole, 2013). When transferring content during online delivery, the traditional way of lecturing through online platforms might result in attention loss especially in large group teaching, lack of visuals to support teaching, lack of interaction between the students and the materials and lack of seeing the relationship between the concepts explained. Adding the lack of face-to-face education to all these issues, we can conclude that delivery mode in online teaching should be supported with a tool that can eliminate the demotivating effects of lecturing. Due to their widespread use during the lockdown period, the use of PowerPoint presentations can be considered as the fit for purpose tool.

PowerPoint is a presentation tool that visualizes the information by giving the opportunity to support the content with texts, visuals, graphics, animations and multimedia tools (Fakas, 2006; Ögeyik, 2017). It is believed to be an effective tool in facilitating the recall of information because of the way it is presented through PowerPoint mainly with the use of visuals, auditory tools and organization components (Jalali & Talebi, 2014). Moreover, the information received through multiple stimuli is better processed in the brain (Baddeley, 1992) and leads to a deeper internalization of the content (Mayer, 2005). Other advantages of PowerPoint include the practicality it provides for modifying, editing and adding to the content, and the use of less time in presenting the content (Gamabri, Taiwo & Balogun, 2015).

On the other hand, some argue against the use of PowerPoint claiming that it is no different than lecturer-centered lessons (Creed, 1997) and the fact that the content is written on the slides may cause the lecturer to read the slides word by word leading to the lack of discussion and any other relevant explanations (Ögeyik, 2017).

The studies done on the effectiveness of PowerPoint use have resulted in conflicting findings. Gier and Kreiner (2009) have indicated that lessons led by PowerPoint presentations increased the amount of information recalled as a result of their study conducted with psychology students. Susskind's study (2005) showed no significant differences in success level between those students who were exposed to lectures delivered by the use of PowerPoint and those students who received lectures without it. In Apperson, Laws and Scepanisky's (2008) study although the students mentioned that they preferred to be instructed through PowerPoint, their performance as a result of this type of instruction was found to be poor. There are also studies that showed the positive effects of the use of PowerPoint. Alkash and Al-Dersi (2013) concluded that PowerPoint use eased the comprehension of main points of teaching theories and promoted success for student-teachers. Additionally, Bektaş (2014) found out that PowerPoint-supported teaching has affected students' motivation positively in a social studies lesson. On the other hand, for those students who were taught without PowerPoint the motivation level decreased. San (2019) recorded that when PowerPoint used for instruction, the students' ability for selecting and concentrating towards the target content was much better.

Considering these conflicting studies and the shift to fully online education during this period of Covid-19, this study has been done to further explore how the use of PowerPoint presentations were managed during the online live lessons, what the impressions of the students have been and whether the findings would be consistent with the previous studies done. Hence, in order to point out the views of MA students' on the lecturers' use of PowerPoint presentations during the online live lectures, this research study has attempted to find answers to the following questions:

1. What are the MA students' views on the use of PowerPoint presentations in online live lectures during Pandemic?
2. What are the problems faced during PowerPoint Presentations regarding the education provided by online live lectures, Pandemic according to the MA students' views?

## Methodology

### Research Model

A qualitative research method for this study was chosen because according to Merriam (1998), qualitative research methods are exclusively appropriate in realizing the meaning that participants give to events that they experience. This study was carried out to determine the views of MA students on the lecturers' use of PowerPoint presentations during online live lectures.

### Universe and Sampling

The universe of this research consists of the MA students who took MA courses from the Department of Human resources at the Near East University during the second term of the academic year 2019 - 2020 (Pandemic).

The Sample of the study was composed of 16 MA students. The participants attended this survey voluntarily. In the following table, the participants' demographic variables are given:

**Table 1.**  
*The Participants' Demographic Variables*

Demographic variables	N	%
Gender		
Female	2	12.0
Male	14	88.0
Age		
25 - 40	14	88.0
41 - 60	2	12.0
Educational Level		
M.A.	16	100.0

According to the participants' demographic variables, the majority of the students who participated in the study are male, 14 of the students were between the age of 25 and all of them were doing their MA studies during the time of the study.

### Data Collection Tools

In this research qualitative method was used. The first part of the interview form included questions to determine the demographic characteristics of the participants. The second part of the form included four open-ended questions designed to get the MA students' views on the lecturers' use of PowerPoint presentations during the online live lectures. Expert opinion was sought during the design of the questions.

### Data Collection Methods

After the literature review, the researchers developed the open-ended interview questions. After receiving the opinions of two specialists in the Faculty of Education, the items in the interview form were finalized. The data was obtained between the dates 20<sup>th</sup> -30<sup>th</sup> of May 2020. The participants' opinions towards using PowerPoint presentations during live lectures were received through semi-structured interviews.

## Data Analysis

The data was written and analysed using the descriptive analysis technique which is one of the methods of qualitative data analysis. The statements of the interviews were used directly while using the descriptive analysis method. Each question in the interview form was divided into specific themes and the participants' views were coded into related themes. Yıldırım and Şimşek (2013) stated that results should be achieved by both evaluating data within the specified theme and considering the cause and effect relationship. The responses were transcribed verbatim and the researchers reached a consensus on the themes that can be derived based on the participants' responses.

## Findings and Comments

Frequencies and percentage values for each theme are given in this part of the study.

**Table 2.**

*MA Students' Views on the Positive Aspects of PowerPoint Presentations in online live lectures during Pandemic*

Positive Aspects of PowerPoint Presentations	f	%
Possibility to discuss the topic in a short time	11	18.6
Include visual elements	9	15.3
Provide efficient monitoring and evaluation	9	15.3
Support inclusion of students in the lessons	8	13.6
Make learning meaningful and easy	7	11.9
Interesting and attractive	7	11.9
Encourage active student participation	5	8.4
Develop technological skills	3	5.0
Total	59	100.0

When Table 2 is examined, the majority of the answers to the first open – ended question emphasize that the main topic can be discussed in a short period of time. In addition, they believe that PowerPoint presentations encourages them to attend classes making learning meaningful, interesting and visually-supported.

*“I think one of the positive aspects of using PowerPoint is that a lecturer can discuss about the main topics in a limited time. In other words, the lecturer by using PowerPoint can transfer key points, and sometimes by using, showing some questions, some pictures and some videos, can enable students to participate students in problem-solving processes. It means that students are involved in the learning process”. (1)*

*“The PowerPoint Presentations in online live lectures really meet my expectations regarding knowledge, skills and change of attitudes. Learning objectives were set to contribute to the achievement of the training program objectives, at the same time providing efficient monitoring and evaluation”. (3)*

*“In my point of view, there are many positive aspects such as activities, the explanation of the topic, and making it easy to remember the points about a topic. That's why it encourages the students to participate in the lessons”. (7)*

**Table 3.**

*MA Students' Views on the Negative Aspects of PowerPoint Presentations in online live lectures during online live lessons*

Negative Aspects of PowerPoint Presentations	f	%
Crowded classes cause too much noise	7	29.2
Technical troubles	6	25.0
Require more time to understand the lesson	5	20.8
Excessive loading of information makes it difficult to understand the subject	3	12.5
Cause disconnections between the lecturer and the students	2	8.3
The font size	1	4.2
Total	24	100.0

According to Table 3, the negative aspects stated for the use of PowerPoint presentations included facing technical troubles with the use of the tool, the fact that it might require more time to understand the lesson due to the lack of face-to-face interaction, the confusion created by the excessive inclusion of information on the slides and the lack of connection between the lecturer and the students. The font size used was another negative aspect mentioned since it affected the easiness of which a text can be read.

*“One of the negative aspects is about font size in some PowerPoint presentations. It is not clear to see the words and it makes understanding difficult. In my point of view, the teacher should inform the students about how they should prepare their PowerPoint presentations. And also, some of the PowerPoint presentations are very simple. They are designed without any interesting pictures, diagrams, shapes and videos. So, it causes their classmates to get bored during the lecture”. (13)*

*“It takes more time to understand a topic. The online courses lead the students to get lazy and ignore doing duties as there is no direct interaction and following up by the lecturers. Also, online lectures need good skills for time arrangements. On the other hand, it needs equipment and facilities such as internet connection, laptop, tables, and also online learning software. Some of these need licenses which will lead to being costly for both students and lecturers. As there is no direct face-to-face communication between students and lecturers some of the topics will be hard to be understood by the students especially those who need to be in labs”. (9)*

*“In my opinion, the negative aspects may include a lack of relationship between the teacher and the students. Students get lazy to participate in the lessons and they are not as active as facing each other in a real classroom, it also sometimes makes students irresponsible. Not all students have laptops or computers to communicate and poor connection might be a problem. Besides, some departments require hard copies of materials in their lessons because they don't want to have online live lectures”. (12)*

**Table 4.**

*MA Students' Views on the Problems Faced with PowerPoint Presentations during online live lectures*

Problems Faced During PowerPoint Presentations	f	%
Lack of technical knowledge on how to share slides	6	37.5
Technical Troubles	4	25.0
Network failure	3	18.7
Did not face any problems	3	18.7
Total	16	100.0

Table 4 illustrated the percentage distribution of the problems faced in online live lectures. It is clear from the table that over a third of the participants stated that the problems caused because of the lack of technical knowledge on how to share slides and a quarter of them indicated that it was caused because of the technical troubles. On the other hand, 3 of them emphasized that they didn't face any problems.

*"I thought there were two problems. The first was lack of technical knowledge on how to share our slides and the second was we could not see the body language of our classmates to have an idea of their reactions."* (2)

*"Yes, there are. For example, not all the students' computers are well working. Also, sometimes the writings are not clear on the screen for the other participants. Also, losing connection during the lectures is another problem"*. (15)

*"The first one was lack of technical knowledge on how to share your slides. The second was you could not get feedback from the class. We could not see them"*. (9)

**Table 5.**

*MA Students' Suggestions on increasing the Effectiveness of Powerpoint Presentations in Online Live Lectures*

Suggestions on increasing the Effectiveness of Powerpoint Presentations	f	%
Training should be given on how to prepare Powerpoint slides	8	30.8
The font size should be taken into consideration	7	26.9
The given information should be summarized	4	15.4
The number of slides and information added on the slides should be adjusted according to the topic	4	15.4
The instruction should be recorded	3	11.5
Total	26	100.0

As it can be seen in table 5, it has been mentioned that the students should be trained on how to prepare PowerPoint slides, the font size should be considered during the preparation of the presentations, and the information given should be summarized on a separate slide at the end of the presentation. The number of slides, the amount of text added on each slide and recording the presentation made to be shared with the students were also among the suggestions. The responses are mainly about the way the slides are created and the way the information is presented.

*“For increasing the effectiveness of Powerpoint presentations, I suggest that the slides don't have too much information. Having key points are enough. And using interesting pictures, shapes and videos can work well on attention and learning of students during the lecture as it is used in our live lectures.”(7)*

*“Students should be trained on how to prepare PowerPoint slides and also how to share them with their classmates before given the chance to present.” (14)*

*“My suggestion is to have an option onto the system which asks either to download it onto your Laptop or to view it without downloading it because some students might face a lack of space in the telephone or some in their computers then if so, they won't be able to get to the same point of understanding. Lastly, adding some links related to the course topic onto the PowerPoint would be helpful for the students to do more research on their own in terms of practicing the topic more.” (16)*

### **Discussion**

The study aimed at revealing the MA students' view on the lecturers' use of PowerPoint presentations during online live lectures. As well as being advantageous and having benefits, PowerPoint presentations are claimed to have some drawbacks at the same time (Hill et al., 2012; Hopper & Waugh, 2014). Both have been reflected in MA students' views in this study.

The findings indicated that there are conflicting opinions about the use of PowerPoint presentations for instruction. While some MA students consider PowerPoint presentations as an opportunity to get familiar with the content in a shorter time, other MA students stated that it might make it harder to understand the topic by following the slides. Considering that the content should be presented briefly in a more organized way through PowerPoint presentations, it might really support learning in terms of delivering the highlights of the topic and prevent wasting too much time on every single detail. However, the way the slides are arranged, how much information each slide contains and how the information placed on the slides have an effect on the ease with which the lesson content is understood. Adding visual elements support the info on the slides is another reinforcing factor for understanding the content. This is also stated in the findings of the studies done by Tangen, Constable, Durran, Teeter, Beston and Kim (2011); Gambari, Taiwo and Balogun (2015) and Kahraman, Kodan and Çevik (2011). Supporting this even further, as it was stated in the results of Jaleli and Talebi's (2014) and Bektas' (2014) study, MA students' also stated that the content presented through slides makes learning interesting, meaningful and motivates them to participate more. Receiving information through PowerPoint slides, according to the participants, allows them to monitor their understanding on the basis, we presume, the information is presented in an organized way with a proper summary as well.

On the other hand, adding too much information or lacking to organize them in relation to each other might result in exposing students to redundant information. This will in return creates frustration and distraction since the students are not able to select the information they need. This consequence might be linked to one of the responses that PowerPoint presentations make it more difficult to understand the content. Considering that the main purpose of slides is to arrange the content in meaningful chunks, including too much information on the slides make it no different than presenting an article or a coursebook (Uzun & Kilis, 2019).

Further analyzing the negative aspects and problems faced with the use of PowerPoint presentations, lecturers' handling the technical difficulties is claimed to be the major problem. Considering the need for the integration of technological tools into the online live

lessons, this becomes a serious hindrance to the effectiveness of the way the content is delivered. The results of Jaleli and Talebi (2014) which indicated that the design and format of the slides helped the students understand the content better makes this a problem that should be overcome by the lecturers. Lecturers' ability to use the features of an educational tool effectively and properly contributes positively to the experience of learning and teaching. Another issue mentioned among the negative aspects was the lack of connection between the lecturer and the students. This is in line with the studies which reported that low performance of students who were exposed to instruction through PowerPoint slides can be attributed to the lack of interaction and limited opportunities to exchange opinions between the lecturer and the students (Ögeyik, 2017; Norvig, 2003).

Moreover, because this study was done during the Covid-19 lockdown, some additional comments to the use of PowerPoint presentations were also made. For some of them, studying during a lockdown time made it even more challenging due to the lack of equipment in good condition or network problems. That's why they asked for the recording of the presentations. Therefore, we tend to conclude that in normal times what it would not be a problem about the use of PowerPoint presentations has been regarded as a problem because of the challenges the students had to face during lockdown. Another issue raised by the participants was the importance of the body language. It was demotivating for them not to see the reactions of their classmates and/or their lecturer since their cameras were turned off. This was stated as a problem by the students as it is a big part of maintaining communication.

### **Conclusion**

The study examined the views of the MA students on how the use of PowerPoint presentations was managed during the online live lessons concluding that although there are obvious benefits, they are not free from obstacles. The MA students' suggestions on providing more training on the use of PowerPoint presentations including the correct choice of font size, adding right amount of slides and information according to the amount of content that should be delivered and recording the presentations for later reference should be taken into consideration.

As it was also noted by Craig and Amernic (2006) some course content might not be appropriate to be simplified and oversimplification can cause the content to be inadequately delivered (Uzun & Kilis, 2019), a great care should be given to the what extent the length of the content on the slides should be adjusted. Likewise, the lecturers should be trained on creating and successfully using the PowerPoint presentations as participants stated that some lecturers were going through difficulties while presenting. This, causing distractions for the students, affects the way how the content is presented. Having frequent stops during the delivery not only causes the students to be distracted but also breaks the coherence of the delivery.

What should also be noted here is the use of PowerPoint presentations cannot be evaluated separately from a lecturer's teaching methodology. A lecturer should acknowledge that PowerPoint presentations cannot replace all the other teaching techniques that should be implemented but can be used as a complementary for them. Delivering the content through a PowerPoint presentation does not imply that learning has taken place. Interaction between the lecturers and the students and/or between the students, creativity, critical thinking should be maintained with the integration of discussions and a variety of practices (Uzun & Kilis, 2019).

The study is not without limitations. First of all, it is limited to the context it was conducted and the opinions of the participants included in the study. This limitation can

clearly be seen in the conflicting responses of the participants as well. So the study was limited to a single university. Secondly, due to the time constraints, the responses given for the interview questions might be inadequate to explain certain points made.

Therefore, in order to enhance learning through the use of PowerPoint presentations and increase their positive effects on learning, more research is needed to be conducted with a larger number of students and lecturers with an aim to better understand what exact modifications are required to better cater for students' needs and adapt to the changing face of education.

## References

- Alkash, K., & Al-Dersi, Z. (2013). Advantage of using PowerPoint presentations in EFL classroom. *International Journal of English Language and Translation Studies*, 1, 3-16.
- Apperson, J. M., Laws, E. L., & Scepansky, J. A. (2008). An assessment of student preferences for PowerPoint presentation structure in undergraduate courses. *Computers and Education*, 50, 148-153.
- Baddeley, A. D. (2002). Is working memory still working? *Science*, 7, 85-97.
- Bayne, S. (2015). What's the matter with 'technology-enhanced learning'? *Learning, Media and Technology*, 40, 5-20.
- Bektaş, Ö.Ö. (2014). Sosyal bilgiler dersinde powerpoint sunum destekli öğretimin akademik başarıya ve öğrenme yaklaşımlarına etkisi. *Adıyaman Üniversitesi Sosyal Bilimler Enstitü Dergisi*, 17, 285-320.
- Conole, G. (2013). Designing for learning in an open world. London: Springer.
- Craig, R., J., & Amernic, J. H. (2006). PowerPoint presentation technology and the dynamics of teaching. *Innovative Higher Education* 31(3), 147-160.
- Creed, T. (1997). *PowerPoint, no! cyberspace, yes!*. *The National Teaching and Learning Forum*, 6. Retrieved from <http://www.ntlf.com/temp/backup/powerpoint.htm> on 7 August 2020.
- Farkas, D. (2006). Toward a better understanding of PowerPoint deck design. *Information Design Journal and Document Design*, 14, 162-171.
- Gambari, I., Taiwo, H. & Balogun, A. S. (2015). Effectiveness of PowerPoint presentation on students' cognitive achievement in technical drawing. *Malaysian Online Journal of Educational Technology*, 3(4), 1-12.
- Gier, V.S. & Kreiner, D.S. (2009). Incorporating active learning with Power-Point-based lectures using content-based questions. *Teaching Psychology* 36 (2), 134-139.
- Hill, A., Arford, T., Lubitow, A., & Smollin, L. M. (2012). 'I'm ambivalent about it': The dilemmas of PowerPoint. *Teaching Sociology*, 40(3), 242-256. <https://doi.org/10.1177/0092055X12444071>
- Hopper, K. B., & Waugh, J. B. (2014). PowerPoint: An overused technology deserving of criticism, but indispensable. *Educational Technology*, 54(5), 29-34.
- Jaleli, S. & Talebi, H. (2014). The effects of PowerPoint presentations on EFL learners' performance and attitude. *Social Sciences and Humanities*, 22(4), 1147-1161.

- Kahraman, S, Kodan, H., & Çevik, C. (2011). Investigation of university students' attitude toward the use of PowerPoint according to some variables. *Procedia Computer Science*, 3, 1341-1347.
- Mayer, R. E. (2005). *The Cambridge handbook of multimedia learning*. New York: Cambridge University Press.
- Merriam, S. B. (1998). *Qualitative research and case study applications in education*. San Francisco: Jossey-Bass Publishers.
- Norvig, P. (2003). PowerPoint: Shot with its own Bullets. *The Lancet*, 362, 343-344.
- Ögeyik, C. M. (2017). The effectiveness of PowerPoint presentation and conventional lecture on pedagogical content knowledge attainment. *Innovations in Education and Teaching International*, 54(5), 503-510.
- San, B. (2019). Facilitating student attention with multimedia presentations: examining the effects of segmented PowerPoint presentations on student learning. *Communication Education*, 68(1), 61-79.
- Susskind, J. E. (2005). PowerPoint's power in the classroom: enhancing students' self-efficacy and attitudes. *Computers and Education*, 45, 203-215.
- Tangen, J. M., Constable, M. D., Durrant, E., Teeter C., Beston, B. R., & Kim, J. A. (2011). The role of interest and images in slide ware presentation. *Computers and Education*, 56, 865-872.
- Uzun, A. M., & Kilis, S. (2019). Impressions of preservice teachers about use of PowerPoint slides by their instructors and its effects on their learning. *International Journal of Contemporary Educational Research*, 6(1), 40-52.
- Yıldırım, A. & Şimşek, H. (2013). *Sosyal bilimlerde nitel araştırma yöntemleri*. Ankara: Seçkin Yayıncılık.



## ENVIRONMENTAL EDUCATION AND AWARENESS TO PROTECT EGYPTIAN TORTOISE (TESTUDO KLEINMANNI) BY LOCAL COMMUNITY PARTICIPATION

Murad Buijlayil<sup>1</sup>, Aşkın Kiraz<sup>2,\*</sup>

<sup>1</sup>Alhyat Organisation to Protect Wildlife and Marine Organisms, Dernah, Libya, [muradbuijlayil@gmail.com](mailto:muradbuijlayil@gmail.com)

<sup>2</sup>Near East University, Atatürk Faculty of Education, [askin.kiraz@neu.edu.tr](mailto:askin.kiraz@neu.edu.tr)

\*Correspondence\*: [askin.kiraz@neu.edu.tr](mailto:askin.kiraz@neu.edu.tr), Tel: +903922236464/5432

### Abstract

This research has examined the effectiveness of education and environmental awareness of the local population in protecting Egyptian tortoises. The study aimed to obtain information about the relationship between the level of education, monthly income and its relationship to tortoise protection and the prevention of smuggling and illegal trade. The results were obtained through the preparation of a questionnaire that included 40 people from the local population. They were surveyed using the SPSS26 program. According to the results obtained by the research, significant differences were found in the environmental attitudes of the local population who did not have a chance to have a good education and their monthly income was very low. It could be said that the people who got a good opportunity for education and their economic situation is sfigure, this has a positive impact on their environmental behaviour.

**Keywords:** Environmental education, environmental awareness, Egyptian tortoise.

### Introduction

The Egyptian tortoise, Testudo Kleinmanni, is a small terrestrial tortoise which inhabits in sandy areas and dunes throughout north eastern Libya (Schleich, 1989), Northern Egypt, Sinai and eastwards to the Northern Negev in Israel (Flower, 1933; Iverson, 1986; Mendelssohn, 1982). The Egyptian tortoise is an endangered species threatened by habitat destruction and commercial collecting. Its scientific name is Testudo Kleinmanni and its native habitat is in the region of the middle of northern Libya to Palestine and it was classified and registered for the first time in Egypt. The Egyptian turtle is currently named as one of the most endangered wild turtles in the world and in Egypt. This type of turtles is about to be extinct in Libya due to the illegal trade and smuggling of such rare creatures in large quantities (Geffen and Mendelssohn, 1991).

Currently, the International Union for Conservation of Nature ranks, this species on the "Red List" as a species highly vulnerable to extinction, which is the highest degree before extinction from the wild. The Egyptian turtle in the mid- twentieth century, according to what is known about its history, inhabited a geographical area estimated at 123610 square kilometres, but now this area has decreased to 16600 square kilometres. As for its number, it has decreased to 85% from 55600 turtles to 7470. In such case, the Egyptian turtle may become extinct within the next 20 years (Baha El Din, 2006).

Today's remaining distribution area is limited to last small populations in the three provinces of Libya (Tripolitania, Fezzan and Cyrenaica) and in the northern regions of the Negev desert, near the border of Egypt. In Egypt, the original population is considered to be

extinct. However, new populations have been successfully resettled for several years by breeding-programs (St John, 2015). *Testudo Kleinmanni* lives in Libya on solidified, sometimes very stony sandy soils or in the sand dunes of the desert on the edges areas of the Negev desert (Attum, 2007).

A hundred years ago the original range of the Egyptian tortoise existed in limited areas on, the coastal strip of Libya (approximately 90 km) through Egypt and the Sinai Peninsula to the northern regions of the Negev desert of Israel. Over the years, the habitat of *Testudo Kleinmanni* has been increasingly destroyed by human hands. The construction of large hotel complexes, the use of land for grazing livestock or military stations and roads are the main causes of this habitat destruction. But also the collection of thousands of specimens for sale in Egyptian markets and pet shops or for the illegal transport into the world, have so decimated the populations of the Egyptian tortoise, that nowadays only small populations in Libya, the origin populations are now considered to be extinct in Egypt (Murphy, 2016; Whitford, & Duval, 2019). In 1995, the Egyptian Tortoise was placed under the protection of the Washington Convention, it is listed in Appendix 1. In the IUCN Red List, it has been classified as "critically endangered" - threatened with extinction since 2003 (Mulliken, 2009).

The ecological knowledge and participation of local communities can contribute to the conservation of biodiversity. Members of a local community often have field skills, such as tracking, and ecological knowledge such as species identification, as well as knowledge of an animal's behaviour, that people from outside the community often lack (Berkes, 2004; Gerhardinger, Godoy, and Jones, 2009). Local communities often reside or use the natural resources in protected areas or parks because these areas are their traditional grazing grounds or may have religious significance. In addition, local communities may also depend on wildlife populations for food, resale of meat, or resource use. Conservationists may try to protect these wildlife resources by making conservation of wildlife financially more lucrative through alternative sources of income, such as ecotourism, employment in conservation work, or craft initiatives (Grainger, 2003; Joa, Winkel, and Primmer, 2018; Townsend et al., 2005).

## Objective of Study

This study was planned and carried out for the following purposes:

- Preserving the Egyptian tortoise, especially after its release,
- Awareness and appraisal of society about the role of these tortoises in nature, especially since this species is nearing extinction,
- Local community participation and ex situ conservation has the potential to assist the recovery of the endangered Egyptian tortoise (*Testudo Kleinmanni*).

## Research Questions

In line with the purpose of the study, the following research questions were formed and the study was completed in parallel with these research questions.

- Does the level of education impact the preservation of Egyptian tortoises?
- Does the monthly income make any difference in the process of smuggling and selling Egyptian tortoises?
- What is the level of environmental awareness of the local population?
- What is the effect of attending environmental lessons and lectures on preserving Egyptian tortoises?

## **Study Area**

The study was conducted west of the town of Darnah, in the east of Libya, near Wadi al-Naqa to the west of Derna, about 10 km (32°44'57.0"N 22°33'08.7"E) since this region is rich in biological variety and also is one of the suifigure lands for the Egyptian tortoise to live in. for several reasons, the most important of which is the abundance of food and the good climate for the breeding of these tortoises.

## **Methodology**

In this study, the collection and analysis of the data obtained in line with the aims and sub-objectives of the study was carried out according to qualitative research methods. This study mainly focused on determining the efficiency of the local population to improve environmental awareness in the region. This study was based on a field study conducted in the western city of Derna, Libya. The method applied in this study to make it more reliable is the qualitative method using the structured research form.

## **Participants and Samples**

The study was conducted in the eastern part of Libya among 40 local people in Wadi Al Naqa, west of the city of Derna, Libya. This study has focused on adult and eligible population and the criteria used in this study include being a permanent resident in the study area and on willingness to adhere to the study protocols and complete the study. Each person was given structured questionnaire by researcher. Participants were first informed about the purpose of the study, and it was explained to the participants that they would make a scientific contribution by filling out this form. With the foresight that it might involve a sensitive and illegal situation, it was stated that no identity information would be requested from the participants, and their sincere answers would never be used against them.

## **Data Collection Tools**

In this study, which was planned to increase the environmental awareness of the local population in the protection of the endangered Egyptian turtles, a structured interview form was prepared by the researcher. The first section of that form involves a demographic information form, in which personal information was measured first. The demographic form focused on educational statuses, information about monthly income and whether a person previously attended environmental lectures or not. As the second section, the Egyptian Turtle Awareness Form prepared by the researcher in a structured manner in accordance with qualitative research methods was also used. The structured form was created in line with the opinions of five experts in the fields of science, linguistics, biology, ecology and environmental education. The questions in the measurement tool are structured to uncover the scope of environmental awareness, gain insight into preventing the large number of illegal smuggling and sales of Egyptian turtles, and revealing the impact of turtle reduction on the environmental balance in Derna, Libya.

## **Data Analysis**

The data obtained in this study, which aims to reveal the awareness of the participants about the protection of the Egyptian tortoise and the environment, was personally analysed by the researcher. The data obtained in the study were analysed by content analysis in accordance with qualitative research methods. The analysis of the obtained data is presented

comparatively with figures of frequency and percentage. Percentage calculations are based on the number of respondents rather than using a total sample.

### Validity and Reliability

In order to make the research reliable, validity and scientific process research ethics were taken into consideration. Questions were given directly to the participants. The researcher showed a serious attitude in order not to affect the research and made explanations when necessary. The researcher gave the participants the required time while applying the forms and acted objectively in adverse situations.

### Results and Discussion

A qualitative research approach was used to achieve the aims of the study. This research includes the general information and the statistical analysis of the data collected according to the research procedures described.

**Figure 1.**

*Relationship Between Education Status and Collected Tortoises to Be Sold*

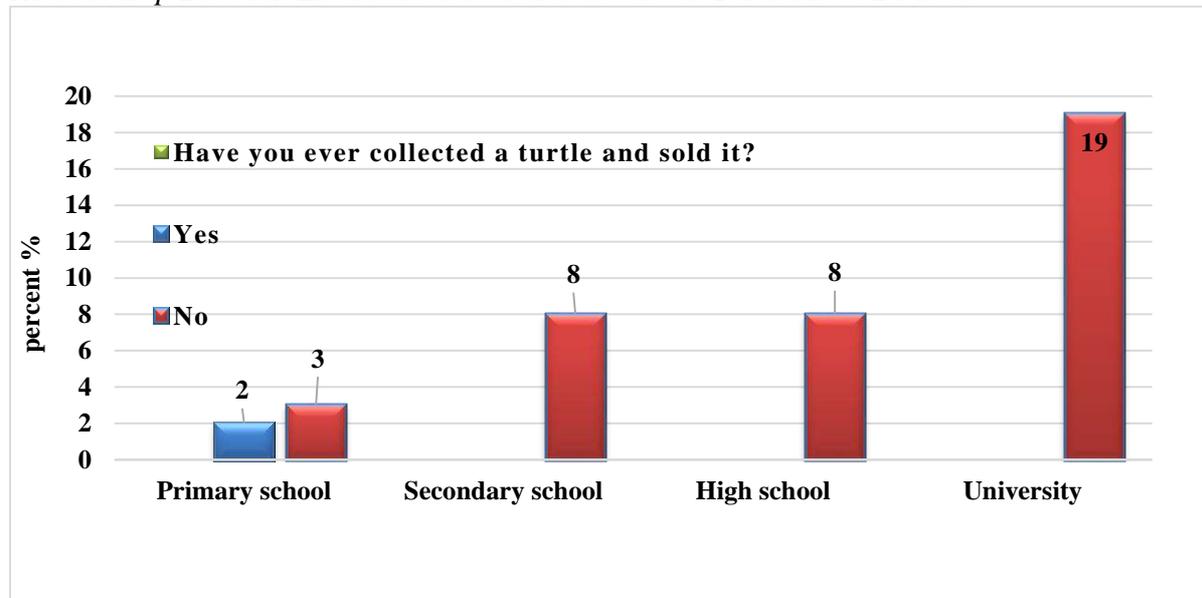


Figure 1 examines the relationship between education level and turtle sales. This figure can be interpreted as the reflection of the level of education on environmental awareness. Well-educated people, unlike those who do not have a good education, have not collected and sold Egyptian turtles before. People with low education levels are targeted by smugglers because they do not know enough about the importance of these endangered tortoises' species.

**Figure 2.**

*Relationship between Income Monthly and Collected Tortoises to Be Sold*

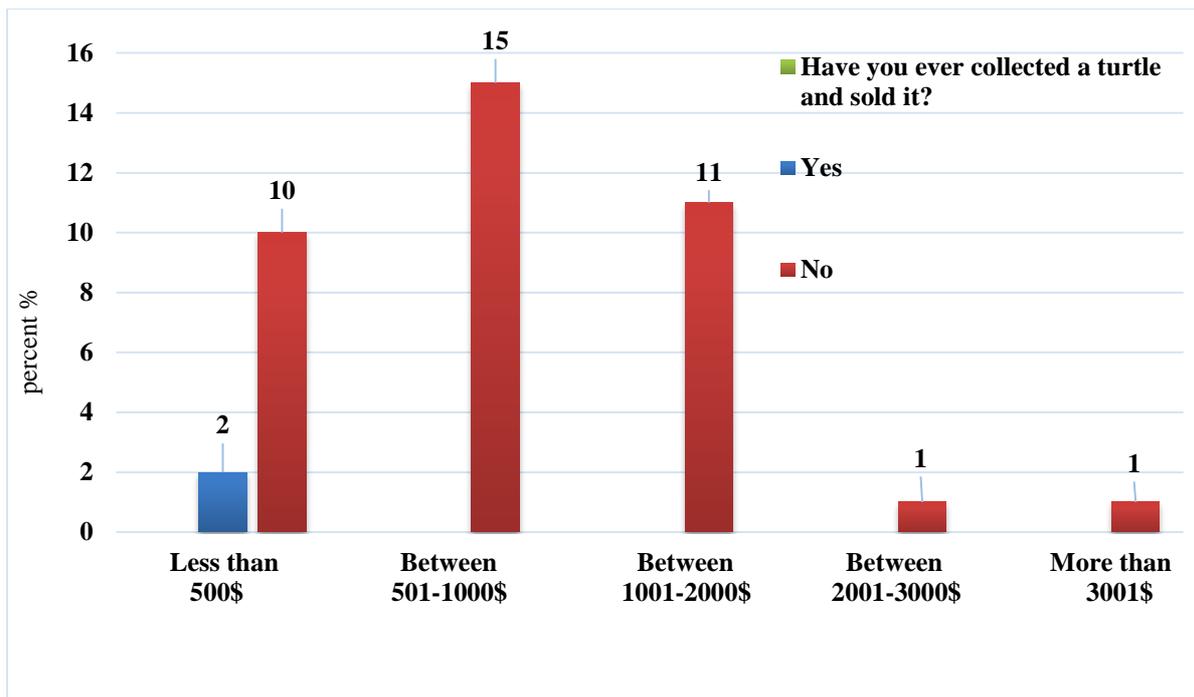


Figure 2 examines the relationship between monthly income and turtle sales. As can be seen from the figure, those with a monthly income of more than \$ 501 have never sold turtles. This figure reveals that, in fact, the financial situation affects environmental awareness. People can resort to illegal methods for the sake of earning money and easily ignore the balance of nature. Smugglers use such people by paying low-income people and using their simple financial situation.

**Figure 3.**  
*Relationship between Education Status and Received Environment Lessons*

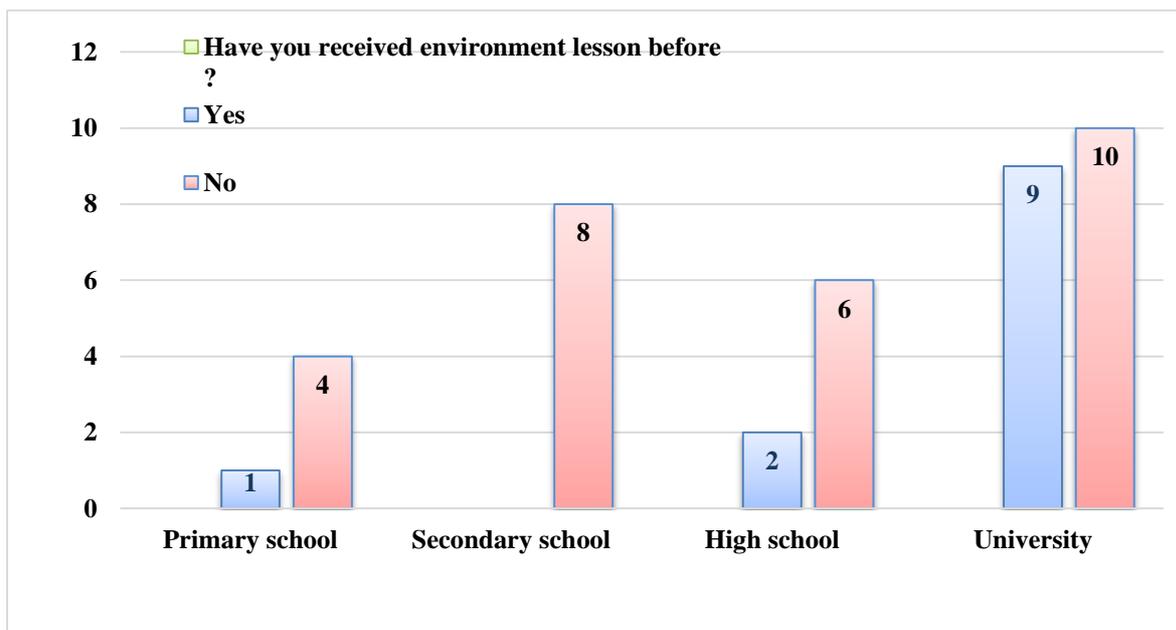


Figure 3 shows the relationship between education level and taking lessons on the environment. "Yes" answers are mostly intended for students studying at universities. It is obvious that taking environmental awareness lectures and conferences is an effective reason for increasing environmental awareness and culture in society.

**Figure 4.**  
*Relationship between Education Status and Reducing Smuggling*

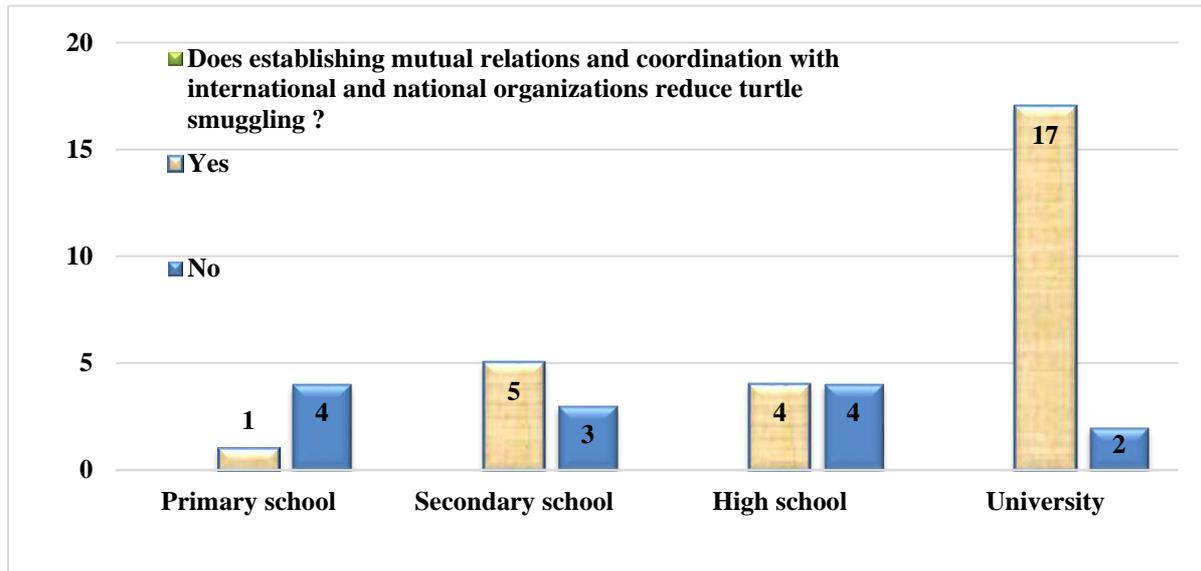


Figure 4 examines the effects of international and local organizations operating in the fields of education and environment on raising environmental awareness. Many of the responses to nature conservation stem from the notion that collaborating with such communities is effective. The majority of "Yes" answers are from a higher education level.

**Figure 5.**  
*Relationship between Education Status and Protection of Turtle Species through an Education Program*

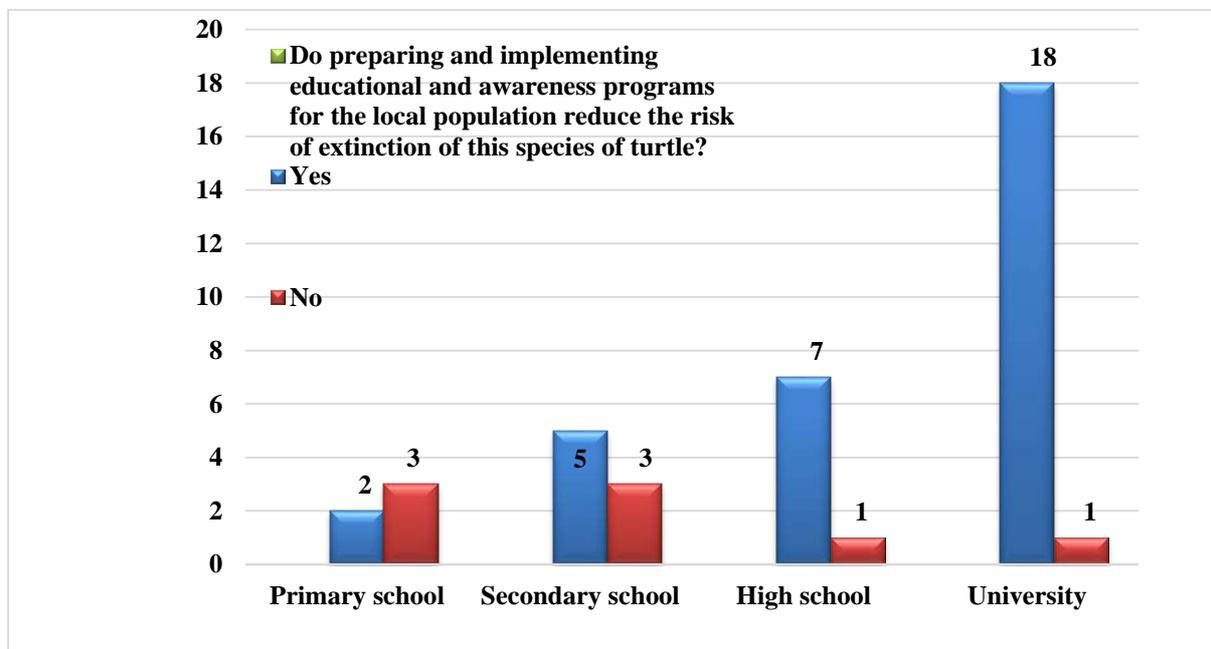
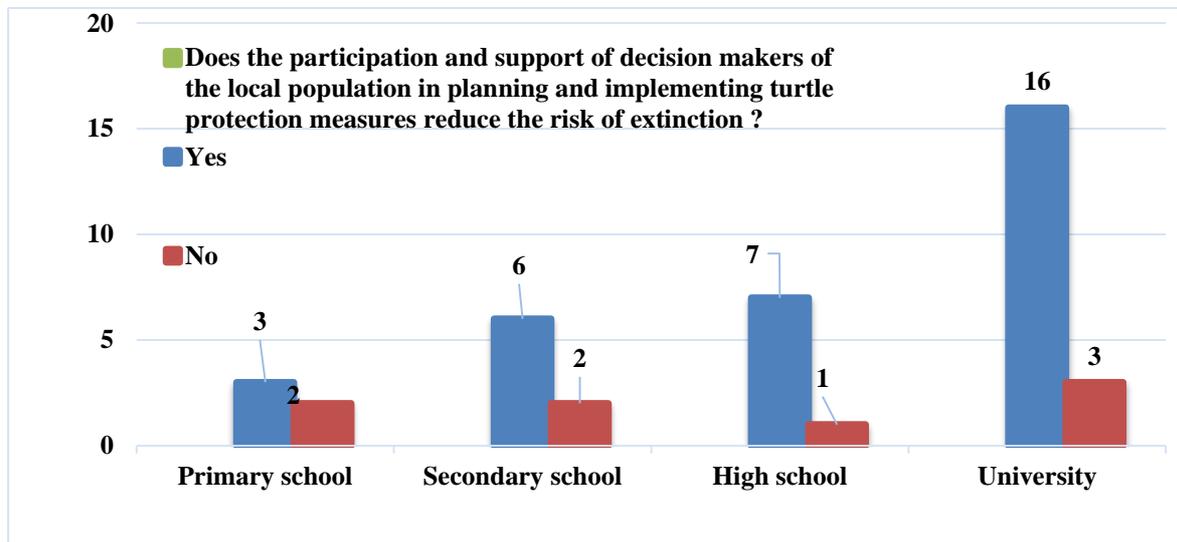


Figure 5 shows the relationship between educational status and the implementation of education and awareness programs for the local population to reduce the extinction risks of such turtle species. It also appears that most of the responses to the decision to implement education and awareness programs for local residents, including university students, are "yes"

because of their knowledge of the importance of protecting Egyptian turtles in the local environment.

**Figure 6.**

*Relationship between Education Statuses and Planning Turtle Protection Measures*



In Figure 6, the relationship between the participation and support of local decision-makers in the planning and implementation of turtle protection measures that reduce extinction risks and their educational status is analysed. It seems that most of the "yes" responses come from university students who accepted this support. As the education level increases, the idea that it will benefit everyone in terms of providing logistical and financial support to the local population is spreading. It is believed that those who do not agree with this support idea do not trust decision-makers.

**Figure 7.**

*Relationship between Education Statuses and Foreign Partners*

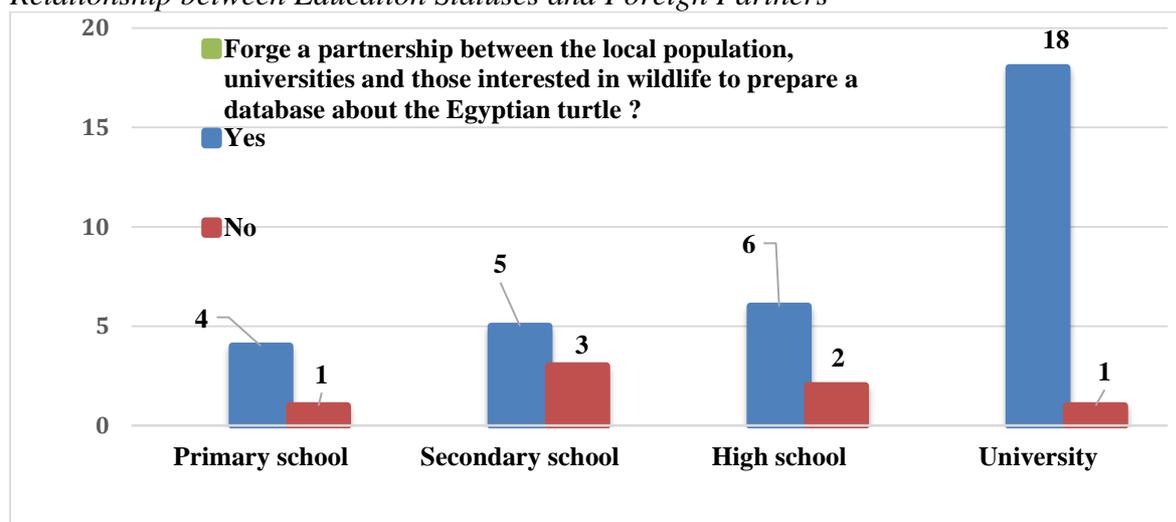


Figure 7 shows the relationship between educational status and establishing a partnership between the local population, universities and foreigners interested in wildlife to prepare a database on Egyptian turtles. Most of the positive responses given were received from university students. Because it is thought that there will be a mutual benefit between

researchers, university students and local population in order to prepare and protect a database on the Egyptian tortoise and to know its role in the local environment.

**Figure 8.**  
*Relationship between Education Statuses and Providing Governmental Support*

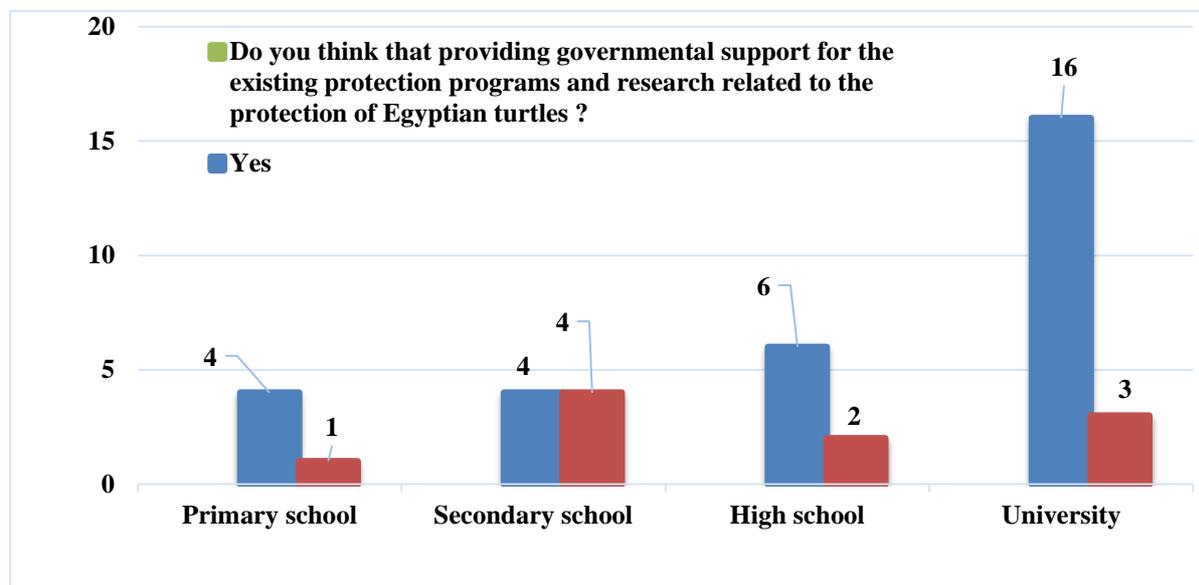


Figure 8 shows the relationship between educational status and state support for current conservation programs and the frequency of research on Egyptian tortoise conservation. Most of the "Yes" answers also come from university students. It would be appropriate to emphasize the importance of state support in the preparation of environmental awareness programs with government support within the Ministry of Environment in order to protect biological diversity and ensure that all kinds of wildlife, especially the environment, are not removed from nature. It can be seen from these data that the awareness that Egyptian turtles are under the threat of extinction is related to the people's education level.

**Figure 9.**  
*Relationship between Education Statuses and The Impact of Education and Awareness On Smuggling*

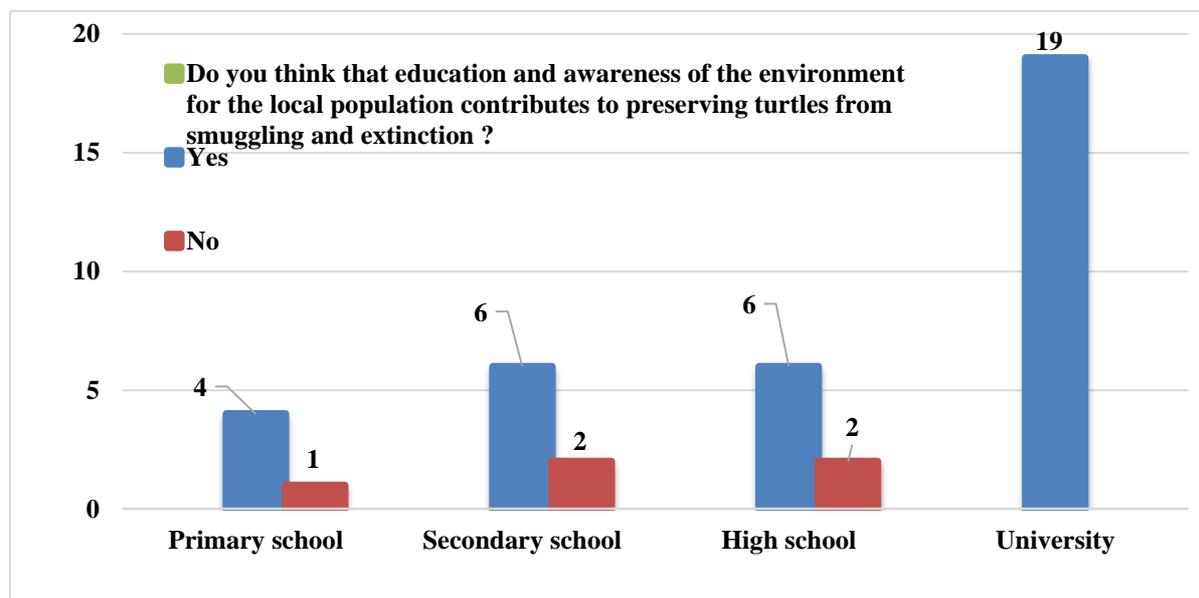


Figure 9 shows the data on the prevention of smuggling of turtles and protection against extinction by increasing the educational status and environmental awareness. Most of the answers are given as "Yes". Increasing environmental education and environmental awareness will contribute to positively changing the behaviour of the local population. Raising the level of environmental education, creating an environmentally friendly person and increasing the protection of the environment is an important contribution to the protection of Egyptian Tortoises.

### Figure 10.

*The Relationship between Education Statuses and Identifying Areas to Prevent Collecting Turtles*

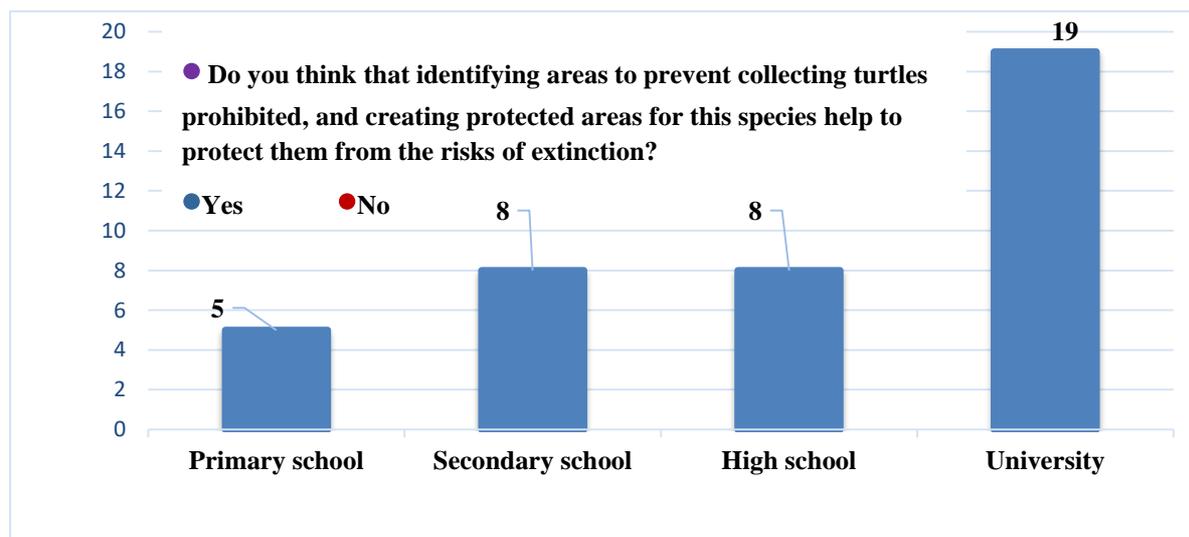


Figure 10 shows the relationship between educational status and identifying areas that prevent turtles from gathering and establishing protected areas to help protect these species from extinction risks. As can be seen from the figure, all answers are "Yes". Education level does not seem to make a difference at this point. It is known that the preparation of protected areas where Egyptian turtles are gathered for smuggling is prohibited. This rule is one of the most important factors contributing to the protection of turtles from illicit trade and their increase in reserves.

## Discussion and Conclusion

This study aims to increase the awareness about environmental education among the local population in the Wadi al-Naqa area to help for reducing the risks of extinction in the Egyptian tortoise.

1. The answers given to the question used in this study were compared with the education levels of the participants. Answers vary according to education level, and the majority of positive answers belong to university students.

2. As a result of the evaluation of the answers given by the participants to the question about their monthly income, it was understood that the answers vary according to the economic situation. Most of the answers are that the monthly income is between medium to low and this is an important factor in this study and has an impact on the protection of turtles and their protection from illegal trade.

3. As a result of the evaluation of the answers given by the participants to the question regarding their taking environmental lessons, it was seen that most of the "yes" answers were received from university students. This means that environmental classes are being taught at the university and is a positive sign in the process of raising environmental awareness, thereby contributing to the conservation of Egyptian turtles.

4. Most of the answers given to the question that establishing mutual relations and coordination between international and local environmental organizations will reduce turtle smuggling are "yes". Answers came from university students due to their knowledge of the positive aspects of international environmental organizations through the exchange of experiences in the field of conservation of nature and biodiversity, particularly in the field of conservation of turtles.

5. Most of the views that the preparation and implementation of education and awareness programs for the local population reduces the risk of extinction of such turtles have been in favour of developing programs that further educate the community about the risk of removing a species from the biological environment.

6. Respondents were asked for their views on the participation and support of local decision makers in the planning and implementation of turtle conservation programs that reduce the risk of extinction. Many of the answers supported the participation in decision making and the initiation of local programs that helped reduce the risk of extinction of turtles.

7. Participants in the study were asked for their views on "establishing a partnership between the local population, universities and those interested in wildlife to prepare a database on Egyptian turtles that contributes to the reproduction of this species in nature". According to the answers, it was seen that the participants from the university education level with scientific research knowledge dealing with the environment and wildlife protection area supported this partnership.

8. The final question of the research is "Do you think that detecting areas that inhibit turtle picking is prohibited, and the creation of protected areas for these species helps protect them from extinction risks?" After knowing the danger posed by the massive smuggling and congregation of Egyptian turtles causing an imbalance or disturbance in the ecosystem, all the responses supported the idea of protected areas.

In order to increase environmental sensitivity in the first place, the level of awareness of the local population about the environment and the protection of species from extinction should be raised, and family levels of awareness of environmental sensitivity should be raised. To increase the environmental perception of the participants, adding mandatory environmental lessons to the curriculum in primary, middle and high schools, the students' knowledge and sensitivity will increase and their positive behavior to the environment will be developed.

For the biological diversity, especially in the field of protecting Egyptian tortoises, it is also necessary for the legislative authority to make more efforts to enact applicable laws, and for the executive to enforce these laws, and to punish those who do not obey them. In addition to all this, it is estimated that the planning activities undertaken by the government, educational institutions and NGOs to support formal and informal education will increase environmental attitudes and awareness to protect the Egyptian tortoise from extinction.

As a result of the analysis of the data, it was determined that there are differences in environmental awareness and environmental culture, especially in education level and monthly income. Analysis show that those who collect and sell turtles cannot find a good educational opportunity and their monthly income is low. Financial status and educational

background is a strong cause in Egyptian tortoise smuggling operations. The low level of education indicates that the presence of turtles in nature affects the awareness of their active role in protecting environmental balance and biodiversity.

### Recommendations

Based on the results of this study, the following recommendations have been developed.

1. With intensive workshops and training courses, environmental awareness and education of local people can be increased in the protection of Egyptian turtles and their environment.
2. Due to its negative role in protecting living things and the environment in general, the state needs to develop a strategy to combat poverty and unemployment.
3. A national database of turtle numbers and locations should be prepared to contribute to their conservation, and community engagement with local and international environmental organizations should be ensured.
4. In regions where turtles are located, celebrations, festivals and events should be organized every year with the participation of local people, and the role of turtles in environmental balance and biodiversity should be clarified.
5. All guilty should be punished in order to prevent the illegal sale and smuggling of turtles and not to expose the Egyptian tortoise to abduction or risk of extinction.

### References

- Attum, O., Baha El Din, S., Carranza, S., Earley, R., Arnold, E., & Kingsbury, B. (2007). An evaluation of the taxonomic validity of *Testudo Weneri*, in Egypt. *Chelonian Conservation and Biology*, 4, 648–655.
- Baha El Din, S. A. (2006). *Guide to Reptiles & Amphibians of Egypt*. American University of Cairo Press, ISBN-13: 978-9774249792.
- Berkes, F. (2004). Rethinking community-based conservation. *Conservation Biology*, 18(3), 621-630.
- Flower, S. S. (1933). Note on the recent reptiles and amphibians of Egypt. *Proc. Zoo. Soc. Land*, 745-749.
- Geffen, E., & Mendelssohn, H. (1991). Preliminary study on the breeding pattern of the Egyptian Tortoise *Testudo Kleinmanni* in Israel. *Herpetological Journal*, 1, 574-577.
- Gerhardinger, L. C., Godoy, E. A., & Jones, P. J. (2009). Local ecological knowledge and the management of marine protected areas in Brazil. *Ocean & Coastal Management*, 52(3-4), 154-165.
- Grainger, J. (2003). 'People are living in the park'. Linking biodiversity conservation to community development in the Middle East region: a case study from the Saint Katherine Protectorate, Southern Sinai. *Journal of Arid Environments*, 54(1), 29-38.
- Iverson, J.B. (1986). *A check list with distribution maps of the turtles of the world*. Indian Paust Printing, India.
- Joa, B., Winkel, G., & Primmer, E. (2018). The unknown known—A review of local ecological knowledge in relation to forest biodiversity conservation. *Land Use Policy*, 79, 520-530.

- Mendelssohn, H. (1982). *Egyptian tortoise*. In: The IUCN Amphibia-Reptilia red data book. I, 133- 136. Groombridge, B. (ed.). Switzerland. Gland: IUC.
- Mulliken, T. (2009). The role of CITES in controlling the international trade in forest products: implications for sustainable forest management. *Non-Wood Forest Products Working Document*, (7), 8-11.
- Murphy, J. B. (2016). Conservation initiatives and studies of tortoises' conservation initiatives and studies of tortoises. Part I Tortoises. *Herpetological Review*, 47(2), 335-349.
- Schleich, H. H. (1989). Merkwalsausbildungen an Landschildkroten in Nordost-Libyen. *Herpetozoa*, 1, 97-108.
- St John, R. B. (2015). *Libya: Continuity and change*. UK: Routledge.
- Townsend, W. R., Borman, A. R., Yiyoguaje, E., & Mendua, L. (2005). Cofán Indians' monitoring of freshwater turtles in Zábalo, Ecuador. *Biodiversity & Conservation*, 14(11), 2743-2755.
- Whitford, W. G., & Duval, B. D. (2019). *Ecology of desert systems*. US: Academic Press.



## HUMAN-COMPUTER INTERACTION IN MEDICAL EDUCATION

Mustafa M. A. Mohamed<sup>1</sup>, Hatem A. M. Darabee<sup>2</sup>, Emrah Soykan<sup>3\*</sup>

<sup>1</sup>Department of Educational Programs and Instruction, Near East University, Nicosia, North Cyprus, Mersin 10, Turkey, [mustafa.elamin999@gmail.com](mailto:mustafa.elamin999@gmail.com)

<sup>2</sup>Department of Educational Programs and Instruction, Near East University, Nicosia, North Cyprus, Mersin 10, Turkey, [hatimdarabee1991@gmail.com](mailto:hatimdarabee1991@gmail.com)

<sup>3\*</sup>Department of Computer Education and Instructional Technologies, Near East University, Nicosia, North Cyprus, Mersin 10, Turkey, [emrah.soykan@neu.edu.tr](mailto:emrah.soykan@neu.edu.tr)

\*Correspondence: [emrah.soykan@neu.edu.tr](mailto:emrah.soykan@neu.edu.tr)

### Abstract

As a pivotal and critical constituent of medical education, notable Human-Computer Interaction (HCI) conduct emphasizes attention for building a domain in which each and every employee develops and excels. HCI, as is always an essential partner in medical field, is here understood as the central idea or the thematic statement of the study. The aim of this study is to summarize the analysis of the selected sample into a compound article that move within the circle of Human-Computer Interaction in medical education. The study was conducted as a review of 55 articles selected from refined 250 ones, within the concept of technology in medicine in a period of 3 years (2016-2019). Descriptive approach is used through an evaluative analysis, where literature review is considered as a tool for data collection.

**Keywords:** Medical education, human-computer interaction, technology, health professionals, medical schools.

### Introduction

‘Human computer interaction (HCI) evolved as a recognized discipline that attracts innovation and creativity. It inspired new solutions, especially for the benefit of the user as a human being, making the user the focal point that technology should serve rather than the other way around.’ Claude Ghaou, (2006), Encyclopedia of Human Computer Interaction.

Medical technology innovation is becoming anonymous with technology, where it is mainly computers and, in all places, and directions.

“Hopkins” model, that requires admissions of earning undergraduate degree to join the medical school, was for more than a century. This is behind solidity and deep-rooted base of knowledge in biomedical sciences and clinical medicine. But a leap change had taken place since adoption. Some scholars considered medical education has taken a backseat in medical schools, others showed that it is lagging far behind others and the rest declared that it is in stagnation period.

Furthermore, criticizing and comparing the technology of smartphone and biosensors, that give the consumers, e.g. patients, the opportunity to control their health and lug power away from healthcare givers, faded and elapsed with the age of Paternalism.

Nonetheless, by 1980s, where applied Computer Assisted Learning (CAL) saved time in comparison to the more traditional in medical education, in 1990s, and due to rapid increase of knowledge and technologies, differing practice frameworks and pedagogical new understandings, medical schools dared to revise their curricula for more active learning and integrated medical education.

In closure of the last century, Health Information Technology (HIT) that generally refers to ‘computer applications for the practice of medicine’, arose to enhance life expectancy, quality of life, diagnostic and treatment options, as well as the efficiency and cost effectiveness of the healthcare systems.

‘To err is Human’

(Alexander Pope, "*Essay on Criticism, Part II, 1711*")

Within this new era, there is incessant innovation of technology with an astounding pace, particularly, in medicine. This technology simplifies certain aspects of life ascribable to its advantages and increases complexities due to difficulties in using devices associated with it. Usability, that is potentially hazardous, is a vital part and a core factor in human-computer-interaction process. Medical educators, healthcare givers and clients (patients) are supposed to be well versed in dealing with this technology through orientation by technology providers, training by field courses or long-term periods and environmental practice. These are called ‘human factors engineering’, ‘subsequent learning of theoretical contents’ and ‘implementation’, that incorporate the application of principles about human behaviours, abilities and limitations, to the design of tools, devices, environments, and training in order to optimize human performance and safety.

A review of articles was conducted by deploying an online literature search with Science Direct and Google Scholar, as well as other random resources search within Near East University grand library, using key phrases like medical education, technology, computer-assisted instruction or social media. Criteria of inclusion and exclusion for relevance were accustomed to involve the analytic dimensions and elements of the selected study articles. Details into a shared docs tables were displayed through systemic reviews, where itemized on the study purpose, population studied, outcomes measures, results, conclusions and limitations.

### **Significance of the Study**

The study will clearly study the role of technology in medicine with emphasis on medical education and signifies that technology is behind the furtherance of medicine that appears in healthcare systems improvement, efficiency and cost-effectiveness. It inspires medical and health learners, practitioners and instructors to pursue education visions, within its parameters, shares efforts and success.

The study helps to identify the importance of usability and the commentative impact on users, and would benefit health policy-makers, health care industry and stakeholders.

### **Aim of the study**

The aim of the study is to summarize and synthesize the analysis of the selected articles into a compound study paper that moves within the circle of computer assisted medical education, covers identified dimensions and answers the raised queries, such as; stated

research problem, technique and research methodology, tools for collection of data, subject and area of interest, device and application, context of user (Usability), articles distribution according to year of publication, articles distribution according to countries and sampling.

### **Methodology**

Prior to analysis, the collected data was securitized carefully for mislaid data and outliers. The selected data was then analysed by using SPSS software. Still and all, this is a scholarly paper which derived from summative content analysis through a systemic review method (i.e. qualitative descriptive method) that combines quantitative and qualitative researches and database relevant to the area of the study paper. The sampling resources were literature reviews of pertinent interest.

Electronic databases (collected data) from ScienceDirect publications (Contemporary Clinical Trials Communication, n=20, Journal of Biomedical Informatics, n=14 and Computer in Human Behaviour, n=11), Research Gate (Springer, BMC Medical education) and other different resources of a total of fifty-one articles were included. Extra articles (n=4) were lastly added for invaluable contents, particularly in recalling history and the early application of computers in medicine and medical education too.

### **Study Sample**

A collection of 55 articles had been selected out of 1200 articles under the heading of human-computer interaction in medical education in broad heading, sifted in guidance of the keywords stated in the abstract and within a period of three years (2016-2019). The articles had been critically analysed and summarized in a table (appendix) that covers the salient dimensions of technology domination that stated in the said articles.

### **Data Collection and Analysis**

Since literature review is regarded as a data collection tool, it amasses information – such as activities, concepts, etc. – apt to the area of interest. The data (body of information) which collected from ensured and relevant articles, were attentively analysed in relation the raised queries that were announced previously, through descriptive research method and within the dimensions that were initially stated. The analysis criteria that applied was containing:

1. Distribution term of year of publication.
2. Scope of research paper.
3. Distribution term of country;
  - Studies per country
  - Country per year.
4. Data collection technique
5. Method of study
6. Sample of study.
  - Distribution of sample collection
7. Distribution of software application.

Through the stated criteria, database was formed on categories, codes and themes, and the results were analyzed in SPSS statistic application.

## Findings

Findings across the statistical analysis are presumptive to support understanding of HIC notion in medicine and healthcare system alike. Phenomena of social learning, design of future learning platform for follow-up researchers, role of customer dynamics and customer experience in application of smart technologies, structural knowledge can be obtained through the adoption of generated lectures, the expertise(s) of a specific user and up to importance of social factors in encouraging participants to change.

They are summarized in the following tables:

There were notable findings from the six models in Table 1. The models suggested to understand requirements, generate designs that reach the requirements, and evaluate selected design. These commonalities among the models emphasizes designing computer systems that support people so that they can carry out their activities productively and safely, and understanding and creating software and other technology that people will want to use, will be able to use, and will find effective when used [37]. In other words, HCI process supports users in terms of achieving their goals successfully [37]. Although the process titles across the models vary, when looked at the descriptions and key purposes, the objective to achieve in each step were alike.

**Table 1.**  
*Results by Year*

Year	Articles	%
2019	9	17.7
2018	10	19.6
2017	21	41.2
2016	11	21.5
Grand Total	20	100

As it can be seen Table 1, the number of articles dealing with Human-Computer Interaction in Medical Education in Journals obtained from Science Direct Data Base revealed that most of the studies were done in 2017 with a frequency of 21(41.2%) and 2016,2018 and 2019 with a frequency almost equal.

**Table 2.**  
*Distribution of the subject area within the scope of this research*

Study Topics	Frequency	%
Broad Diagnostic and Systems	9	17.6
Medical Education	6	11.7
Patients Attitudes	3	5.8
Interactions of Medical factors	3	5.8
Develop skills	4	7.9

**Table 2.**  
Continuation

Study Topics	Frequency	%
Patients physiology	2	3.9
Healthcare	6	11.7
Cognitive Techniques \ Medical informatics	9	17.6
Compare and study outcomes.	5	10
Human Augmented	2	4
Case Study	2	4
Grand Total	51	100 (rounded)

As can be seen in Table (2), with Human-Computer Interaction in Medical Education examines various subjects, mostly in the Broad Diagnostic and Self-triage Systems with the frequency of 9 (17.6%), Cognitive Techniques \ Medical informatics with the frequency of 9 (17.6%), and Student Attitudes, Patient Care with the frequency of 6 (11.7%).

**Table 3.**  
*Distribution of studies by countries*

Country	Frequency	%
United States	5	50.9
France	1	2
Australia	6	11.7
United Kingdom	4	7.8
Germany	1	2
Norway	2	3.9
Netherlands	2	3.9
Portugal	1	2
China	2	3.9
Canada	1	2
Japan	1	2
Spain	2	3.9
Denmark	2	3.9
Grand Total	51	100 (rounded)

**Table 4.**  
*Distribution in Terms of Countries*

Countries	2016	2017	2018	2019	TF
United States	8	10	4	4	26
France		1			1
Australia		4		2	6
U. K.		2	2		4
Germany	1				1

**Table 4.**  
Continuation

Countries	2016	2017	2018	2019	TF
Countries	2016	2017	2018	2019	TF
Norway	1	1			2
Netherlands			1	1	2
Portugal		1			1
China		2			2
Canada	1				1
Japan				1	1
Spain			2		2
Denmark			1	1	2
Total Frequency	11	21	10	9	51

Table 3 and Table 4 on the distribution of articles in terms of countries revealed that most studies in Human-Computer Interaction in Medical Education were conducted in the United States at a rate of 26 (50.9%) in 2017. In 2017, with a repeat frequency of 21 (41.2%) of the selected studies.

**Table 5.**  
*Data Collection Techniques*

Data Collection Techniques	Frequency	%
Matched-pair	2	4
A questionnaire	3	5.8
Experimental	9	17.6
Interview	2	4
Scale Development	9	17.6
Environment Design	5	9.8
Application Development	9	17.6
Case Study	2	4
Descriptive	1	2
Literature Review	1	2
Semi Experimental	3	5.8
Content Analysis	1	2
Comparative study	4	7.8

Table 5 revealed that 9 (17.6%) of the in Human-Computer Interaction in Medical Education were done through Experimental, Scale Development and Application Development. This finding revealed that the most used data collection technique was through Special metrics Articles designed for a particular purpose.

**Table 6.**  
*Distribution of Data Collection Method*

<b>Data Collection Method</b>	<b>Frequency</b>	<b>%</b>
Qualitative Method	10	19.6
Quantitative Method	14	27.5
Mixed Method	27	52.9
Grand total	51	100 (rounded)

Table 6 revealed that the greater part of the studies in the scope of the research (n=51) was fulfilled through a mixed method of the studies, however, were done through a quantitative method, while 14 of the studies was through the use of qualitative method were preferred.

**Table 6a.**  
*Distribution of Sample Types*

<b>Sample</b>	<b>Frequency</b>	<b>%</b>
Patients	15	29.4
Medical Professional	3	5.8
Students	10	19.6
Hospital (Surgeons, Interns and clinicians)	2	3.9
Special Case	5	9.9
Records Follow-up	2	3.9
Pathologists	3	5.8
Male Patients	4	7.8
Female Patients	2	3.9
Users	1	2
Classrooms	1	2
Households	1	2
Training	1	2
Participant of Short Duration	1	2
Grand total	51	100 (rounded)

**Table 6b.**  
*Distribution of Sample Collection*

<b>Class Interval</b>	<b>Frequency</b>	<b>%</b>
10-Jan	7	13.7
20-Nov	5	9.8
21 - 40	6	11.9
41 - 100	15	29.4
101 - 200	5	9.8
201 - 500	5	9.8
501 - 1000	3	5.8
Over 1000	5	9.8
Grand total	51	100 (rounded)

Table 6a was the sample of the participants that were used in the studies within the scope. As analyzed, the sample on patients has the highest frequency of 15(29.4%) and the students with a frequency of 10(19.6%) each as shown in the table. It is noted in Table 6b that the sample with a class interval of (41 - 100) was at a frequency of 15 (29.4%). Samples at an interval of (1 - 10) were at a frequency of 7(13.7%) each as shown in the Table 6b.

**Table 7.**

*Distribution of Applications (software and hardware)*

<b>Application</b>	<b>Frequency</b>	<b>%</b>
Health Application (Erdusyk, Twitch, TSST, F-PST, FitMindKit, Gadget, REDCap, WBIS)	11	21.5
Computer-based simulation (games, Video, Strong4Life, coding, PAX)	6	11.7
Gestures Interactive (3D)	3	5.9
Program (Intervention, Risk Stratification, VPP)	5	9.9
Systems (EHR, Elgg)	4	7.8
A protocol (based framework for medical education)	7	13.7
Devices	5	9.9
Mobile Application	3	5.9
Reality Application (ARBio App, GeoAR App)	6	11.7
Department	1	2
Grand total	51	100 (rounded)

Table 7 was the sample of the participants that were used in the studies within the scope. As analyzed, the Application on Health Application (Erdusyk, Twitch, TSST, F-PST, FitMindKit, Gadget, REDCap, WBIS) has the highest frequency of 11(21.5%) each as shown in the table.

Finally, since the selected study articles were covering ‘medical education’ randomly, a major limitation arose of absence scale for assessment and correlation, where, again was controlled by subject research and publishing periods as well.

### **Discussion and Conclusion**

A thorough review of the literature within the selected study articles disclosed advantages of technology in medicine for the subject areas. For examples; Erdusyk supported patients for self-triage, 3d hand-gesture in medical and health practitioners explore volumetric medical images (Irene Hernandez-Giron, et.al. (2019), the F-PST for potential trauma registry information, Kyoto-Kagaku patient simulator for training medical students and healthcare practitioners (Plooy Annaliese M et al. (2016), FA (Framework Analysis) and UPT in health informatics for diabetic patients and Oculus Rift and Samsung Gear VR devices as an immersive training application for anatomy in universities. These are examples of technology reflections (Soykan, E. & Uzunboylu, H. (2015), as hardware and software, on whole medicine.

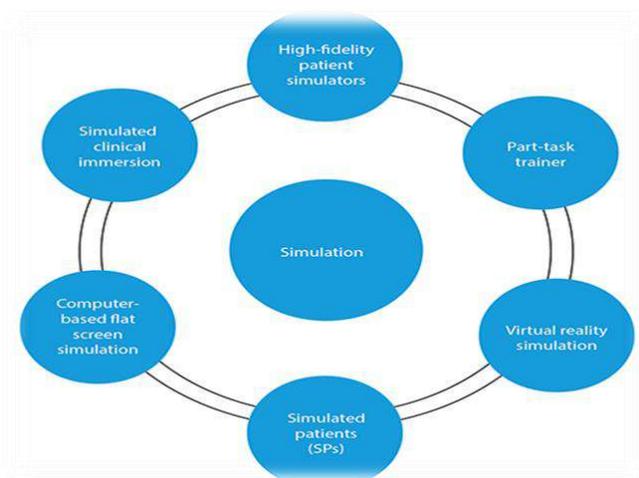
Nevertheless, technology in medicine, as becoming a part of our lives, has advantages and disadvantages, which are vitally deliberated and thought-out, in order to minimize errors that

arise from hackers, mistakes or malfunction of the hard or the software. However, more than 500,000 devices and equipment are used in medical and health fields for the sake of health and medical professional learners, practitioners and patients. Medical physicians believe that GoodRX and or Red Cross First Aid could keep their patients healthier, where IoMT (Internet of Medical Things) could prospectively better and surpass medications dispensed through patient’s data analysis and patient’s entire health profile (condition, care administered and medical history of diagnosis, treatment and further follow-up, etc.) and information.

In spite of many positive effects of technology in medicine, its disadvantages of patients’ privacy, data breaching and hackers generate precaution and close supervision and inspection to achieve the intended purposes. Table 8, summarizes the pros and cons of some of technology media that are intensively applied in medical education.

Great part or sector in medical and health professional education depends on simulation, as it is known as an imitation or a production of computer model for purpose of learning, where simulator is the device that produces or attempts to represent characteristics of a particular occasion. Simulation for medical education, as it was firstly demonstrated in 1968 (American Heart Association Scientific Sessions by Dr Michael Gordon of the University of Miami Medical School), produces artificial representation to replicate clinical situations and scenarios in order to: improve medical and health learners and practitioners’ competencies; improve patient’s safety (no patient’s risks); reduce health care costs; allow the acquisition of clinical skills through hands-on practice, and could be assigned into physical and iterative types through procedures or situations.

*Within those reflections bursts the hidden value of those devices and applications;*



**Figure 1. Simulation modalities.**

(<http://www.cmej.org.za/index.php/cmej/article/view/2697/2898>)

Within those reflections bursts the hidden value of those devices and applications; usability, where it is operationally defined, cognized and assimilated through criteria like learnability, easy to understand, consistency, efficiency, configurability, error tolerability and compatibility. Each of these criteria enables and grants product developers to assess usability from quality and quantity points. Error is a matter of grave concern and plausibility has no room alike. An iterative usability testing should be carried out through products development and covers the users that use or attempt to use those products. All these measures fall under

calibration, accreditation and licensing. Experts agree “usability is best when used early and often, and not at the end when it is too late to make changes” (Redish & Dumas 1993, p.22).

The objective of this study was to state the crucial needs of technology in medicine and particularly, for medical education. Learners and practitioners (medical and health professionals) prefer technology-associated modalities that offer learning material that is interactive, reputable, simple, pragmatic, and coupled with relevant feedback.

**Table 8.**

*Pros and Cons of Technology in Medical Education*

Medium (Approach)	Pros (Advantages)	Cons (Disadvantages)
1. E-health, that is the transfer of health care and resources by electronics.	<p>Provides an invited method for utilization of health resources (information, medicine, etc.).</p> <p>Improvement of information transmission and circulation, for interchange and participation among educational institutions, health professionals, Healthcare providers and stakeholders.</p> <p>Distance learning that overcomes scatter learners and practices.</p>	<p>Time consuming and Financial costs.</p> <p>Users technical knowledge.</p> <p>Changes of workflow and loss of productivity.</p> <p>Privacy and security that may lead data migration.</p> <p>Several liabilities (system break-down/ destruction and loss of data)</p> <p>Social isolation where is developed by companion study.</p>
2. Web-based learning that depends on the nature of intervention and the intended setting (usability)	<p>Scheduling flexibility that includes timings and location.</p> <p>Adapting of interminable resources.</p> <p>Learning individually (on one’s pace of time).</p> <p>Facilitation of assessment and interpretation.</p> <p>Safety of patients</p>	<p>De-individualized instruction (determined instructions).</p> <p>High cost</p> <p>Technical problems that may lead to hindering of learning.</p> <p>Poor technical design.</p> <p>High cost</p>
3. Simulation in medical education	<p>Useful for learners and practitioners training (e.g. surgery)</p> <p>Creation of multiple scenarios for different learners</p> <p>Preferable for drills, common and uncommon emergencies</p> <p>Skill acquisition</p> <p>Assessment and certification</p> <p>Machine Learning (ML) has prospective influence and effect that utilize data sets (patient inputs vs outputs) in order to make prophesy and prognosis.</p>	<p>Lack of fidelity</p> <p>Shortage of trained staff</p> <p>Expense of maintenance</p> <p>Financial limitation and restriction.</p>

**Table 8.***Continuation*

Medium (Approach)	Pros (Advantages)	Cons (Disadvantages)
4. Big Data in healthcare industry (ML and DL)	Deep Learning (DL) that includes Personalized Recommendation Systems and Natural Language, improves comprehensive, efficient and sustainable education, helps and advocates students to more relevant contents.	Time consuming  Space Privacy and security. Accuracy. Replacement of staff

### Ethics

Technology in health and medical practice and education is not an aim or an intension, rather than a tool that applied to achieve an objective. Thus, the incorporation of medical ethics should be an obligatory component in medical education curriculum (World Medical Association, 1999), to adhere to clients' privacy, philosophical morals, laws and values.

Consideration of ethical issues and dimensions in coping with the fast advancement of technology in health and medical usage minimize unprofessional, fraudulent and disrespectful behaviours. They awaken self-awareness, eliminate unethical conducts and arouse consent signature to the fore of any clinical activity.

However, doing better for preserving life is a clear objective but unethical behaviour and misconduct create conflicts such like ignominy in disclosure of patient's medical records (patient's information to reliable parties) and shame (female foeticide and infanticide).

### Recommendations

Carol Barnum (2008, Usability testing essentials: ready, set...test!) stated that 'When usability is inherent in the products we use, it is invisible. We do not think about it. But we know it is there.' Thus, the 'dark side' of technology, which is unseen from majority of academic's circle, creates demands, needs and desideratum for more studies on human (medical educators, health professional learners and practitioners and patients) interaction and system usability. Acquisition systematized, deeper understanding of its benefits and risks, structured and consistent means to work in usability assessment is important for providing authentication. Hence, there is necessity to equalize the over-reliance and overutilization of technology in medicine and medical education, where it becomes a mixture of art and science.

As medical and health fields are depending vitally on technology in their advancements and services' improvement, future researches are encouraged in precision and exactness of relevance, applicability and appositeness by selecting specific terms, phrases or even words as guidance for research vehicles.

Conjointly, there were limitations affected this paper represented into the sample of the study, i.e. content analysis study, which is governed by and depended on determined keywords from selected articles of particular journals. Some of these selected articles might

reveal different findings, which is weakening the correlation in certain areas of the study. Thus, opportunities for further and refined studies in future are immense, particularly, with the speedy rhythm of information and communication media.

### Acknowledgement

We would like to express our special thanks and indebtedness to Dr. Emrah Soykan, who encouraged us to dig little deeper in the subject of ‘Human-Computer Interaction’ with concertation on technology domination in medical technology. Above and beyond, we extend our gratitude and appreciation for the Near East University Grand Library that facilitate the sources of all materials and articles involved in the study paper. We share its pride and hope a thriving future.

### References

- Alexandru, A. G., Radu, I. M., & Bizon, M. L. (2018). Big data in healthcare-opportunities and challenges. *Informatica Economica*, 22(2), 43-54.
- Pavlović, A., Kalezić, N., Trpković, S., Videnović, N., & Šulović, L. (2018). The application of simulation in medical education-our experience “from improvisation to simulation”. *Srpski Arhiv Za Celokupno Lekarstvo*, 146(5-6), 338-344.
- Amaro-Gahete, F., De-la-O, A., Jurado-Fasoli, L., Espuch-Oliver, A., & Gutierrez, A. (2018). Exercise training as S-Klotho protein stimulator in sedentary healthy adults: Rationale, design, and methodology. *Contemporary Clinical Trials Communications*, 11, 10-19.
- Barr, M. (2018). Student attitudes to games-based skills development: Learning from video games in higher education. *Computers in Human Behavior*, 80, 283-294.
- Bartholomeusz, M. D., Bolton, P., Callister, R., Skinner, V., & Hodgson, D. (2017). Design, rationale and feasibility of a multidimensional experimental protocol to study early life stress. *Contemporary Clinical Trials Communications*, 7, 33-43.
- Batterham, P., Calear, A., Gulliver, A., & Farrer, L. (2019). Efficacy of a transdiagnostic, video-based online program for reducing depression, anxiety, and suicidal ideation in adults: Protocol for a randomised controlled trial. *Contemporary Clinical Trials Communications*, 14, 1-5.
- Bhattacharya, A., Kolovson, S., Sung, Y.-C., Eacker, M., & Kientz, J. (2018). Understanding pivotal experiences in behavior change for the design of technologies for personal wellbeing. *Journal of Biomedical Informatics*, 79, 129-142.
- Bote-Curiel L., Muñoz-Romero S., Gerrero-Curieses A. & Rojo-Álvarez J.L., (2019). Deep Learning and Big Data in Healthcare: A Double Review for Critical Beginners, *Applied Science* 2019, 9, 23-31.
- Brunyé, T., Mercan, E., Weaver, D., & Elmore, J. (2017). Accuracy is in the eyes of the pathologist: The visual interpretive process and diagnostic accuracy with digital whole slide images. *Journal of Biomedical Informatics*, 66, 171-179.
- Chung, J., Ozkaynak, M., & Demiris, G. (2017). Examining daily activity routines of older adults using workflow. *Journal of Biomedical Informatics*, 71, 82-90.

- Chen, A., Wu, S., Tomasino, K., Lattie, E., & Mohr, D. (2019). A multi-faceted approach to characterizing user behavior and experience in a digital mental health intervention. *Journal of Biomedical Informatics*, 94, 1-13.
- Christensen, B. J., Schmidt, J., Nielsen, M., Tækker, L., & Sjödin, A. (2018). Patient profiling for success after weight loss surgery (GO Bypass study): An interdisciplinary study protocol. *Contemporary Clinical Trials Communications*, 10, 121-130.
- Collins, S., Ramirez, S., Tsivkin, K., Mar, P., & Rocha, R. (2017). Next generation terminology infrastructure to support interprofessional care planning. *Journal of Biomedical Informatics*, 75, 22-34.
- Delgaty, L., Fisher, J., & Thomson, R. (2017). The 'Dark Side' of Technology in Medical Education. Retrieved from <https://www.mededpublish.org/manuscripts/978> on 09 February 2020.
- Didehbandi, N., Allen, T., Kandalaf, M., Krawczyk, D., & Chapman, S. (2016). Virtual reality social cognition training for children with high functioning autism. *Computers in Human Behavior*, 62, 703-711.
- Doiron-Cadrin, P., Kairy, D., Vendittoli, P.-A., Lowry, V., Desmeules, F., & Poitras, S. (2016). Effects of a tele-prehabilitation program or an in-person prehabilitation program in surgical candidates awaiting total hip or knee arthroplasty: Protocol of a pilot single blind randomized controlled trial. *Contemporary Clinical Trials Communications*, 4, 192-198.
- Driver, S., Juengst, S., McShan, E. E., Bennett, M., Bell, K., & Dubiel, R. (2019). A randomized controlled trial protocol for people with traumatic brain injury enrolled in a healthy lifestyle program (GLB-TBI). *Contemporary Clinical Trials Communications*, 14, 1-9.
- Dugan, S., Lange-Maia, B., Karavolos, K., Kazlauskaitė, R., & Powell, L. (2016). Design of a lifestyle intervention to slow menopause-related progression of intra-abdominal adipose tissue in women: The Women in the Southside Health and Fitness (WISHFIT) study. *Contemporary Clinical Trials Communications*, 4, 74-83.
- Dupuis, M., Khadeer, S., & Huang, J. (2017). "I Got the Job!": An exploratory study examining the psychological factors related to status updates on facebook. *Computers in Human Behavior*, 73, 132-140.
- Fleming, P., Watson, S., Patouris, E., Bartholomew, K., & Zizzo, D. (2017). Why do people file share unlawfully? A systematic review, meta-analysis and panel study. *Computers in Human Behavior*, 72, 535-548.
- Foroudi, P., Gupta, S., Sivarajah, U., & Broderick, A. (2018). Investigating the effects of smart technology on customer dynamics and customer experience. *Computers in Human Behavior*, 80, 271-282.
- Franklin, A., Gantela, S., Shifarrow, S., Johnson, T., & Okafor, N. (2017). Dashboard visualizations: Supporting real-time throughput decision-making. *Journal of Biomedical Informatics*, 71, 211-221.
- Espinoza, J., Chen, A., Orozco, J., Deavenport-Saman, A., & Yin, L. (2017). Effect of personal activity trackers on weight loss in families enrolled in a comprehensive behavioral family-lifestyle intervention program in the federally qualified health center

- setting: A randomized controlled trial. *Contemporary Clinical Trials Communications*, 7, 86-94.
- Garcia, D., Valdez, L., Bell, M., Humphrey, K., & Hooker, S. (2018). A gender- and culturally-sensitive weight loss intervention for Hispanic males: The ANIMO randomized controlled trial pilot study protocol and recruitment methods. *Contemporary Clinical Trials Communications*, 9, 151-163.
- Georgsson, M., & Staggers, N. (2016). An evaluation of patients' experienced usability of a diabetes mHealth system using a multi-method approach. *Journal of Biomedical Informatics*, 59, 115-129.
- Grossman, B., Conner, S., Mosnaim, G., Albers, J., & Kenyon, R. (2017). Application of human augmentics: A persuasive asthma inhaler. *Journal of Biomedical Informatics*, 67, 51-58.
- Horsky, J., & Ramelson, H. Z. (2016, December). Development of a cognitive framework of patient record summary review in the formative phase of user-centered design. *Journal of Biomedical Informatics*, 64, 147-157.
- Huh, J., Kwon, B. C., Kim, S.-H., Lee, S., Chooe, J., Kima, J. (2016). Personas in online health communities. *Journal of Biomedical Informatics*, 63, 212-225.
- Krawczyk, R., Vinther, A., Petersen, N., Faber, J., & Kruuse, C. (2019). Home-based aerobic exercise in patients with lacunar stroke: Design of the HITPALS randomized controlled trial. *Contemporary Clinical Trials Communications*, 14, 1-9.
- Kurowski, B., Stancin, T., Taylor, H., McNally, K., Kirkwoodf, M., & Cassedya, A. (2018). Comparative effectiveness of family problem-solving therapy (F-PST) for adolescents after traumatic brain injury: Protocol for a randomized, multicenter, clinical trial . *Contemporary Clinical Trials Communications*, 10, 111-120.
- Lamy, J. B., Berthelot, H., Favre, M., Ugon, A., Duclosa , C., & Venot, A. (2017). Using visual analytics for presenting comparative information on new drugs. *Journal of Biomedical Informatics*, 71, 58-69.
- Lee, J. Y., Donkers, J., Jarodzka, H., & Merriënboer, J. J. (2019). How prior knowledge affects problem-solving performance in a medical simulation game: Using game-logs and eye-tracking. *Computers in Human Behavior*, 99, 268-277.
- Lopes, D. S., Parreira, P. D., Paulo, S. F., Nunes, V., Regode, P. A., & Nevesf, M. C. (2017). On the utility of 3D hand cursors to explore medical volume datasets with a touchless interface. *Journal of Biomedical Informatics*, 72, 140-149.
- Norman, E., & Furnes, B. (2016). The relationship between metacognitive experiences and learning: Is there a difference between digital and non-digital study media? *Computers in Human Behavior*, 54, 301-309 .
- Nuño, V. L., Wertheim, B., Murphy, B., Wahl, R., & Roe, D. (2019). Testing the efficacy of the Nurtured Heart Approach® to reduce ADHD symptoms in children by training parents: Protocol for a randomized controlled trial. *Contemporary Clinical Trials Communications*, 13, 1-6.

- Robman, L., Guymer, R., Woods, R., & Ward, S. (2017). Age-related macular degeneration in a randomized controlled trial of low-dose aspirin: Rationale and study design of the ASPREE-AMD study. *Contemporary Clinical Trials Communications*, 6, 105-114.
- Kim, S., Werner, P., Richardson, A., & Anstey, K. J. (2019). Dementia StigmaReduction (DESeRvE): Study protocol for a randomized controlled trial of an online intervention program to reduce dementia-related public stigma. *Contemporary Clinical Trials Communications*, 14, 1-11.
- Martínez-Pernía, D., Núñez-Huasaf, J., Blanco, Á., Ruiz-Tagle, A., Velásquez, J., & Gomez, M. (2017). Using game authoring platforms to develop screen-based simulated functional assessments in persons with executive dysfunction following traumatic brain injury. *Journal of Biomedical Informatics*, 74, 71-84.
- Meitz, T., Ort, A., Kalch, A., Zipfel, S., & Zurstiege, G. (2016). Source does matter: Contextual effects on online media-embedded health campaigns against childhood obesity. *Computers in Human Behavior*, 60, 565-574.
- Noel, K., Yagudayev, S., Messin, C., Schoenfeld, E., & Gerald Kelly, W. (2018). Tele-transitions of care. A 12-month, parallel-group, superiority randomized controlled trial protocol, evaluating the use of telehealth versus standard transitions of care in the prevention of avoidable hospital readmissions. *Contemporary Clinical Trials Communications*, 12, 9-16.
- Payne, K., Keith, M. J., Schuetzler, R. M., & Giboney, J. S. (2017). Examining the learning effects of live streaming video game instruction over Twitch. *Computers in Human Behavior*, 77, 95-109.
- Perry, B., Geoghegan, C., Lin, L., McGuire, F., Nido, V., & Grabert, B. (2019). Patient preferences for using mobile technologies in clinical trials. *Contemporary Clinical Trials Communications*, 15, 1-9.
- Reinares-Lara, E., Olarte-Pascual, C., & Pelegrín-Borondo, J. (2018). Do you want to be a cyborg? The moderating effect of ethics on neural implant acceptance. *Computers in Human Behavior*, 85, 43-53.
- Rios, A., & Kavuluru, R. (2017). Ordinal convolutional neural networks for predicting RDoC positive valence psychiatric symptom severity scores. *Journal of Biomedical Informatics*, 75, 85-93.
- Roth, C., Payne, P., Weier, R., Shoben, A., Foraker, R., & Fletcher, E. (2016). The geographic distribution of cardiovascular health in the stroke prevention in healthcare delivery environments (SPHERE) study. *Journal of Biomedical Informatics*, 60, 95-103.
- Ruiz, L. M., Bønes, E., Asunción, E. d., Gabarron, E., Gabarron, E., & Aviles-Solis, J. C. (2017). Combining multivariate statistics and the think-aloud protocol to assess Human-Computer Interaction barriers in symptom checkers. *Journal of Biomedical Informatics*, 74, 104-122.
- Schnall, R., Rojas, M., Bakken, S., Brown, W., & Travers, J. (2016). A user-centered model for designing consumer mobile health (mHealth) applications (apps). *Journal of Biomedical Informatics*, 60, 243-251.

- Streimann, K., Trummal, A., Klandorf, K., Akkermann, K., & Selart, A. (2017). Effectiveness of a universal classroom-based preventive intervention (PAX GBG): A research protocol for a matched-pair cluster-randomized controlled trial. *Contemporary Clinical Trials Communications*, 8, 75-84.
- Taylor, J., Keating, S., Leveritt, M., Holland, D., Gomersall, S., & Coombes, J. (2017). Study protocol for the FITR Heart Study: Feasibility, safety, adherence, and efficacy of high intensity interval training in a hospital-initiated rehabilitation program for coronary heart disease. *Contemporary Clinical Trials Communications*, 8, 181-191.
- Tinati, R., Roesch, M. L., Simperl, E., & Hall, W. (2017). An investigation of player motivations in Eyewire, a gamified citizen science project. *Computers in Human Behavior*, 73, 527-540.
- Tuarob, S., Tucker, C., Kumara, S., Giles, C., & Ram, N. (2017). How are you feeling?: A personalized methodology for predicting mental states from temporally observable physical and behavioral information. *Journal of Biomedical Informatics*, 68, 1-19.
- Vuijk, R., F. A. de Nijs, P., Deen, M., Vitalee, S., Simons-Spronga, M., & Hengeveld, M. (2018). Temperament and character in men with autism spectrum disorder: A reanalysis of scores on the Temperament and Character Inventory by individual case matching. *Contemporary Clinical Trials Communications*, 12, 55-59.
- Warriner, A., Foster, P., Mudano, A., Wright, N., & Saag, K. (2016). A pragmatic randomized trial comparing tablet computer informed consent to traditional paper-based methods for an osteoporosis study. *Contemporary Clinical Trials Communications*, 3, 32-38.
- Yen, N., Hung, J., Chen, C.-C., & Jin, Q. (2019). Design of a computational model for social learning support and analytics. *Computers in Human Behavior*, 92, 547-561.
- Zhang, Y.-f., Gou, L., Zhou, T.-s., Lin, D.-n., & Lia, J.-s. (2017). An ontology-based approach to patient follow-up assessment for continuous and personalized chronic disease management. *Journal of Biomedical Informatics*, 72, 45-59.



## METAPHOR ANALYSIS OF THE PERCEPTIONS OF "GLOBAL WARMING" AS A CONCEPT

Pelin Uretici <sup>1\*</sup>

<sup>1</sup> Near East University, [pelinuretici@gmail.com](mailto:pelinuretici@gmail.com)

\*Correspondence: [pelinuretici@gmail.com](mailto:pelinuretici@gmail.com); Tel.: +905338664040

### Abstract

Humanity used to have a harmonious relationship with nature for a very short period of civilization history. However, the tendency to dominate nature has been the common denominator of all cultures in thought and action for thousands of years. In environmental literature, there is a common consensus that natural balances have changed due to more human activities following the industrial revolution. The environmental problem, defined as "global warming" in recent years, has developed as a result of human activities. This problem affects humanity with its economic, social and cultural dimensions as well as many other living species. Over the past decade, living has increasingly become harder for many living beings on the planet. Policies are being developed at national and international levels to cope with this problem and various opinions and practices are put forward. Most of these practices are based on individual local measures. However, studies show that individuals have misconceptions about this issue. For this purpose, this study aims to understand the perceptions of 87 participants, 65 women and 22 men living in the TRNC, about global warming through a "metaphor analysis". Since the study was conducted within the covid-19 period, it was conducted among the participants who can operate through a digital space. The essence of the study is based on determining how the participants express the concept of global warming, make sense of it and characterize it visually. The study was conducted using a qualitative phenomenology design. With this method, the study aimed to make sense of the phenomena that the participant described depending on their experiences. The data obtained were evaluated by content analysis method. Semi-structured forms were distributed for data collection. The first part of the form is based on demographic information, and the second part is to determine the perceptions of the participants about global warming. In order to do this the question of "If you were to compare global warming to something (abstract, concrete, alive, non-living), what would you compare it to? Why?" was asked to the participants. Lastly, the participants were required to answer the question in the sentence format of; "Global warming is like.... Because .....). In the study, 87 metaphors about the concept of "global warming" created by the participants were evaluated. The analyzed metaphors were gathered under 13 different conceptual categories. The expressions were interpreted and categorized by looking at how often the metaphors formed by male and female participants were used. Since this study does not consist of an equal number of male and female participants, gender differences should not be taken into account in the findings.

**Keywords:** Metaphor analysis, phenomenology, global warming, climate change.

### Introduction

The conflict between humanity and nature has become extremely prominent since the industrial revolution. As a result of this conflict, Global Warming and Climate Change has

become an economic, ecological, social and cultural threat to humanity and nature overall. International conferences and conventions such as the United Nations Climate Change Conference (COP), the United Nations Framework Convention on Climate Change (UNFCCC), the Intergovernmental Panel on Climate Change (IPCC) have been intensely interested in the issue for nearly a quarter of a century. The reports put forward in these conventions and conferences in the UN reveal how global, multidimensional, complex and urgent the security problems are regarding climate change and global warming. Due to the aforementioned characteristics of the problem, global warming and climate change have acquired a central position in the political agenda of the 21st century. In the past decade, global warming, the depletion of the ozone layer, desertification, the destruction of forests, the rise of water levels in coastal cities and the greenhouse effect have come to threaten the continuity of our lives (Keleş & Akarsu, 2016).

Contrary to popular belief, the order of the climate is not going through changes solely due to the influence of humanity. In fact, global climate change has been experienced due to natural factors since the formation of our planet due to events such as volcanic eruptions and changes in the amount of light on the earth's surface. However, today, it is claimed that global warming, a phenomenon that threatens the world by playing a determining role on the new climate order, is the result of human activities rather than natural factors (NASA, 2020).

Global warming refers to the increase in average temperatures at the global level that occurs as a result of the greenhouse effect (Odum & Barret, 2016). In other words, global warming is a term used to describe the increase in the average temperature of the atmosphere that surrounds our world as a thin layer and the world's ocean waters, which constitute two-thirds of the planet we live in (Nart, 2009). Global warming is causing forest fires, deforestation and desertification in some parts of the world while contributing to extreme rainfall, erosion and floods in others (Ersoy, 2006). The cause of global warming is divided into two categories of natural and human effects. 30% of the sun's rays are reflected back through clouds, aerosols and the earth. It is claimed that if these reflected rays had not kept greenhouse gases, the average temperature of the earth would be 33 ° C colder than today and the world would be inhabitable for many living species (Ma, 1998). However, since the Industrial Revolution, there has been an increase in the amount of energy required due to urbanization, industrialization and the increase in the world population which resulted in more fossil fuels being used as an energy source. Since energy sources such as petroleum and coal contain carbon, they emit carbon dioxide (CO<sub>2</sub>) gas when burned. CO<sub>2</sub> gas constitutes 80% of the total greenhouse gases (Hotunoğlu & Recep, 2007). CO<sub>2</sub> emissions, which were 280 ppm for about 800000 years before the industrial revolution, have increased to 400 ppm today (NOAA, 2013). Gas measurements done on the air inside the icebergs in Greenland and Antarctica show that there is a relationship between the increase in CO<sub>2</sub> level in the atmosphere and the warming and cooling of the earth. For instance, it was found that the CO<sub>2</sub> level was very low in the last ice age, 15000-30000 years ago, and very high during a hot interim period 5000 years ago (Sadava et al., 2014).

Content analysis of various studies done in the field of environmental studies in Turkey has illustrated that many participants held misconceptions regarding global warming and climate change. The reasons for these misconceptions are attributed to the fact that the participants had obtained their knowledge on climate change and global warming through mass media and peer groups (Bahar & Aydın, 2002; Bozkurt & Cansüngü, 2002; Arsal, 2007; Kahraman et al., 2008; Kışoğlu et al., 2010). It is seen that the number of academic studies on global warming has intensified between 2007 and 2010. In these studies, it was observed that

the participants had misconceptions about global warming and the greenhouse effect and their academic knowledge level was insufficient, but their awareness and sensitivity about the threats arising from global warming and environmental problems were high (Ünlü et al., 2011). Similarly, according to Bord et al. (1998), although the American public was environmentally sensitive, their level of concern about global warming was low compared to other environmental and social problems in their daily lives. Furthermore, studies conducted in developed countries have found that only a few people believed global warming would have economic effects. The American public perceives CO<sub>2</sub> as the most important pollutant causing global warming, especially among greenhouse gases, and support the government's proposed policies on this issue (Leiserowitz, 2006).

Changing weather temperatures and disasters due to severe weather conditions have led to the formation of international networks that warn different sectors regarding the climate and the media to constantly raise this issue. For example, FEWNET (Famine Early Warning System) has been established in order to announce which regions are prone to drought and the problems that will develop due to drought and to ensure that necessary measures are taken (Fewsnet, 2019). In the Turkish press, the weather has been a subject of interest in 1856 news since the beginning of 2019, with the topic of global warming being included in 7453 news (IHA, 2019). Newspapers, internet news, social media networks, television, documentaries, animations and films about the subject express a level of concern about the future of the world. For example, Leiserowitz (2004) conducted a study on how the movie "the day after tomorrow" raises awareness about global warming and found that people who watched the film developed a higher level of awareness than those who did not.

In this context, this study aims to understand the perceptions of individuals towards global warming with the method of "metaphor analysis". Some researchers state that individuals can explain concepts, perceptions and attitudes they have difficulty in expressing by using metaphors (Arslan & Bayrakçı, 2006). Metaphors are expressed as the conceptualization of a field of experience within another field of experience. In other words, metaphors serve to transfer the understanding of a situation or subject an individual lacks knowledge on to an event or a field they know better (Morgan, 1998). Cerit (2008) defines metaphors as tools that people use to simulate how they see life, environments, events, phenomena, and objects. According to Lakoff and Johnson (1980), "understanding something from another perspective" not only gives us new insights but also impacts our thoughts and actions.

## **Purpose of the Research**

The aim of the research is to reveal the perceptions of the participants on the concept of global warming through metaphors. Determining how the participants express the concept of global warming, make sense of it and visualise it constitutes the basis of this research.

Within the framework of this general purpose, the following questions were aimed to be answered in this research;

1. What are the views of Cypriot adults regarding global warming?
2. What are the views of Cypriot female adult participants on global warming?
3. What are the views of Cypriot male adult participants on global warming?

## Importance of the Research

In order to manage the risks arising from global warming and to get results to improve the situation, impact reduction and adaptation studies are carried out on a global scale and policies and action plans are prepared on this issue (Pachauri & Meyer, 2014). People's perceptions about global warming have an effect on their support for these policies and actions, that is, their reactions to the process. If the public's perceptions regarding global warming are wrong, their reactions to the policies and action plans will also be misplaced.

In this context, the importance of the study is to contribute to the formation of sustainable societies by understanding the perceptions of individuals regarding global warming and by making suggestions that will enable individuals to support "adaptation" and "mitigation" policies related to the measures. In addition, this study will contribute to filling a gap in the field of environmental studies, since there is no research with metaphors expressing the concept of global warming in Northern Cyprus. Lastly, by revealing the differences in the perceptions of women and men regarding global warming, it will contribute to previous studies in the field by providing a gender-sensitive insight.

## Limitations

The limitations defined in this research are as follows:

- 1- The research was conducted in the months of March and June in a limited scope due to Covid-19 regulations.
- 2- The sample of this research consisted of 65 female and 22 male participants which affected the representativeness of this study.
- 3- The age categories were based on the classification of the World Health Organisation which classified the age ranges of 18-65 as young adults and 65-74 as elderly, which further limited the scope of my study as the elderly (75+) was not included.
- 4- A semi-structured survey was used for data collection and the questions were limited to 4 demographic and 1 question regarding the use of metaphors for global warming perception.

## Methodology

The analysis of the metaphors corresponding to the perceptions of the participants regarding the concept of "global warming" was carried out using a phenomenology design. Phenomenology is a qualitative research method that aims to make sense of phenomena described by the researcher based on the experiences of the participant and takes its source from philosophy and psychology. The aim is to reach the core of the individual's experience (Giorgia, 2009; Moustakas, 1994). According to phenomenologists, there is often some commonality about how people perceive and interpret certain events. Studies in the phenomenological design focus on these common points. (Fraenkel, Wallen & Hyun, 2012) In this context, the participants' intuitive perceptions of global warming were considered as a phenomenon, and the common themes in participant's metaphorical descriptions were indicated, and categories were created.

In order to reveal the metaphorical perceptions of the individuals participating in the research on global warming the open-ended question of; "If you were to compare global warming to something (abstract, concrete, alive, non-living), what would you compare it to?"

Why?" was used. The participants were required to use the following sentence structure for their answers; (global warming is like ..... Because .....)

## Sampling

The study was conducted in the months of March and July 2020 with a sample of 118 participants under Covid-19 regulations. The responses of 31 people participating in the study were not accounted for in the analysis as the participant's statements were blank or incomplete. A total of 87 forms, 65 from women and 22 from men, were evaluated. Participants in the study were selected from among individuals who were able to operate a digital environment. In line with the World Health Organization's age classification, the age group of 74 and over were excluded from the study (Balci et al., 2018). In addition, since gender difference was a consideration in this study, easily accessible situation sampling was used for the selection of the sample. In this method, the researcher conducts their research with study groups that they have easy access to (Fraenkel, Wallen & Hyun., 2012). In the study, the focus was on the quality of the data obtained from a small sample group instead of reaching a large number of individuals. The general characteristics of the participants in the study are provided in Table 1.

## Data Collection

The field of this research was Northern Cyprus. A semi-structured form was distributed as a data collection tool in order to determine the participants' perceptions of the concept of "global warming". The form consists of two parts. In the first part, participants were asked to provide demographic information including age, gender, occupational and education status. As for the second part, the form asked the participants an open-ended question of; "If you were to compare global warming to something (abstract, concrete, alive, non-living), what would you compare it to? Why?" and were asked to answer the question in the sentence format of; "Global warming is like.... Because .....). In studies where metaphor forms are used as a data collection tool, the words like "/ similar" evoke the connection between the subject and the source of the metaphor, and help to understand the reasons for the projection or reasons of this metaphor for the individual.

## Data Analysis and Evaluation

The data obtained in this study were evaluated using the "content analysis" technique. In content analysis, it is aimed to reveal the existence of certain words or concepts within a set of texts or texts (Büyüköztürk, Kılıç-Çakmak, Akgün, & Karadeniz, 2008). Content analysis is based on the reorganization of similar data by the researcher in a way that the reader can understand by bringing them together under certain concept and theme titles (Yıldırım & Şimşek, 2006).

The evaluation of the data was carried out with a three-stage study: determining metaphors, coding codes, associating them with a specific theme and collecting them under categories (Patton, 2002). In this context, the data must first be conceptualized and then organized in a logical way according to the concepts. In this study, all the metaphors (monster, pressure cooker, creature, suicide) expressed by the participant were first coded. These encodings are made according to the concepts derived from the data. As a result, a list of metaphors to be used in categorizing the data was obtained. In the second stage, 87

metaphor lists were taken into consideration, and it was determined how metaphors were associated with the concept of global warming with connections/causes / reasons. In the third stage, each metaphor produced was placed in conceptual categories determined by the researcher by associating it with a certain theme according to the participant's perspective on global warming. In this study, 87 metaphors were placed in 13 different categories.

In the last stage, the findings were interpreted. For validity and reliability, the raw data were reported in detail, how the data was obtained, and how the categories were determined by evaluating the data were explained. The data obtained from the participants were stored in order to contribute to other different studies, and at the same time, external reliability was increased.

## Findings

### Conceptual Categories

In the study, 87 metaphors about the concept of "global warming" created by the participants were evaluated. 65 of these metaphors were unique and not repeated. The most repeated metaphor was the tangible entity (f 4) metaphor. The metaphors created by the participants were collected under 13 different conceptual categories after a thorough content analysis.

**Table 1.**

*Categories determined for the concept of "global warming" and the frequencies and percentages of the use of metaphors within each category*

Categories	Frequency ( <i>f</i> )	Gender		Percentage (%)
		Male ( <i>f</i> )	Female ( <i>f</i> )	
As a threat	8	4	4	9.19
As a consequence of humanity	14	12	2	16.09
As a cause and effect relationship	11	6	5	12.64
As a process of extinction	10	7	3	11.49
As an effect	8	6	2	9.19
As a preventable problem	5	5	0	5.74
As a factor that disrupts the natural balance	2	2	0	2.29
As an irreversible process	8	6	2	9.19
As a scenario	3	1	2	3.44
As a concept relating to rising temperature	9	9	0	10.34

**Table 1.**  
*Continuation*

Categories	Frequency ( <i>f</i> )	Gender		Percentage (%)
		Male ( <i>f</i> )	Female ( <i>f</i> )	
As an abstract entity	3	4	0	4.59
As a tangible entity	4	3	1	4.59
As an illness/disease	1	0	1	1.14
Total	87	65	22	100

As seen in Table 1, 87 individuals, 65 men and 22 women, participated in the "Metaphor Analysis of Perceptions Regarding the Concept of Global Warming" study. As there are repeated metaphors, a total of 65 different metaphors were produced. The most frequently repeated metaphors were "global warming as a tangible entity" (4); "global warming as an abstract entity" (3); "global warming as a scenario" (3) metaphors:

Most of the metaphors and projections produced by all the participants in the study were gathered in the category of global warming "as a consequence of humanity".

Similarly, most of the metaphors and projection produced by female participants were gathered in the category of global warming "as a consequence of humanity".

The least used metaphors by female participants were in the categories of global warming 'as a disease/illness' and global warming 'as a scenario'.

Most of the metaphors and projections produced by the male participants in the study were gathered in the category of global warming "as a cause and effect relationship".

The least used metaphors by male participants were in the categories of global warming 'as a preventable problem', global warming 'as a factor that disrupts natural balance', and global warming as an 'abstract entity'.

### Global Warming as a Threat

**Table 2.**  
*"Global Warming as a Threat" Frequency and Percentage Distribution of Metaphors Regarding This Category*

Metaphors	Frequency ( <i>f</i> )	Percentage (%)
Fire	2	2.29
Threat	2	2.29

**Table 2.**  
*Continuation*

Metaphors	Frequency (f)	Percentage (%)
Pandemic	1	1.14
A Bomb that has exploded	1	1.14
Fireball	1	1.14
Blaze	1	1.14
Total	8 4F+4M	9.16

As seen in Table 2, 6 different metaphors created by 8 participants (f 8) were placed under the category of "Global Warming as a Threat". This category represents 9.19% of the survey participants. The most frequently repeated metaphors in the category were "threat" as f (2) and "fire" metaphor for f (2).

Among the total women;  $100 \times 4 / 65 = 6.1\%$  expressed global warming as "Global warming as a threat".

Among the total men;  $100 \times 4 / 22 = 18.1\%$  expressed global warming as "Global warming as a threat".

Some expressions in this category are given below:

*"Global warming is like a threat; because living things and nature are being harmed. Instead of preventing it, we are making it worse and this could end humanity. It poses a great threat to us."*

*"Global warming is like a pandemic disease with no cure; because its effects are felt heavily all over the world."*

*"Global warming is like a bomb that hasn't exploded yet; because if we are not aware of the danger it will do great harm."*

*"Global warming is like a fireball; because it can burn everywhere"*

*"Global warming is a threat. Living beings are harmed. Nature is hurting."*

*"Global warming is like a blaze; because it can cause irreversible harm to people. "*

*"Global warming is like fire; because our world is slowly burning and unfortunately most of us are not aware of it."*

### **Global Warming as a Consequence of Humanity**

**Table 3.**

*"Global Warming as a Consequence of Humanity" Frequency and Percentage Distribution of Metaphors Regarding This Category*

Metaphors	Frequency (f)	Percentage (%)
Pitbull	1	1.14
Creature	1	1.14
Destruction	1	1.14
Melting Ice Cream	1	1.14
Suicide	1	1.14
Getting a Fever	1	1.14
Carbon Dioxide and Death	1	1.14
Unbalanced Living	1	1.14
As an end	1	1.14
Balance	1	1.14
Neglected House	1	1.14
Dying while Living	1	1.14
Human harming the ecological balance	1	1.14
Balloon	1	1.14
Total	14 12F+2M	16.09

As seen in Table 3, 14 different metaphors created by 14 participants (f 14) were placed under the category of "Global Warming as a Result of Human Doing". This category represents 16.09% of the participants in the research. No metaphors have been repeated in this category.

$100 \times 12/65 = 18.46\%$  of total women see global warming as "a result of what people do".

$100 \times 2/22 = 9.09\%$  of total men see global warming as "a result of what people do".

Some expressions in this category are provided below:

*"Global warming is like a pitbull; because it is created by human beings by their own efforts, and it constantly harms human beings and everything around them. "*

*"Global warming is like a creature we created; because it is a problem caused by us and our actions. So we created it. But we do not realize that we will be destroyed by the creature we have created."*

*"Global warming is like destruction; because we are aware that we are destroying ourselves and we continue to do even that. "*

*“Global warming is like ice cream taken out of the refrigerator and forgotten; because eating ice cream gives people pleasure. You eat and you feel happy. You think that nature will give you pleasure like ice cream and exploit it as you wish. Just as when we will realize that it will be like melted ice cream when we will try to do something again.”*

*“Global warming is like suicide; because man has disturbed the balance and order in the cosmos.”*

*“Global warming is like getting a fever; because, just like the harm that viruses do to humans, people also harm the world and raise its temperature.”*

*“Global warming is an unbalanced life; because we are in an unconscious society. Nature is falling apart, when ignorant people are careless about the environment.”*

*“Global warming is like a neglected home; because we could not protect our house, we did not care about our house.”*

*“Global warming is like dying while living; because my children and grandchildren come to my mind. Nature can actually sustain itself but we humans spoil them .”*

*“Global warming is like a human being harming the ecological balance; because global warming is a human-made environmental threat that negatively affects human beings and life, I compared this situation to a person whose own damage is in his own hands.”*

*“Global warming is like the end; because global warming is mostly caused by people. Of course, natural events more or less had an effect on this, but both the smoke from factories and the needs such as deodorant and perfume increase the carbon dioxide gas. That's why the ozone layer was ruptured. In addition, while the warming of the earth normally takes many years, it has increased 1 degree more in recent years due to these gases. Despite this, we do not take measures and continue in the same way. Even more factories and industries are being built. Because of these gases, global warming is increasing more. It causes the ice caps to melt.”*

#### **Global Warming as a Cause and Effect Relationship:**

**Table 4.**

*“Global Warming as a Cause and Effect Relationship” Frequency and Percentage Distribution of Metaphors Regarding This Category*

Metaphors	Frequency (f)	Percentage (%)
Drought	2	2.29
Pressure Cooker	2	2.29
Information	1	1.14
Food	1	1.14
Erupted Volcano	1	1.14

**Table 4.**  
*Continuation*

Metaphors	Frequency (f)	Percentage (%)
Sea	1	1.14
Living Being	1	1.14
A being dehydrated in a dessert	1	1.14
Total	10 (6F+5M)	12.64

As seen in Table 4, 9 different metaphors created by 11 participants (f 11) were placed under the category of "Global Warming as a Cause-Effect Relationship". This category represents 12.64% of the participants in the research. The most frequently repeated metaphors in this category were (f2 "Pressure cooker" and "drought" metaphors).

$100 \times \frac{6}{65} = 9.23\%$  of total women express global warming "as a cause and effect relationship".

$100 \times \frac{5}{22} = 22.72\%$  of the total men see global warming as "a cause and effect relationship".

Some expressions in this category are given below:

*"Global warming is like a drought; because the world will now be warmer than normal, many water sources will dry out and drought areas will increase."*

*"Global warming is like a pressure cooker; because human beings disrupted the world's regular functioning with what they did, it makes a sound as the temperature increases and sometimes explodes with pressure."*

*"Global warming is like information; because it is an event that is shaped by the insensitivity and ignorance of the society."*

*"Global warming is like food made by a person who has no knowledge of cooking; because the actions of people are not in harmony with nature and therefore have negative consequences."*

*"Global warming is like an erupting volcano; because it would be the result of the rising and spreading lava."*

*"Global warming is like the sea; because if we know how to use the sea positively, it serves all living things, and if we use it negatively, it will swallow everything. There is a cause and effect relationship."*

*"Global warming is like the gas that creates the pressure in the pressure cooker; because when the pressure inside the pressure cooker starts to exceed its capacity, it gives a warning with a sound. When we compare the world to a pressure cooker, the world warns us that the capacity*

*is exceeded by many signs. Global warming is the biggest factor that causes these warnings to occur.”*

*“Global warming is like a living being; much like how we look after a beautiful tree so that its fruit grows healthy and how diligently we water it this is also true for global warming. Because as we damage nature, the balance of nature is disrupted and the ozone layer cannot protect us from harmful rays. People actually harm all living things, not nature.”*

*“Global warming is like a person who has been dehydrated for a long time in the desert, because it is exposed to the burning rays caused by global warming, and just as global warming causes the melting of icecaps, it leaves the person to thirst in the desert.”*

*“Global warming is like a drought; because the weather gets too hot, and most water resources will dry. Accordingly, drought will cause fires by causing temperatures to rise.*

### **Global Warming as a Process of Extinction**

**Table 5.**

*“Global Warming as a Process of Extinction” Frequency and Percentage Distribution of Metaphors Regarding This Category*

Metaphors	Frequency (f)	Percentage (%)
As an end	1	1.14
Cancer	1	1.14
Genocide	1	1.14
Illness	1	1.14
Suffocating, invisible fog cloud	1	1.14
Person on drugs	1	1.14
Self-harm	1	1.14
Destruction	1	1.14
Monster	1	1.14
Rotting Fruit	1	1.14
Total	10 (7F+3M)	11.49

As seen in Table 5, 10 different metaphors created by 10 participants (f 10) were placed under the category of "Global Warming as an Extinction Process". This category represents 11.49% of the participants in the research. There is not the most repeated metaphor in this category.

100x 7/65 = 10.76% of total women refer to global warming as "an extinction process".

100 x 3/22 = 13.63% of the total males expresses global warming as "an extinction process".

Some expressions in this category are given below:

*“Global warming is like an extinction; because the water level rises as it causes the glaciers to melt. If this is not prevented, the living creatures living there and then the whole world will be in danger of extinction. It cannot be said that these events are too far in the future from us.”*

*“Global warming is like a cancer cell. It gradually multiplies, causes harm and is deadly. Global warming will adversely affect the whole world if measures are not taken, climates change, and natural disasters will multiply and cause the destruction of the world.”*

*“Global warming is like a genocide; because it is humanity destroying its new generation.”*

*“Global warming is like a slow progressing disease; because it slowly hurts us and leads to a bad end.”*

*“Global warming is like a suffocating, invisible fog cloud; because it is gradually destroying our world and all the life in it.”*

*“Global warming is like a person using drugs; because it destroys itself slowly,”*

*“Global warming is like a person engaging in self-harm; Because just as human beings are killing themselves, we are trying to survive, increasing global warming more and we are killing nature even though we need it ourselves. We become not only our own killer, but also other creatures. It disrupts the ecosystem and the cycle of nature. But we do not know that we will suffer the most from this.”*

*“Global warming is like destruction; because we destroy ourselves and we never stop even though we are aware of it.”*

*“Global warming is like a monster; because it eats us slowly.”*

*“Global warming is like rotting fruit; because it is coming to an end by rotting. However, the world would be so useful and beautiful if it does not rot.”*

### **Global Warming as an Affecting Factor**

**Table 6.**

*“Global Warming as an Affecting Factor” Frequency and Percentage Distribution of Metaphors Regarding This Category*

Metaphors	Frequency (f)	Percentage (%)
Tar	1	1.14
Living Being	2	2.29
Snow Globe	1	1.14

**Table 6.**  
*Continuation*

Metaphors	Frequency (f)	Percentage (%)
Fire	2	2.29
A virus that looks like a fireball	1	1.14
Desert	1	1.14
Total	8 6F+2M	9.19

As seen in Table 6, 7 different metaphors created by 8 participants (f 8) were placed under the category of "Global Warming as an Affecting Factor". This category represents 9.19% of the participants in the research. The most frequently repeated metaphor in this category was "fire" and 'living being'.

Among the total women,  $100 \times \frac{6}{65} = 9.23\%$  expressed global warming 'as an affecting factor'

$100.2 / 22 = 9.09\%$  of total men expressed global warming as "an affecting factor".

Some expressions in this category are given below:

*"Global warming is like tar; because, in every way, it produces damage."*

*"Global warming is like a living being. Because the world is a living being and the global climate change is also a living being that effects and changes the world"*

*"Global warming is like a person shaking a snow globe; Cause every time he shakes the snow globe the contents of the sphere dissipate, representing an increase in natural phenomena with global warming."*

*"Global warming is like fire; causes an increase in temperature and fire."*

*"Global warming is like fire; because the fire is beyond our control, global warming's harm cannot be controlled"*

*"Global warming is like a virus that looks like a fireball because much like a global virus global warming is a problem that affects our whole world. In addition, because the sun rays hitting the earth cannot return to the earth, it increases the temperature of the earth which is the reason why the virus looks like a fireball. This problem does not only affect a particular region but the whole world much like a pandemic."*

*"Global warming is like an alive being; because it directly affects living things."*

*"Global warming is like a desert; drought comes to my mind."*

## Global Warming as a Preventable Problem

**Table 7.**

*“Global Warming as a Preventable Problem” Frequency and Percentage Distribution of Metaphors Regarding This Category*

Metaphors	Frequency (f)	Percentage (%)
Covid-19	2	2.29
A person with an illness	1	1.14
Gas Stove	1	1.14
Bottomless Pit	1	1.14
Total	5 5F+0M	5.74

As seen in Table 7, 4 different metaphors created by 5 participants (f 5) were placed in the category of "Global Warming as a Preventable Problem". This category represents 5.74% of the participants in the research. The most repeated metaphor in this category was "Covid-19".  $100 \times \frac{5}{65} = 7.69\%$  of total women expressed global warming as "a preventable problem".

Among the total men,  $100.0 / 22 = 0\%$  referred to global warming as "a preventable problem".

Some expressions in this category are given below:

*“Global warming is like Covid-19; because it causes deaths in all countries. The only difference is that covid-19 does not have a vaccine or medicine yet, but there are remedies to prevent global warming.”*

*“Global warming is like a patient in need of help; because it needs doctors, that is, sensitive and knowledgeable people for its recovery.”*

*“Global warming is like a gas stove; because it is up to us to raise and lower the temperature. If you turn on the fire too much, the water in the pot will evaporate and the pot will burn. ”*

*“Global warming is like a bottomless pit; because it is up to you not to fall into it. I think we can prevent it if we do whatever measures are necessary to prevent global warming.”*

*“Global warming is like covid-19; because it will kill people. But scientists and people have been crying out for years on how to prevent global warming, while the cure for Corona has not been found yet. But those who have the resources and power are ignoring the scientists”.*

## Global Warming as a Factor that Disrupts the Natural Balance

**Table 8.**

*“Global Warming as a Factor that Disrupts the Natural Balance” Frequency and Percentage Distribution of Metaphors Regarding This Category*

Metaphors	Frequency (f)	Percentage (%)
Pandemic	1	1.14
Suicide	1	1.14
Total	2 2F+0M	2.29

As seen in Table 8, 2 different metaphors created by 2 participants (f 2) were placed under the category of "Global Warming as a Factor that Disrupts Natural Balance". This category represents 2.29% of the participants in the research. No repeated metaphors were found in this category.

$100 \times 2/65 = 3.07\%$  of the total women refer to global warming as "a Factor that Disrupts the Natural Balance".

$100 \cdot 0/22 = 0\%$  of total males refers to global warming as "a Factor that Disrupts the Natural Balance".

Some expressions in this category are given below:

*"Global warming is like a pandemic; because it disrupts the balance of the whole world."*

*"Global warming is like suicide; because just as people kill themselves*

*as we try to stay in this world we are further heightening global warming and we are killing nature, and ourselves. We are not only our own killer, but also of other creatures. It disrupts the ecosystem and the cycle of nature. But we are not aware of how much we will suffer the most from this."*

### Global Warming as an Irreversible Process

**Table 9.**

*"Global Warming as an Irreversible Process" Frequency and Percentage Distribution of Metaphors Regarding This Category*

Metaphors	Frequency (f)	Percentage (%)
Burnt Pot	1	1.14
Mutation	1	1.14
Smoking	1	1.14
Broken Refrigerator	1	1.14
Melting Refrigerator	1	1.14

**Table 9.**  
*Continuation*

Metaphors	Frequency (f)	Percentage (%)
A water pot in low heat	1	1.14
Spoilt Food	1	1.14
Volcano	1	1.14
Total	8 6F+2M	9.19

As seen in Table 9, 8 different metaphors created by 8 participants (f 8) were placed under the category of "Global Warming as an Irreversible Process". This category represents 9.19% of the participants in the research. No repeated metaphor was found in this category.

$100.6 / 65 = 9.23\%$  of the total women expressed global warming as "an irreversible process".

$100.2 / 22 = 9.09\%$  of the total men expressed global warming as "as an irreversible process".

Some expressions in this category are given below:

*"Global warming is like a burnt pot; because even though it is an object that can be fixed with effort, it will never be fully reversed."*

*"Global warming is like a mutation; because just as a mutation is permanent, negative, and generational for human beings, global warming is the same for the world."*

*"It is like slowly dying due to smoking; because our climate is deteriorating gradually and constantly as it gets warmer, everything will decay and become useless."*

*"Global warming is like a broken refrigerator; because the world is slowly becoming uninhabitable and there will be no return"*

*"Global warming is like a melting refrigerator; because it becomes useless when its cooling deteriorates and loses its function"*

*"It is like a pot filled with water over a low fire; because the world is slowly becoming uninhabitable."*

*"Global warming is like spoiled food; because it will bring an inevitable end"*

*"Global warming is like a volcano; because when it is active, it knows no obstacles and burns everything."*

### **Global Warming as a Scenario**

**Table 10.**

*"Global Warming as a Scenario" Frequency and Percentage Distribution of Metaphors Regarding This Category*

Metaphors	Frequency (f)	Percentage (%)
Pandemic	1	1.14
Equation with many unknowns	1	1.14
A lie	1	1.14
Total	3 1F+2M	3.44

As seen in Table 10, 3 different metaphors created by 3 participants (f 3) were placed under the category of "Global Warming as a Scenario". This category represents 3.44% of the participants in the research. No repeated metaphor was found in this category.  $100.1 / 65 = 1.53\%$  of the total women referred to global warming as "Global Warming as a Scenario".

Among the total men,  $100.2 / 22 = 9.09\%$  expressed global warming as "Global Warming as a Scenario".

Some expressions in this category are given below:

*"Global warming is like a pandemic; because for years, although experts have talked about the risk of an epidemic, only when we can actually see its direct effects, we feel the need to start taking serious measures against it."*

*"Global warming is like an equation with many unknowns; because it is unclear exactly what to expect, even though there is data."*

*"Global warming is like a lie; because, as human beings, even though we are harming the world like a virus, I think the warming of the earth is a cyclical event."*

### **Global Warming as Relating to Temperature**

**Table 11.**

*"Global Warming as Relating to Temperature" Frequency and Percentage Distribution of Metaphors Regarding This Category*

Metaphors	Frequency (f)	Percentage (%)
A buried watermelon	1	1.14
Broken Oven	1	1.14
Tangible Warmth	1	1.14
Oven that's not fully hot	1	1.14
A living being	1	1.14

**Table 11.***Continuation*

Metaphors	Frequency (f)	Percentage (%)
Desert	1	1.14
Seal	1	1.14
Sauna	1	1.14
Total	9 9F+0M	10.34

As seen in Table 11, 9 different metaphors created by 9 participants (f 9) were placed under the category of "Global Warming as Relating to Temperature". This category represents 10.34% of the participants in the research. No repeated metaphors were found in this category.

Among the total women,  $100.9 / 65 = 13.84\%$  referred to global warming as "relating to temperature".

Among the total males,  $100.0 / 22 = 0\%$  expressed global warming as "relating to temperature".

Some expressions in this category are given below:

*"Global warming is like watermelon buried in the sand. Because watermelon completes its life in a short time and spoils with the effect of heat."*

*"Global warming is like a broken oven; because it warms up more than necessary."*

*"Global warming is like a tangible heat; because we feel the changes as extremely hot."*

*"Global warming is like an oven that is not fully warmed up; because it does not cook the food, but makes it dry."*

*"Global warming is like a desert; because it's hot and dry."*

*"Global warming is like a seal; because it is lonely, helpless and longing for colder temperatures."*

*"Global warming is like a watermelon buried in sand; the temperature of the sand increases and the watermelon gets warmer."*

*"Global warming is like a sauna; because in the sauna, people sweat and their fat melts from excessive heat much like how the ice caps will melt with global warming."*

### Global Warming as an Abstract Entity

**Table 12.**

*“Global Warming as an Abstract Entity” Frequency and Percentage Distribution of Metaphors Regarding This Category*

Metaphors	Frequency (f)	Percentage (%)
Shadow	1	1.14
Abstract	3	1.14
Total	4 4F+0M	4.59

As seen in Table 12, 2 different metaphors created by 4 participants (f 4) were placed under the category of "Global Warming as an Abstract Entity". This category represents 4.59% of the survey participants. The most frequently repeated metaphor in this category has been the "abstract" metaphor.

100. 4/65 = 6.2% of the total women refer to global warming as "Global Warming as an Abstract Entity".

Among the total men, 100.0 / 22 = 0% expressed global warming as "Global Warming as an Abstract Entity".

### Global Warming as a Tangible Entity

**Table 13.**

*“Global Warming as a Tangible Entity” Frequency and Percentage Distribution of Metaphors Regarding This Category*

Metaphors	Frequency (f)	Percentage (%)
Tangible	4	1.14
Total	4 (3F+1M)	4.59

As seen in Table 13, 1 different metaphor created by 4 participants (f 4) was placed under the category of "Global Warming as a Tangible Entity". This category represents 4.59% of the participants in the research. The most frequently repeated metaphor in this category has been the "tangible" metaphor.

Among the total women, 100.3 / 65 = 4.61% referred to global warming as "Global Warming as a Tangible Entity".

100.1 / 22 = 4.54% of the total males expressed global warming as "Global Warming as a Tangible Entity".

### Global Warming as an Illness/Disease

**Table 14.**

*“Global Warming as an Illness/Disease” Frequency and Percentage Distribution of Metaphors Regarding This Category*

Metaphors	Frequency (f)	Percentage (%)
Cancer	1	1.14
Total	1 (1M)	1.14

As seen in Table 14, 1 different metaphor created by 1 participant (f 1) was placed in the category of "Global Warming as a Disease". This category represents 1.14% of the survey participants. The most frequently repeated metaphor in this category was the "cancer" metaphor.

Among the total women,  $100.0 / 65 = 0\%$  referred to global warming "as a disease".

$100.1 / 22 = 4.54\%$  of the total males expressed global warming "as a disease".

Some expressions in this category are given below.

*“Global warming is like cancer; because it is a difficult disease to recover from for the atmosphere and the world”*

### Distribution of Women According to the Identified Categories for Global Warming

**Table 15.**

*Percentage Distribution of Women According to the Identified Categories for Global Warming*

Categories	% Percentage
As a threat	6.15
As a consequence of Humanity	18.46
As a cause and effect relationship	9.23
As a process of extinction	10.76
As an affecting factor	9.23
As a preventable problem	7.69
As a factor that disrupts the natural balance	3.07
As an irreversible process	9.23
As a scenario	1.53

As relating to temperatures	13.84
As an abstract entity	6.15
As a tangible entity	4.61
As an illness/disease	0.00
Total	100.00

According to Table 15, the metaphors created by women regarding global warming are the most frequent in the categories of "Global warming as a consequence of humanity" with 18.46%, "Global warming as relating to temperature" with 13.84% and "Global warming as a process of extinction" with 10.76% of women.

The least used metaphors by women were in the category of "Global warming as an illness/disease".

### **Distribution of Men According to the Identified Categories for Global Warming**

**Table 16.**

*Percentage Distribution of Women According to the Identified Categories for Global Warming*

Categories	% Percentage
As a threat	18.1
As a consequence of humanity	9.09
As a cause and effect relationship	22.72
As a process of extinction	13.63
As an affecting factor	9.09
As a preventable problem	0,00
As a factor that disrupts the natural balance	0,00
As an irreversible process	9.09
As a scenario	9.09
As relating to temperature	0,00
As an abstract entity	0,00
As a tangible entity	4.54
As an illness/disease	4.54
Total	100.0

According to Table 16, the metaphors created by men regarding global warming are the most frequent in the categories of "Global warming as a cause and effect relationship" with 22.72%, "Global warming as a threat" with 18.1% and "Global warming as a process of extinction" with 13.63% of men.

The least used metaphors produced by men were in the category of "Global warming as a preventable problem", "Global warming as a factor that disrupts the natural balance" and "Global warming as relating to temperature".

### Discussion and Conclusion

Global warming has been among the most discussed issues in recent years due to its global and local effects. The subject comes up on various platforms. This problem, which emerges as a human-induced environmental problem, affects many geographies, cycles, living things and ecosystems, as well as people's own social, economic and cultural psychological conditions. For example, soil losses, decrease in fertile agricultural lands cause migration and food shortage (Çukurçayır et al., 1997). It has been known since the 1970s that it is a human-induced problem (Kadıoğlu, 2001; Öztürk, 2002). In this context, in order to be a part of the solution of this problem, it is extremely important to understand what global warming means at the individual level.

As a result of this research, the participants' perceptions of global warming were revealed through metaphors. Furthermore their thoughts on global warming were aimed to be understood through metaphors. The study shows us which metaphors and the meaning of said metaphors (sentences starting with because) were present in all participants, as well as in women and men.

A total of 87 individuals, 65 females and 22 males, participated in the "Metaphor Analysis of Perceptions Regarding the Concept of Global Warming" study. 65 metaphors produced in this study were collected in 13 categories. From here, it is understood that global warming needs to be expressed with many metaphors due to its multi-dimensional effects. The most frequently repeated metaphors were "tangible entity (4); abstract entity (3); fire (3) metaphors. Some of the others were; (fire, threat, desert, alive being, fireball, pitbull, pandemic, covid-19 virus, pressure cooker, unexploded bomb, exploding volcano, destruction, monster, creature, watermelon buried in sand, death, sickness, suicide, genocide neglected house, broken refrigerator, rotten fruit, spoiled food, drought, knowledge.)

Among the metaphors, covid-19, pandemic, and the virus were frequently used to express global warming. According to my literature review these metaphors were not prominent in the previous studies conducted regarding this subject. This shows that the experiences of the current events have a visible effect on perceptions, since the study took place during the pandemic.

- In the study, the metaphors produced by all the participants were mostly gathered in the category of "global warming as a result of humanity" with 16.09%. Furthermore, the majority of women (18.46%), referred to global warming "as a result of humanity". This data among women indicates that women see this problem as a human-induced problem and are aware of their responsibilities.

- In the study, 13.84% of women reported global warming “as relating to temperature”, 10.76% as “a process of extinction”; 9.23% of them as “an irreversible process”; 9.23% as “an affecting factor” and 6.15% as “an abstract entity”.
- In summary, the above ratios show that 1/5 of women, ie 20%, see this problem as an important problem that will bring the end of humanity and approximately the same proportion of women attribute the cause of the problem to human activities.
- Metaphors produced by women and their corresponding expressions were the least frequent in the category of "Global warming as a disease". Although most of the women established relationships (similarities / differences) between global warming and diseases, they did not express it directly as a disease. It was seen that only a few statements were collected in the category of "global warming as a scenario". This situation shows that the majority of women do not perceive global warming itself as a vague statement whose effects are unknown.
- Other categories in which the metaphors created by women were least frequent were “global warming as a factor that disrupts the natural balance (3.07%)”; “Global warming as a tangible entity (4.61%)”; This shows that women do not have information about how the global warming problem affects their living spaces, what kind of problems it creates and therefore what measures should be taken.
- In the study, the metaphors produced by men were mostly in the category of "Global warming as a cause and effect relation” with 22.72%. Although this situation shows that the consequences of the problem in the perception of men can be attributed to a number of reasons, it is seen that more associations were made with the consequences of global warming and temperature increase. In addition, the two men explained this connection by establishing a mechanical connection in the "pressure cooker" metaphor. 18.1% of the expressions corresponding to the metaphors they produced in relation to global warming were placed in the category of "a threat” with 13.63% and 9.09% "an extinction process" and 9.09% "an irreversible process" shows. However, no statements regarding the existence of a preventable problem were found in the statements.

## References

- Arsal, Z. (2007). İlköğretim öğrencilerinin küresel ısınma ile ilgili kavram yanılgıları. *I. Ulusal İlköğretim Kongresi*, Ankara.
- Arslan, M., & Bayrakçı, M. (2006). Metaforik düşünme ve öğrenme yaklaşımının eğitim-öğretim açısından incelenmesi. *Milli Eğitim Dergisi*, 100-108.
- Aydın, İ. H. (2006). Bir felsefi metafor “yolda olmak”. *Dinbilimleri Akademik Araştırma* 6(4), 9-22.
- Aydın, İ. S. (2011). Türkçe kavramının metaforik algılanma biçimleri. *Folklor/Edebiyat*, 173-187.
- Bahar, M., & Aydın, F. (2002). Sınıf öğretmenliği öğrencilerinin sera gazları ve global ısınma ile ilgili anlama düzeyleri ve hatalı kavramlar. *5. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi*, Ankara.
- Bord, R. J., Fisher, A., & Robert, E. O. (1998). Public perceptions of global warming: United States and international perspectives. *Climate Research*, 11(1), 75-84.

- Bozkurt, O., & Cansüngü, Ö. (2002). İlköğretim öğrencilerinin sera etkisi ile ilgili kavram yanılgıları. *H. Ü. Eğitim Fakültesi Dergisi*, 23, 67-73.
- Büyüköztürk, Ş., Kılıç-Çakmak, E., A., & Karadeniz, Ö. A. (2008). *Bilimsel araştırma yöntemleri*. Ankara: Pegem Akademi.
- Cerit, Y. (2008). Öğretmen kavramı ile ilgili metaforlara ilişkin öğrenci, öğretmen ve yöneticilerin görüşleri. *Türk Eğitim Bilimleri Dergisi*, 6(4), 693-712. .
- Çukurçayır, F., Geçer, C., & Arabacı, H. (1997). Yaşam için en değerli kaynaklar hava ve su. *Meteoroloji Mühendisliği Dergisi*, 2, 24-32.
- Ersoy, Ş. (2006). Küremiz ısınıyor. *Bilim ve Ütopya*, 139, 5-13.
- Fraenkel, J. R., Wallen, N. E., & Hyun. (2012). *How to design and evaluate research in education (8. Edition)*. New York: McGraw-Hill.
- Giorgia, A. (2009). *The descriptive phenomenological method in psychology: A modified Husserlian approach*. Pittsburgh, PA: Duquesne University Press.
- Gökbulut, Ö. D. (2020). Etkili kaynaştırma uygulamalarında birlikte öğretim yaklaşımları: İlkokul öğretmenleri ile okul yöneticilerinin metaforik algıları. *Akademik Sosyal Araştırmalar Dergisi*, 8(100), 212-227.
- Hotunluoğlu, H., & Tekeli, R. (2007). Karbon vergisinin ekonomik analizi ve etkileri: Karbon vergisinin emisyon azaltıcı etkisi var mı?. *Sosyoekonomi*, 6(6), 107-126.
- IHA. (2019). *Küresel ısınma ve iklim değişikliği medyanın gündeminde*.  
<https://www.ihacom.tr/haber-kuresel-isinma-ve-iklim-degisikligi-medyanin-gundeminde-803899/>
- Kadıoğlu, M. (2001). *Bildiğimiz Havaların Sonu Küresel İklim Değişimi ve Türkiye*. İstanbul: Güncel Yayıncılık.
- Kahraman, S. Y. (2008). Sınıf öğretmenliği öğrencilerinin küresel ısınma konusundaki farkındalıkları ve bilgi düzeyleri. *GÜ Gazi Eğitim Fakültesi Dergisi*. 28(3), 249-263.
- Keleş, R., & Akarsu, U. E. (2016). Çevre kirlenmesinin boyutları. *İnsan Çevre Toplum*. Ankara: İmge Kitabevi.
- Kesen, A. (2010). Turkish EFL learners' metaphors with respect to English language coursebooks. *Novitas-Royal*, 4(1), 108-118.
- Kışoğlu, M. G. (2010). Prospective Turkish elementary science teachers' knowledge level about the greenhouse effect and their views on environmental education in university, international electronic journal of elementary education. *International Electronic Journal of Elementary Education*, 2(2), 217- 236.
- Kutlay, K., & Şafaklı, O. V. (2013). KKTC. Karpaz bölgesi çevre sorunları ve bilinci üzerine bir çalışma. *LAÜ Sosyal Bilimler Dergisi*, 4(2), 43-54.
- Lakoff, G., & Johnson, M. (1980). *Metaphors we live*. Chicago: The University of Press Chicago.
- Leiserowitz, A. (2004). The day after tomorrow. *Environment*, 46(9), 22-44.
- Leiserowitz, A. (2006). Climate change risk perception and policy preferences: The role of affect, imagery and values. *Climatic Change*, 77(1-2) 45-72.
- Morgan, G. (1998). *Yönetim ve örgüt teorilerinde metafor*. İstanbul: Mess yayınları.
- Moustakas, C. (1994). *Phenomenological research methods*. Thousand Oaks: C.A: Sage.

- Nart, N. (2009). *Daha geç olmadan, küresel ısınma*. İstanbul: İm Yayın Tasarım.
- Odum, E. P., & Barret, G. W. (2016). *Ekolojinin temel ilkeleri*. Ankara: Palme Yayıncılık.
- Özbaş, S. (2017). Öğretmen adaylarının çevre ve küresel ısınma-ya yönelik tutumları. *Iğdır Üniversitesi Sosyal Bilimler Dergisi*, (11), 23-37.
- Öztürk, K. (2002). Küresel iklim değişikliği ve Türkiye'ye olası etkileri. *Gazi Üni. Gazi Eğitim Fakültesi Dergisi*, 22(1), 47-65.
- Pachauri, R., & L. Meyer. (2014). *Climate change 2014: Synthesis report*. IPCC, Geneva, Switzerland.
- Patton, M. (2002). *Qualitative research and evaluation methods (Third edition)*. Thousand Oaks: Sage publication.
- Ravanoğlu, Ö. (2019). *Sürdürülebilirlik ekonomik büyümede enerjinin rolü: Kırgızistan örneği*. Ankara: Eğitim Yayınevi.
- Sadava, D., Hillis, M. D., Heller, H. C., & Berenbaum, M. (2014). *Yaşam bilimi biyoloji. E. Gündüz, İ. Türkan, Çev.*. Ankara: Palme Yayıncılık.
- Ünlü, İ., Sever, R., & Akpınar, E. (2011). Türkiye'de çevre eğitimi alanında yapılmış küresel ısınma ve sera etkisi konulu akademik araştırmaların sonuçlarının incelenmesi. *Erzincan Üniversitesi Eğitim Fakültesi Dergisi*, 13(1), 39-54.
- Vaiz, O., & Bahçelerli, N. (2019). Öğretmenlerin eğitim denetmenlerine ilişkin metaforik algıları. *Folklor/Edebiyat*, 25(97), 263-270.
- Yazıcı, E., Çelik, M., Yıldırım, F. N., & Güneş, A. (2018). Okul öncesi dönemdeki çocukların okul kavramına ilişkin metaforik algıları. *Sakarya Üniversitesi Eğitim Fakültesi Dergisi*, 35, 64-86.
- Yıldırım, A., & Şimşek, H. (2006). *Sosyal bilimlerde nitel araştırma*. Ankara: Seçkin Yayınevi.



## ANXIETY AND SUBJECTIVE WELL-BEING RELATIONSHIP IN INDIVIDUALS WITH VISUALLY IMPAIRED PARENTS

Ezgi Ulu<sup>1</sup>, Mehmet Eyüp Haksal<sup>2,\*</sup>

<sup>1</sup> Assistant Professor Dr., Near East University Faculty of Arts and Sciences Psychology Department.,  
[ezgi.ul@neu.edu.tr](mailto:ezgi.ul@neu.edu.tr)

<sup>2</sup> Graduate master student, [eyuphaksal@gmail.com](mailto:eyuphaksal@gmail.com)

\*Correspondence: [ezgi.ul@neu.edu.tr](mailto:ezgi.ul@neu.edu.tr) ; Tel.: +90-392-223-6464

### Abstract

The aim of this study is to examine the anxiety and subjective well-being levels of individuals between the ages of 18-30, whose mothers and fathers are visually impaired but they don't have any disabilities by their own. 50 individuals were participated in the study whose both of their parents are visually impaired. Research data were collected using the Beck Anxiety and Subjective Well-being Scale and SPSS software was used to analyze the data. As a result of the study, no significant difference was found in terms of anxiety level according to the congenital status of the mother / father visual impairment, but a significant difference was found in terms of subjective well-being only compared to the congenital state of the mother's visual impairment. In addition, a negative, weak and significant relationship was found between individuals' anxiety and subjective well-being levels. It is thought that supporting the children of visually impaired parents from birth will play a protective role for the high anxiety that may be seen in the future.

**Keywords:** Visually impaired, anxiety, subjective well-being.

### Introduction

Anxiety comes to the fore as a concept that is frequently encountered in the current period. Anxiety is a situation that every person can experience in a different level. It can be a mental, behavioral and physical symptoms that occur spontaneously according to the negative situations that individuals encounter (Carlson, Martin & Buskist, 2004). The concept of subjective well-being is a concept that tries to reveal how individuals evaluated themselves and their lives in the past and now (Diener, 1984). All of the cognitive and personal evaluations of people related to their positive or negative emotions and the satisfaction they feel about their own life are included in the concept of subjective well-being (Diener, 1994).

When all the elements in the concept of subjective well-being are considered, the person with high subjective well-being, that is, the happy person, is an individual who is rarely anxious and generally happy and cheerful in his life (Diener, Lucas & Oishi, 2003). In other perspective, when these individuals feel positive emotions intensely and frequently and are satisfied with their lives, they feel negative emotions at a relatively low level and their subjective well-being levels increase. This situation shows that anxiety can have a significant relationship with the concept of subjective well-being.

Parents are among the individuals who have the most impact on individuals' lives. Their attitude towards their children is very influential on the psychological state of children. These

effects can seriously affect people in the long term. From this point of view, it is evaluated that the attitudes of the parents, the situations they are in, can also have an effect on the anxiety and subjective well-being of the children.

The lives of individuals with disabled parents naturally differ from those whose parents are not disabled (Commission for Social Care Inspection (CSCI), 2009). Due to the disability of their parents, it is seen that these individuals are raised under different conditions from birth compared to other people (Kirschbaum & Olkin, 2002). It is thought that this situation may have an effect on their anxiety and subjective well-being of individuals with visually impaired parents.

### **Importance of the Study**

When the literature on anxiety, subjective well-being and visually impaired people is searched, it is seen that generally studies conducted with a sample of parents with visually impaired children (Deniz et al., 2009; Avşaroğlu & Gilik, 2017; Becan, 2017; Avşaroğlu & Çavdar, 2018; Nergiz & Uluç, 2018) or directly on visually impaired individuals (Van der Aa et al., 2015; Stevelink & Fear, 2016; Kumar, 2017). On the other hand, no study on children whose parents are visually impaired has been found in the available literature. Because of its originality, it is thought that this study will made a new contribution to the literature.

### **Objective of the Study**

The general aim of this research is to examine the anxiety and subjective well-being levels of individuals between the ages of 18-30, whose parents are visually impaired and who do not have any disabilities. According to this general aim the study try to answer the below questions,

1. Do the anxiety and subjective well-being levels of individuals whose mothers and fathers are visually impaired differ significantly according to the congenital or acquired status of the parents' visual impairment?
2. Is there a significant relationship between anxiety and subjective well-being levels of individuals whose mothers and fathers are visually impaired?

## **Method**

### **Research Model**

The present study, which is a descriptive one, in of relational screening model among the screening models. It aims to describe a situation that existed in the past or today without changing it and to determine the relationship between two or more variables (Karasar, 2013).

### **Sample Group**

The study group consists of 50 individuals between the ages of 18-30 in Ankara whose mothers and fathers are visually impaired but they don't have any disabilities by their own. For this reason, criterion from sampling methods was chosen for sampling. Criterion sampling includes studying and reviewing situations that meet a set of pre-determined importance criteria (Patton, 2014), and these criteria can be created by the researcher (Yıldırım & Şimşek, 2006).

## Data Collection Tools

"Beck Anxiety Scale" and "Subjective Well-Being Scale" were used in the study. The original scale of "Beck Anxiety Scale" developed by Beck, Epstein, Brown and Steer (1988) to determine the frequency of anxiety symptoms and it was adapted into Turkish by Ulusoy (1993). While Ulusoy (1993) determined the Cronbach Alpha reliability coefficient as 0.930, it was determined as 0.744 in the reliability analysis conducted in this study. The scale consists of 21 questions and in the results, 0-7 points indicate "minimum", 8-15 points "mild", 16-25 points "moderate" and 26-63 points indicate "severe" anxiety level.

The other scale used in the study is "Subjective Well-Being Scale" and it developed by Tuzgöl Dost (2005). It consists of judgments about living spaces and expressions about positive and negative feelings. It consists of 46 items (26 positive and 20 negative) with 12 dimensions. The Cronbach Alpha reliability coefficient was determined as 0.788 in the reliability analysis conducted in this study. The scores that the participants can get from the scale are between 46 and 230, and the high scores are interpreted as the positive subjective well-being of the individual.

## Statistical Analysis of Data

Statistical Package for the Social Sciences (SPSS) was used in the analysis of the data, and the significance level for the analysis was accepted as  $p \leq 0.05$ . After the Kolmogorov-Smirnov Test of Abnormality it was seen that the data fit the normal distribution ( $p = 0.195$ ). In addition, with the Levene test, it was determined that the data were homogeneously distributed. In this context, parametric tests (Independent t-test) were used in the analysis of the data. In addition, Correlation Analysis was conducted to determine whether there was a relationship between the anxiety and subjective well-being levels of the participants.

## Findings

In this section, the findings obtained as a result of the statistical analysis of the collected data are included.

**Table 1.**

*Anxiety and subjective well-being scores of the mother / father by the variable congenital visual impairment*

Variable		Congenital Visual Impairment		N	$\bar{x}$	sd	t	p
Anxiety	Mother	Yes		24	11,58	6,16	1,6	0,116
		No		26	9	5,24		
	Father	Yes		22	9,45	5,27	-0,847	0,401
		No		28	10,85	6,19		
Subjective well-being	Mother	Yes		24	134,54	8,98	2,45	<b>0,019*</b>
		No		26	125,11	17,24		
	Father	Yes		22	130,95	12,11	0,561	0,577
		No		28	128,6	16,39		

\* $p \leq 0.05$

Anxiety level score averages of the participants and Independent Sample t-Test results regarding the congenital state of the mother / father visual impairment are presented in Table 1. According to the analysis, no statistically significant difference was found between the

anxiety level score averages of the participants according to the congenital state of the mother /father visual impairment. ( $t_{\text{mother}}= 1,600$ ;  $p> 0.05$ ; ( $t_{\text{father}} = -, 847$ ;  $p> 0.05$ ).

On the other hand, according to congenital state of the mother / father visual impairment according to the variable of subjective well-being of the participants, again Table 1 shows that the subjective well-being score mean of the participants was statistically significant related to the congenital state of the mother's visual impairment. The difference was found ( $t_{\text{mother}} = 2,450$ ;  $p\leq 0.05$ ). This result indicates that subjective well-being levels differ significantly according to the congenital condition of the mother's visual impairment, and when the mean values are considered, it is determined that the subjective well-being levels of individuals with congenital visual impairment of the mother are higher. There was no significant difference found between the mean scores in anxiety levels of the participants ( $t_{\text{father}} =, 561$ ;  $p> 0.05$ ).

**Table 2.**  
*Anxiety and subjective well-being correlation analysis*

Variable	N	r	p
Anxiety			
Subjective well-being	50	-0,307	0,030*

\* $p\leq 0.05$

According to the result of the Pearson correlation analysis conducted to determine the relationship between the anxiety and subjective well-being levels of the participants, as seen in Table 2, a weak negative and significant relationship ( $r = -0.307$ ,  $p\leq 0.05$ ) was found. In other words, it was found that when the anxiety levels of the participants decreased, their subjective well-being levels increased.

### Discussion

When the anxiety levels of individuals were examined according to whether their parents' visual impairments were congenital or not, it was found that the anxiety levels of the participants did not differ. Although there is no study on parental visual impairment in the searched literature, it is seen that parents with congenital visually impaired children have high anxiety levels (Sakkalou et. al, 2018; Sola-Carmona et. al, 2016a). In addition, it is thought that individuals who became visually impaired later may have difficulties in accepting to continue their lives with disabilities and adapting to their new lives. Before the study, it was predicted that individuals with visually impaired parents may have more anxiety / fear and anxiety levels may be higher compared to individuals with congenital visually impaired parents. However, the research findings did not support this assumption. Although there is no different research finding to compare this finding in the literature, it is thought that the expected result can be achieved by increasing the sample size.

When the subjective well-being levels of individuals were considered according to the congenital condition of their mothers' visual impairments; it has been found that individuals whose mothers have congenital visually impairment have higher levels of subjective well-being compared to those who became visually impaired later in life. Although there is no study related to parental visual impairment in the searched literature, it is seen that the level of well-being decreases as the anxiety level increases in parents with congenital visually impaired children (Sola-Carmona et. all., 2013; 2016a). In order to have a high level of subjective well-being it is also stated that; being married in first nuptials, perceiving the child's condition as not affecting leisure and perceiving one's health as good are important

variables on subjective well-being (Sola-Carmona et. all, 2016b). For this reason, the findings of the research can be interpreted as that individuals with congenital visual impairment parents may have more successful adaptive skills in life or successful other life events which protect their subjective well-being more than the others. However, within the scope of the study, it was observed that there was no difference between the subjective well-being levels of the individuals according to the congenital condition of their father's visual impairment. It is thought that this result may due to the cultural and hereditary attachment of children to mother rather than the father.

Finally, within the scope of the research, it was examined whether there is a significant relationship between the anxiety and subjective well-being levels of the participants. In the literature on the subject, subjective well-being is considered as a protective factor against the psychological disorders. In the studies of Balázs et al. (2018) and Vancamfort et al. (2011), it was reported that there is a negative relationship between subjective well-being and anxiety. In this study, in accordance with the literature, it was determined that there was a weakly negative and significant relationship between anxiety and subjective well-being levels of individuals, in other words, when the anxiety levels of the participants decreased, their subjective well-being levels increased.

### **Conclusion and Recommendations**

As a result of the study, the anxiety levels of the individuals do not differ according to the congenital state of the parent's visual impairment. However, the subjective well-being levels of individuals whose mothers have congenital visually impairment is higher than those whose mother became visually impaired later in life. Also, there is a weak and negative relationship between the anxiety and subjective well-being levels of the participants.

Considering the studies on families with disabilities in the literature, although there are many studies on anxiety, there are limited number of studies on subjective well-being. In addition, it is seen that almost all of the studies on both subjects are directed at families and parents with disabled children. On the other hand, studies on disabled parents are quite limited. In this framework, it is possible to offer some suggestions regarding future studies and applications:

- In the studies to be carried out, using a qualitative method, both anxiety and other variables that affect subjective well-being can be examined. In this context, more comprehensive research can be conducted by referring to the views and experiences of both parents with disabilities and their children.
- Based on the conclusion that there is a negative relationship between anxiety and subjective well-being obtained as a result of the research, it can be suggested that individuals with visual impairment should be supported with psychoeducational programs that increase their subjective well-being levels in order to prevent low anxiety in individuals.
- In order to prevent the high anxiety that may be encountered in the children of visually impaired parents, it is thought that it would be appropriate to support the children of visually impaired parents throughout their childhood from birth.

## References

- Avşaroğlu, S., & Çavdar, İ. (2018). Görme engelli çocuğa sahip anne-babaların kaygı düzeylerinin incelenmesi. *Mehmet Akif Ersoy Üniversitesi Eğitim Fakültesi Dergisi*, 47, 105-122. <https://doi.org/10.21764/maeuefd.399486>
- Avşaroğlu, S., & Gilik, A. (2017). Özel gereksinimli çocuğa sahip anne-babaların kaygı durumlarına göre umutsuzluk düzeylerinin incelenmesi. *İlköğretim Online*, 16(3), 1022-1035. <https://doi.org/10.17051/ilkonline.2017.330239>
- Balázs, J., Miklósi, M., Keresztény, A., Hoven, C., Carli, V., Wasserman, C., & Corcoran, P. (2018). Comorbidity of physical and anxiety symptoms in adolescent: functional impairment, self-rated health and subjective well-being. *International Journal of Environmental Research and Public Health*, 15(8), 1-12. <https://doi.org/110.3390/ijerph15081698>
- Becan, İ. (2017). 7-14 yaş arası zihinsel engelli ve görme engelli çocuğa sahip olan ebeveynlerin umutsuzluk düzeyleri ile anksiyete düzeyleri arasındaki ilişkinin incelenmesi (Unpublished master thesis). Beykent University Graduate School of Social Sciences, İstanbul.
- Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology*, 56 (6), 893-897.
- Carlson, N. R., Martin, G. N., & Buskist, W. (2004). *Psychology*. Great Britain: Pearson Education.
- Commission for Social Care Inspection, (2009). *Supporting disabled parents: A family or a fragmented approach?* London: CSCI.
- Deniz, M. E., Dilmaç, B., & Arıcak, O. T. (2009). Engelli çocuğa sahip olan ebeveynlerin durumluk-sürekli kaygı ve yaşam doyumlarının incelenmesi. *Uluslararası İnsan Bilimleri Dergisi*, 6(1), 953-968.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, 95(3), 542-575. <https://doi.org/10.1037/0033-2909.95.3.542>
- Diener, E. (1994). Assessing subjective well-being: progress and opportunities. *Social Indicators Research*, 31(2), 103-157.
- Diener, E., Oishi, S., & Lucas, R. E. (2003). Personality, culture and subjective well-being: emotional and cognitive evaluations of life. *Annual Review Psychology*, 54(1), 403-425. <https://doi.org/10.1146/annurev.psych.54.101601.145056>
- Karasar, N. (2013). *Bilimsel araştırma yöntemi*. Ankara: Nobel Yayın Dağıtım.
- Kirschbaum, M., & Olkin, R. (2002). Parents with physical, systemic, or visual disabilities, *Sexuality and Disability*, 20(1), 65-80.
- Kumar, S. G. (2017). Visual impairment and mental health outcomes: Lack of research output from India, *Juniper Online Journal of Public Health*, 2(2), 555-581. <https://doi.org/10.19080/JOJPH.2017.02.555581>
- Nergiz, H., & Uluç, S. (2018). Çocuğunda görme yetersizliği olan anne ve babaların çeşitli psikolojik değişkenler açısından karşılaştırılması. *Özel Eğitim Dergisi*, 19(1), 79-103. <https://doi.org/10.21565/ozelegitimdergisi.311733>

- Sakkalou, E., Sakhi, H., O'Reilly, M.A., Salt, A. T., & Dale, N. J. (2018). Parenting stress, anxiety, and depression in mothers with visually impaired infants: A cross-sectional and longitudinal cohort analysis. *Developmental Medicine and Child Neurology*, 60, 290–298. <https://doi.org/10.1111/dmcn.13633>
- Sola-Carmona, J. J., López-Liria, R., Padilla-Góngora, D., Daza, M.T., & Sánchez-Alcoba, M.A. (2013). Anxiety, psychological well-being and self-esteem in Spanish families with blind children. A change in psychological adjustment? *Research in Developmental Disabilities*, 34(6), 1886-1890. <https://doi.org/10.1016/j.ridd.2013.03.002>
- Sola-Carmona, J. J., Lopez-Liria, R., Padilla-Góngora, D., Daza, M. T., & Aguilar-Parra, J.M. (2016a). Subjective psychological well-being in families with blind children: How can we improve it? *Frontiers in Psychology*, 7, 211-218. <https://doi.org/10.3389/fpsyg.2016.00487>
- Sola-Carmona, J. J., López-Liria, R., Padilla-Góngora, D., Daza, M. T., Aguilar-Parra, J. M., & Salido-Campos, M. A. (2016b). Factors associated with the anxiety, subjective psychological well-being and self-esteem of parents of blind children. *PLoS ONE*, 11(9), 1-15. <https://doi.org/10.1371/journal.pone.0162294>
- Stevellink, S. A., & Fear, N. T. (2016). Psychosocial impact of visual impairment and coping strategies in female ex-Service personnel. *Journal of the Royal Army Medical Corps*, 162(2), 129-133. <https://doi.org/10.1136/jramc-2015-000518>
- Tuzgöl-Dost, M. (2005). Öznel iyi oluş ölçeğinin geliştirilmesi: Geçerlik güvenirlik çalışması. *Türk Psikolojik Danışma ve Rehberlik Dergisi*, 3(23), 103–110.
- Ulusoy, M. (1993) *Beck Anksiyete Envanteri: Geçerlik ve güvenirlik çalışması*. (Unpublished master thesis). Bakırköy Ruh ve Sinir Hastalıkları Hastanesi, İstanbul.
- Van der A. A, H. P., Comijs, H. C., Penninx, B. W., Van Rens, G. H., & Van Nispen, R. M. (2015). Major depressive and anxiety disorders in visually impaired older adults. *Investigative Ophthalmology & Visual Science*, 56(2), 849-854. <https://doi.org/10.1167/iovs.14-15848>
- Vancampfort, D., De Hert, M., & Knape, J. (2011). State anxiety, psychological stress and positive well-being responses to yoga and aerobic exercise in people with schizophrenia: a pilot study. *Disability and Rehabilitation*, 33, 684–689. <https://doi.org/10.3109/09638288.2010.509458>
- Yıldırım, A., & Şimşek, H. (2006). *Sosyal bilimlerde nitel araştırma yöntemleri*. Ankara: Seçkin Yayıncılık.



## THE NEW NORMAL: POST COVID-19 IS ABOUT CHANGE AND SUSTAINABILITY

Ebba Ossiannilsson<sup>1\*</sup>

<sup>1</sup>Swedish Association for Distance Education (SADE), International Council for Open and Distance Education, (ICDE) OER Advocacy Committee [ebba.ossiannilsson@gmail.com](mailto:ebba.ossiannilsson@gmail.com)

\* Correspondence: [ebba.ossiannilsson@gmail.com](mailto:ebba.ossiannilsson@gmail.com); Tel.:+46-709-954-448

### Abstract

During the spring 2020 with the pandemic COVID -19, educational institutions around the world were suddenly closed while classes continued. In an age of digitalization and information technology, such emergencies are no excuse to stop continuous learning. It has been shown that the digital revolution affects people and their habits, behaviors, and attitudes when dealing with new technology. This conceptual article is based on the current discourse on the "new normal" after COVID -19, which will be about change, resilience, rethinking, reorientation and sustainability. A sustainable society requires access to successful strategies, agile and flexible leadership, digital platforms, partnerships and the ability to respond to rapid change, promote flexibility in learning and support our students. There are needs for preparing students and pupils for their futures, not our past. Based on these goals, we can prepare for the initiative UNESCO, Futures of Education - Learning to Become.

**Keywords:** COVID-19, ecosystem, futures of education, OER recommendation, new normal.

### Introduction

*We cannot return to the world as it was before*

During the COVID-19 pandemic in the spring of 2020, educational institutions around the world suddenly closed their doors, and their buildings, while education and learning continued. UNESCO recommended teaching to be continued; moreover, as of 16 March 2020, it would be online. In the time of digitalization and information technology, such emergencies are no excuse for halting continuous learning. UNESCO estimated that by 29 April 2020, 1.3 billion students were still affected by school and university closures despite the reopening of educational institutions around the world. Today, 90 percent of the students worldwide are studying remotely. UNESCO launched the overall #LearningNeverStops initiative of 9 April 2020 and established a web portal that includes resources for everyone involved in communication, interaction, socialization, and ethical and social issues. It may seem that "business is as usual." However, in the short period of the lock-down, both studying and working changed. Digitalization and the digital competence of both individuals and organizations increased dramatically. Although the educational sector has lagged behind, during the COVID-19 pandemic, it was forced to digitalize the educational process and move to distance and online learning. Now it is not possible to return to what was previously considered normal. It has become evident that the digital revolution concerns people and their habits, behaviors, and attitudes in using the new technology. Moreover, there is a need for innovative pedagogy and a move to syllabus 4.0. aligned with the fourth industrial revolution, which change the way we work, live, perform, communicate, and even the way we study and learn. Online education has become a strategic priority in every institution, and new and

innovative partnerships will become increasingly common (Bozkurt & Sharma, 2020; Ossiannilsson, 2020).

In the “new normal,” online education will continue to be a strategic priority at every institution. A sustainable society requires access to digital platforms and the ability to respond to rapid change, promote flexibility in learning, and help students to achieve both now and in the future by implementing the UNESCO initiative, *Futures of Education – Learning to Become* (UNESCO, 2019a). This conceptual article is based on the current discourse on the “new normal” after COVID-19, which will be characterized by change, resilience, agility, reorientation, and sustainability.

### **Method**

The article is based on a presentation by the author at the ICIER2020 conference on the topic of the new normal after the COVID-19 pandemic. Based on her own perspective, the author has provided examples of the ongoing debate on the “futures” of education. However, these examples do not always represent official perspectives. This article does not reflect a comprehensive review of the developments in both the field and across the globe.

### **Results**

#### **Post COVID-19**

The global health pandemic has cast a harsh light on the weaknesses and challenges facing humanity. It has presented a clear picture of social and educational inequalities and of the progress that is needed, particularly in education, which was heavily affected by school closures (Bozkurt et al., 2020; Bozkurt & Sharma, 2021; Ossiannilsson, 2020; Ossiannilsson & Sandström, 2020; Stracke et al, 2020).

Decisions made in the context of COVID-19 will have long-term consequences for the future of education. Policy makers, educators, and communities now must make high-risk decisions, which should be guided by shared principles and visions of a desirable collective future. The COVID-19 pandemic has revealed both weaknesses and the extraordinary potential of human resources. At this time, pragmatism and rapid action are mandatory; moreover, now more than ever, we cannot do without scientific knowledge. Nor can we work in the absence of principles. Decisions must be based on a humanist vision of education and development within a human rights framework (UNESCO, 2020).

In the post- COVID-19 world, the economic effects of the virus have been unequal and unfair. COVID-19 has had the potential to radically transform our world, but we must not sit back passively and only observe its effects. Now is the time for public deliberation and democratic accountability. Now is the time for intelligent, collective action (Bozkurt et al. 2020; Cheng, 2019; Huang et al., 2020; Ossiannilsson, 2020; UNESCO, 2020).

#### **Futures of Education**

In autumn 2019, a crucial milestone was achieved when almost 200 countries worldwide adopted the UNESCO Open Educational Resources (OER) recommendation, which was preceded by a series of declarations and initiatives on open education in the previous 20 years

when the concept of OER was first launched in 2002 (Ossiannilsson, 2020; Ossiannilsson et al.; UNESCO, 2019a UNESCO b). The Recommendation will contribute to the development of open and inclusive knowledge societies and the realization of the United Nation Sustainable Development Goals, in particular SDG4, which is aimed at inclusive and equitable quality education and the promotion of lifelong learning opportunities for all. The OER Recommendation also addresses other SDGs, including SDG 5 (gender equality), SDG 9 (industry, innovation and infrastructure), SDG 10 (reducing inequalities within and between countries), SDG 16 (peace, justice and strong institutions), and SDG 17 (partnerships for the goals). UNESCO's most recent definition of OER is included in the UNESCO OER Recommendation: "OER are learning, teaching and research materials in any format and medium that reside in the public domain or are under copyright that have been released under an open license, which permit no-cost access, re-use, re-purpose, adaptation and redistribution by others. The Recommendation goes beyond just resources and materials. They cover in particular five areas: (i) building the capacity of stakeholders to find, re-use, create, and share OER; (ii) develop a supportive policy; (iii) ensure inclusive and equitable access to quality OER; (iv) nurture the creation of sustainability business models for OER; (v) facilitate international cooperation.

The Recommendation supports the objectives of UNESCO's global initiative, Future of Education: Learning to Become, which is aimed at rethinking education and shaping the future. The International Commission on the Futures of Education was founded by UNESCO 2019 to rethink how knowledge and learning could shape the future of humanity and the planet. The initiative, which involves broad public and expert engagement, is aimed to stimulate a global debate on how knowledge, education, and learning could be rethought in the increasingly complex, uncertain, and precarious world.

Even though the Commission on the Futures of Education was inspired by the feeling that the world's uncertainty, complexity, and fragility were increasing rapidly, it could not predict that a global health pandemic would occur in just a few months, which would remind us that dramatic changes can occur more suddenly and unexpectedly than anyone expects. Based on the sense that the future is now and the realization that our response to the COVID-19 pandemic and its many disruptive effects will have significant effects in both the short- and long-term, this initiative has taken on a new necessity and urgency. The pandemic has brought many existing patterns and trends to the surface. On one hand, it has revealed many weaknesses and vulnerabilities, including increased inequalities, risks associated with the privatization of education, and our lack of preparation for the massive switch to digital and distance learning. On the other hand, some positive features have also become increasingly visible within our societies. It is obvious that the response included solidarity and strong resilience to challenges faced in many societies. Increased attention to the public good has been noted. Likewise, the ingenuity, commitment, and creativity of the many teachers, families, and students who have collaborated in building remarkable learning experiences.

The COVID-19 pandemic has endangered public education, increasing the risk of fragmentation and disintegration. Some have claimed that the current emergency and ad hoc measures in response to it should be transformed into permanent reforms. There is increased awareness about the multiple roles that schools play in addition to academic learning, such as the well-being, health, and nutrition of children and young people. This increased awareness and appreciation could serve as the basis for a new path for public education. The pandemic

has forced a massive shift away from learning and teaching in traditional environments that depend on physical interaction.

The 2030 Agenda for Sustainable Development contains many necessary signposts and guidelines. We cannot forgo guiding principles in areas where high-stakes decisions made today will have significant long-term consequences in the future. The UNESCO report by the International Commission on the Futures of Education presents nine recommendations for concrete actions that will advance education in navigating the COVID-19 crisis and its aftermath:

- Commit to strengthening education as a common good.
- Expand the definition of the right to education to address the importance of connectivity and access to knowledge and information.
- Value the teaching profession and teacher collaboration.
- Promote student, youth, and children’s participation and rights.
- Protect the social spaces provided by schools as we transform education.
- Make free and open-source technologies available to teachers and students.
- Ensure scientific literacy within the curriculum.
- Protect the domestic and international financing of public education.
- Advance global solidarity to end current levels of inequality.

**Figure 1**

*The nine key principles for the Futures of education (UNESCO, 2020)*



**The New Normal: Change and Sustainability**

UNESCO’s nine key principles serve to guide the way through the COVID-19 crisis and its aftermath, including the unprecedented disruption of economies, societies, and education systems. It is obvious that there is no return to the world as it was before. One of the strongest messages worldwide is that our common humanity requires global solidarity. The disruption caused by the pandemic has exacerbated inequalities both within and between countries. There are needs for urgent investment and structural changes to prevent short-

term setbacks from developing into major, long-lasting problems. There is a serious risk that because of the COVID-19 pandemic, several decades of progress.

### **Conclusions and Recommendations**

The COVID-19 pandemic has presented us with both challenges and responsibilities. It has shown us the extent to which our societies exploit power imbalances, and our global system exploits inequalities. There are calls for renewed commitments to international cooperation and multilateralism as well as a revitalized global solidarity characterized by empathy and the appreciation of our common humanity at its core. The ideas stated in UNESCO's Commission report on the Futures of Education invite governments, international organizations, civil societies, education professionals, learners, and stakeholders at all levels to debate, engage, and act.

In the renewal of education, human interactions and well-being must be a priority. In times of turbulence, the greatest danger is not turbulence; it is acting based on yesterday's logic (Drucker, n.d.). The global pandemic pushed us to assess and rethink current digital platforms for distance and lifelong learning. There is a need to adopt the pentagon theory of learning intelligences (Cheng, 2019), which includes social, technical, cultural, political, and economic intelligences. There is a need to build an ecosystem of learning. Technology, especially digital technology, which enables communication, collaboration and learning across distances, is a powerful tool. It is not a panacea but a source of innovation and expanded potential. To understand and adopt this new paradigm requires the smart use of digitalization, learning analytics, and artificial intelligence.

Global horizons, local concerns, and individual creativity must be considered in developing resilience and sustainability during and after the COVID-19 pandemic. The future belongs to those who can imagine, design, and execute it. There are needs for preparing students and pupils for their futures, not our past.

### **Acknowledgments**

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

### **References**

- Bozkurt, A., & Sharma, R. C. (2020). Education in normal, new normal, and next normal: Observations from the past, insights from the present and projections for the future. *Asian Journal of Distance Education*, 15(2), 1-10.
- Bozkurt, A., Jung, I., Xiao, J., Vladimirschi, V., Schuwer, R., Egorov, G., Mano, M., & Paskevicius, M. (2020). A global outlook to the interruption of education due to COVID-19 pandemic: Navigating in a time of uncertainty and crisis. *Asian Journal of Distance Education*, 15(1), 1–126.

- Cape Town Open Education Declaration. (2017). *Cape Town open education declaration: 10th Anniversary. Ten directions to move open education forward.*  
<https://www.capetowndeclaration.org/cpt10/>.
- Cheng, Y. C. (2019). *Paradigms shift in education: Towards the third wave of effectiveness.* New York. NY: Routledge.
- Huang, R., Liu, D., Tlili, A., Knyazeva, S., Chang, T. W., Zhang, X., Burgos, D., Jemni, M., Zhang, M., Zhuang, R., & Holotescu, C. (2020). *Guidance on open educational practices during school closures: Utilizing OER under COVID-19 pandemic in line with UNESCO OER recommendations.* Beijing: Smart Learning Institute of Beijing Normal University.
- Ossiannilsson, E. & Sandström, S. (2020). Det nya normala handlar om omställning och hållbarhet. (The new normal will deal with transformation and sustainability). *Universitetsläraren* (29 maj 2020).
- Ossiannilsson, E. (2019). OER and OEP for access, equity, equality, quality, inclusiveness, and empowering lifelong learning. *International Journal of Open Educational Resources*, 1(2), 27-38.
- Ossiannilsson, E. (2020). After COVID-19 some challenges for universities. In A. Tlili, D. Burgos & A. Tabacco (Eds.), *Education in a crisis context: COVID-19 as an opportunity for global learning.* Springer, LNET Series.
- Ossiannilsson, E. (2020). Reflection on 21st century competences, smart learning environments, and digitalization in education. *Near East University Online Journal of Education (NEUJE)*, 3(2), 87-93.
- Ossiannilsson, E. (2021). *OER open to ideas, open to the world.* Springer Brief. Manuscript in preparation.
- Ossiannilsson, E., & Bozkurt, A. (2020). The future of education in the global context: Sustainable distance education [special issue]. *Journal of Sustainability*, 1-10.
- Ossiannilsson, E., Zhang, X., Wetzler, J., Gusmão, C., Olcott, D. J., Aydin, C. H., & Harichandan, D. (2020). *From open educational resources to open educational practices: For resilient sustainable education.*  
<https://journals.openedition.org/dms/5393>.
- Stracke, C. M., Bozkurt, A., Conole, G., Nascimbeni, F., Ossiannilsson, E., Sharma, R. C., Burgos, D., Cangialosi, K., Fox, G., Mason, J., Nerantzi, C., Obiageli Agbu, J. F., Ramírez Montoya, M. S., Santos-Hermosa, G., Sgouropoulou, C., & Shon, J. G. (2020). Open education and open science for our global society during and after the COVID-19 outbreak. In *Proceedings of the Open Education Global Conference 2020.*
- UNESCO. (2019). *Futures of education.* <https://en.unesco.org/news/new-unesco-recommendation-will-promote-access-educational-resources-all>
- UNESCO. (2020). *Recommendation on Open educational resources (OER).* Ref: CL/4319.  
[http://portal.unesco.org/en/ev.php-URL\\_ID=49556&URL\\_DO=DO\\_TOPIC&URL\\_SECTION=201.html](http://portal.unesco.org/en/ev.php-URL_ID=49556&URL_DO=DO_TOPIC&URL_SECTION=201.html)



## EVALUATION OF THE IMPACT OF DISTANCE EDUCATION ON CHILDREN IN PRESCHOOL PERIOD: TEACHERS' OPINIONS

Şermin Kuset<sup>1</sup>, Kezban Özgem<sup>2</sup>, Emine Şaşmacıoğlu<sup>3</sup>, Şebnem Güldal Kan<sup>4\*</sup>

<sup>1,2</sup> Doctoral Student, Department of Preschool Education, Near East University, Nicosia, Via Mersin 10 Turkey. [serminkuset@gmail.com](mailto:serminkuset@gmail.com) , [kezbanozgem@gmail.com](mailto:kezbanozgem@gmail.com)

<sup>3</sup> Master Student, Department of Preschool Education, Near East University, Nicosia, Via Mersin 10 Turkey. [emine.sasmaci@gmail.com](mailto:emine.sasmaci@gmail.com)

<sup>4</sup> Assist. Prof. Dr., Department of Preschool Education, Near East University, Nicosia, Via Mersin 10 Turkey. [sebnem.guldal@neu.edu.tr](mailto:sebnem.guldal@neu.edu.tr)

\*Correspondence: [sebnem.guldal@neu.edu.tr](mailto:sebnem.guldal@neu.edu.tr); Tel.:+90 216 345 90 90

### Abstract

In this study; it is aimed to examine the effects of distance education on preschool children. In this study, a case study based on qualitative data made with semi-structured interview technique was conducted by the preschool teachers of children who went to the preschool institution to examine the effect of distance education on children, and analyzed by content analysis method. In the study conducted in the COVID-19 epidemic period in the 2019-2020 spring period, the teachers of the students going to public and private schools were interviewed from afar. When other results obtained from the study are analyzed, 35 preschool teachers participated in the study and the majority of the study consists of women between the ages of 30 and 35. The majority of the participants are undergraduate graduates, and it is stated that they work in a private school and are also teachers for 6 years or more. In addition, while it was stated that distance education is inefficient compared to face to face education, it was determined that the biggest problem in the distance education process was communication. It has been found that the greatest contribution of distance education in the pandemic process is that it ensures that children do not leave education.

**Keywords:** Education, preschool period, technology, distance education, preschool teacher.

### Introduction

Education is the most important tool of change. Education plays an important role in the development of the individual, by realizing their cultural values and starting their own development process (Kıvanç, 2008). Education is of great importance in the development of skills such as awareness, interpretation, learning, and knowing of the individual (Rudge, 2008). Nevertheless, the fact that the child is at the center of the research conducted with education has revealed that preschool education is important, but it has kept preschool education on the agenda and made researches (Lascarides & Hinitz, 2000; Krogh & Slentz, 2001).

Education is a process that starts from the womb and continues for life. There are critical periods that arise in this process. This period, which can be defined as 0-6 years or preschoolers, is considered to be very important in terms of development (Akyüz, 2004). It is observed that preschool education starts at 0-6 age including 0-3 age child care and 3-6 age nurseries (Karakparmak, 2008). Since the imagination open to children in this period is quite wide and full of energy, it is possible to organize the places where they will be educated by considering these characteristics of the children and increase their success (Özkubat, 2013). Although it is a very important period for the development of the child's social, emotional and creativity in preschool period, the developmental features gained by the individual in this period is a process that forms the basis of lifelong learning for the individual in the future (Sapasaglam, 2017).

In preschool education, it is very important for educators to know the developmental characteristics of children for effective education and training (Berk, 2013; Bredekamp, 2015; New, 2016). Knowing the developmental characteristics of the child in preschool period, it provides a guiding guide for educators, parents and children who work with children, to communicate well with children, and to plan education and training programs (Trawick-Smith, 2017).

Preschool education program aims to support the healthy development of children and to provide the necessary skills for the future harmoniously (Hirsh, 2004). The program should prevent the teachers from reaching the general goals of the education they apply with the children, what methods and activities the children will support, how to teach them, how to create the physical environment, how to support families in the education process and how to evaluate them in a concrete way (Dodge, 1995).

In this context, it is revealed that children in preschool education period, which is accepted as the beginning of the life of education, are curious and interested in technological products, colorful, moving pictures, animations, videos of technological products such as computers, tablets and phones such as discovering the curiosity, creativity, discovery and independence of children in this period contributing to a permanent and entertaining learning by removing them, at the same time, it provides their correct learning (Demirel, Seferoğlu & Yağcı, 2004; Uluser-İnan, 2003).

Today, technology is a very important factor in accessing information with the rapid development of technology and changes, the rapid increase of information and the change of mass media with which information is transmitted, and the environment in which information is produced and shared (Yılmaz & Özkan, 2013). For this reason, information and communication technologies in the field of education, creating new educational environments, providing new teaching methods, changing the relationship between traditional educator and child, this leads to an increase in the quality of education (Yazıcı, 2015). In many studies, the active use of technology in pre-school education affects children's learning positively and increases motivation (Çakıroğlu & Taşkın, 2016; Huffstetter, King, Onwuegbuzie, Schneider & Powell-Smith, 2010; Kocaman-Karoglu, 2016; Şahin, 2006; Wolgemuth, et al., 2011).

With the active use of technology, distance education started. In this context, distance education is a system in which teachers and students interact with each other by means of technological tools in order to provide education services to larger groups and to ensure equality in education (Yalın, 2001). The different ways of learning made the school not only a place of learning, but a common space that provides socialization and guidance, as well as inequalities in education, difficulties in learning activities, and most importantly, understanding the role of the school outside of education (Anderson, 2020). Although the distance education platform is a fairly foreign platform to teachers, studies are being

conducted on how to use the learning platform, how to help teachers in the implementation of online learning and how to be active, how to reach people who do not have a technological device at home and have no internet access (Atchoarena, 2020). According to Anderson 2020, “The pandemic forces educators, parents and students to think critically, solve problems, be creative, communicate, collaborate and be active”. In order to prevent the spread of the Coronavirus (covid-19) epidemic, millions of children, young people, adults cannot go to schools due to the obligation to take measures such as school closure, staying at home, stopping domestic and international departures, and this situation is equal for students in their further academic periods can cause great difficulties if they are trained (Giannini & Lewis, 2020).

In this context, due to the Covid-19 outbreak in the world, distance education has been started for the sustainability of education and training (Kayıhan & Tönük, 2011). It is observed that teachers, students, administrators and parents have great difficulties in order to ensure continuity of learning with the closure of schools (Chang & Satako, 2020). In addition, with the closure of schools, it forces innovations to keep the education system alive, and the whole world is shaped by new education systems and by finding new solutions to continue continuous education, the quality of learning largely depends on the level of digital access (Gilani, 2020). It is observed that studies related to the use of technology in preschool education are not related to distance education in preschool education.

For this purpose, descriptive content analysis will be carried out in the qualitative research method to examine the effect of distance education on preschool children through teacher views. For this purpose, answers to the following questions were sought:

1. What is the socio-demographic distribution of teachers?
2. What are teachers' thoughts on distance education?
3. What are the problems of distance education for teachers?
4. What is the contribution of distance education to the education of children according to the opinions of the teachers?

## **Method**

### **Research model**

This study was designed as a qualitative study to determine the effect of distance education on children with the opinions of teachers and to present them in detail, and the case study method was used. In the research, a holistic single case pattern, one of the case study patterns, was used. In holistic single state patterns, there is a situation where a single analysis can be perceived as holistic by itself. The holistic single state pattern exists in three situations: First, if there is a well-formulated theory in the middle, this pattern has been used to confirm or refute it. If the latter does not comply with the general standards, a holistic single state pattern can be used in an overly contradictory and unique case study. Finally, a holistic single-state pattern can be used in cases where no one has ever worked or reached (Yıldırım & Şimşek, 2013). The case study states that it provides the opportunity to draw in depth about the effect or relationship on the individual and society without interfering with an event (Saban & Ersoy, 2017).

### **Study group**

In this study, a path was followed for the easy accessibility of giving speed and practicality to the purposeful sampling situation. 35 teachers working in preschool education

institutions participated in the study. The overall work was composed of a female teacher. Demographic information about teachers is given in Table 1.

### **Data Collection Tool and Data Analysis**

This study was carried out by obtaining the necessary permissions from the Ministry of Education and Culture for the implementation of the semi-structured interview form prepared by the researchers, and it was created with a semi-structured questionnaire developed by the researchers. In a structured interview, questions are determined in advance and data is tried to be collected with these questions (Karasar, 1998). While preparing the interview form used in this study, in order to establish a more effective and efficient communication with the interviewed individuals; Care has been taken to ensure that the questions are as clear as possible, easy to understand, to provide explanation and to give detailed answers, and not to be multi-dimensional in order not to create an unnecessary burden of questions on the interviewed individual. In addition, care was taken to prepare alternative questions and some clues in case the individual did not understand the question (Yıldırım & Şimşek, 2013). The interview form prepared by the researchers was shown to three field experts. Semi-structured interview form of the experts were prepared by examining their writings. The statements in the interview form were prepared for distance education in pre-school education and consist of 8 questions. Due to the situation we were in during the pandemic period, the questions were prepared in Google form and the qualitative data obtained by the answers uploaded to Google Drive were written down by the researchers and prevented data loss and analyzed by content analysis method. During the interviews, the data saved in Google drive has been analyzed and the interview transcript has been created by numbering each dimension. With the interview transcript, the cassettes were given to an expert from the field and the wrong or missing sections were checked. After the interviews were made, the data obtained from the participants were analyzed and divided into meaningful sections, and these sections that constitute meaningful integrations in themselves were named and coded. After all the data was coded in this way, a code list was created and served as a key list in the examination and editing of this data. Then, coding keys and interview transcripts were read separately by the researchers, and necessary arrangements were made by discussing the issues of “consensus” and “disagreement”. The reliability formula suggested by Miles and Huberman (1994) was used to calculate the reliability of the research. As a result of the calculation, the reliability of the research was calculated as 92% for the first question and 100% for the second question and 96% for the average. Over 70% of the reliability calculations are considered reliable for research (Miles & Huberman, 1994). The result obtained here is considered reliable for research. Codes that show harmony in the coding made by the researchers were based on organizing the data according to the codes and themes in reaching the themes.

### **Data Analysis**

Descriptive analysis technique was used to analyze the data. The purpose of descriptive analysis is to put the raw data in a format that the reader can understand and use if they wish. The data obtained in the descriptive analysis are summarized and interpreted according to the previously determined themes. In this analysis, direct quotations are often included to reflect the views of individuals interviewed or observed (Altunışık et al., 2010; Yıldırım & Şimşek, 2014).

### Findings and Comments

The themes obtained from the opinions of the participants were tabulated together with their frequency distributions and interpreted. In this study, it was aimed to evaluate the effect of distance education on preschool children. For this purpose, the findings obtained from the opinions of preschool teachers are given in

**Table 1.**  
*Teacher's Socio-Demographic Distribution*

	N	%
<b>Teacher's Age</b>		
29 and Under	6	17.1
30-34	11	32.4
35-39	10	28.6
40-44	6	17.1
45-49	1	2.9
<b>Gender</b>		
Woman	34	91.1
Male	1	2.9
<b>Education Status</b>		
License	20	57.1
Master	11	31.4
Doctorate	4	11.4
<b>Professional Experience</b>		
5 years and under	4	11.4
6-10 years	11	31.4
Between 11-15 years	8	22.9
16 years and over	10	28.6
<b>Institution of Teaching</b>		
Special	27	77.1
State	8	22.9
<b>How Long Have You Been Working At The Institution You Are Teaching</b>		
2 years and under	4	11.4
3-5 years	7	20
6 years and over	24	68.6

Table 1. When it was examined, it was determined that 91.1% of the participants in the study were women, 28.8% were between the ages of 35-39, 57.1% were at the undergraduate education level. It was found that 31.4% of the participants had 6-10 years of experience in the profession, 77.1% of them worked as teachers in private schools and 68.6% of them worked as teachers in the same institution for over 6 years.

**Table 2.***Thoughts on Distance Education*

Themes	N	%
Efficient	11	31
Insufficient	13	37
Family supported	8	23
Extra effort	3	9

As seen in Table 2, 37% of the participants who participated in the research stated that distance education is inefficient compared to face to face education. However, 31% of the participants found that distance education was sufficient to prevent children from leaving school during the pandemic period. Findings obtained from teachers' opinions are given in Table 2.

T17: *“Participation is fine and I think it is beneficial for children.”*

T2: *“It should be supported with face to face education. There can be moments when it is insufficient.”*

T11: *“I don't think our children are educated as efficiently as real classrooms.”*

T14: *“It cannot be sufficiently efficient and interactive in young age groups, so we need family support.”*

T29: *“It is a very tiring process for teachers, more energy and research is needed to increase student motivation and participation.”*

**Table 3***The Problems of Distance Education in Terms of Teacher*

Themes	N	%
Low turnout	4	11
Material shortage	6	17
Student follow-up	8	23
Communication difficulties	12	34
No	5	14

As seen in Table 3, it was seen that 34% of the respondents experienced in the communication were the difficulties in communication with the answers given by the participants to the problems caused by distance education. Besides, the findings obtained are given in Table 3.

T7: *“We have difficulties regarding the participation of the students in the studies and their reluctance. Because we cannot see the student, we try to motivate the child by phone or video call.”*

T1: *“Before sending the activities to the children, attention is paid to the materials that may be at home. It is not possible to include every activity in the desired way.”*

T33: *“It takes a lot of working and preparation hours. This is very tiring for us.”*

T26: “The most important point is that the student did not understand the questions he made wrong, or did he read it because he was tired, or he could not write the places he left blank, or whether it was a problem with the computer or not. I'm thinking.”

T5: “The children do not have the necessary technological tools and equipment for distance education, so it is very difficult to reach the children with the smart phones of the parents.”

T13: “The internet's not working at the same speed every day causes lessons to be interrupted.”

T28: “As a mother, I have to constantly check the child, I have to follow the topics she does not understand in the lesson and find solutions. I think that children will not have any problems with the support of parents in the distance education process. As a teacher, I did not have any problems. ”

T23: “It does not cause any trouble.”

**Table 4**

*Contribution of Distance Education to the Education of Children*

Themes	N	%
Responsibility awareness	6	17
Academic learning	4	11
Not breaking with education	14	40
Self assessment skills	1	2
Ability to use technology	2	6
Time with family	5	14
No	4	11

As can be seen in Table 4, 40% of the participants who participated in the study were found to have the greatest contribution of distance education to children, and 17% of them believed that responsibility was settled in children in this process. In addition to all these, it has been concluded that 14% of the relations with the family are strengthened. Other findings are given in Table 4.

T2: “Since the responsibility is in the student, the sense of responsibility develops further.”

T19: “This is a learning. It has no contribution to the sensory and social process. Just an academic learning.

T13: “It helps them to stay away from education.”

T26: “I believe that they contribute to this process at least how much they can learn from not leaving the school and the lessons and learning from school habits, such as working, question solving, research, and project preparation.”

T5: “It contributes to children to develop their own autocontrols. Especially self-assessment skills are improving. ”

T24: “They learn to use technology in the productive field.”

T34: “They are developing in different fields, not in the academic field, they gain gains in social connection with the family, home and life.”

T4: “It does not contribute to the education of children.”

## Discussion and Conclusion

Distance Education is one of the education models that require expertise in the globalizing world process. It is becoming widespread all over the world without any limitation. At the same time, it is subject to scientific research in every field and provides many quantitative and qualitative data. While there is no difficulty in implementing by countries with developed technologies, the spread of distance education process in developing or less developed countries changes the effect of those countries on the development process of information technologies. Therefore, each country will take part in the distance education process in order to develop methods and methods that will meet their own needs. They will restructure their learning-oriented education policies by making the necessary cognitive preparations.

In this study, it is aimed to get the opinions regarding the evaluation of the teachers' views on the effect of distance education on preschool children. For this purpose, answers were sought for the socio-demographic characteristics of teachers, their thoughts on distance education, their difficulties, and their contribution to the education of children. Accordingly, the majority of the teachers participating in the study with their socio-demographic characteristics are women, the age range is between 35-39, they have completed their language education level, their experience in the profession is between 6-10 years, they teach at the private school and they work for 6 years as teachers in the same institution. results have been reached. In a similar study, in Demiray (2013), the positive and negative aspects of distance education for women were examined and the importance of distance education for women was emphasized. The majority of prospective teachers participating in our study are women.

The participants expressed their positive and negative thoughts on Distance Education. In addition, they expressed their thoughts on the fact that Distance Education had more communication problems than the Teacher Perspective. It was concluded that the contribution of distance education to the education of children is not to be disconnected from education. According to the results of these three sub-problems, the participants stated a negative statement about the fact that distance education is inefficient compared to face-to-face education. However, some of the participants found that distance education was sufficient to prevent children from leaving school during the pandemic period. When the relevant field article was examined, it was concluded that in-service training activities organized by the Ministry of National Education for teachers, in-service training activities specific to their branches, can be supported with face-to-face training in their research in Fingerless and Hot (2015). The ratio of teachers who think that the opinions of the teachers about the education center where the distance education activity is organized is positive but insufficient in terms of physical and technical equipment (heat, light, sound, ventilation) is higher than the other dimensions.

Based on the results obtained from this study, the following suggestions can be made;

1. The study is a qualitative study and the research data is limited to 35 teachers.

Based on the data obtained in this study, a wider questionnaire can be developed to reach all preschool teachers across Northern Cyprus. This study can be considered as a step for a research that can be studied with more pre-school teachers across the island.

2. It is seen that the teachers look more traditionally to the method of education. From this point of view, it should be given importance to use online training more frequently in any possible situation (epidemic, pandemic, etc.) by making necessary arrangements.

3. In the studies carried out, it was observed that the teachers had difficulties in using the technology or could not communicate. It is recommended that the trainings for the related service should be increased and oriented towards implementation.

4. It is suggested that a quantitative study on this study can also be done.

5. In this study, it is determined that teachers need support from families and family information meetings and trainings to improve families' ability to use technology in order to increase family awareness and to include more frequent activities with family participation and to develop families in technology and use them more efficiently.

## Acknowledgments

Acknowledgments should be inserted at the end of the paper, before the references, not as a footnote to the title. Use an unnumbered section heading for the Acknowledgments, similar to the References heading.

## References

- Altunışık, R., Coşkun, R., Bayraktaroğlu, S., & Yildirim, E. (2010). *Sosyal bilimlerde araştırma yöntemleri SPSS uygulamalı*. Sakarya: Sakarya Yayıncılık.
- Anderson, J. (2020). *Brave New World The coronavirus pandemic is reshaping education*. Retrieved from <https://qz.com/1826369/how-coronavirus-is-changing-education> on 21 August 2020.
- Atchoarena, D. (2020). *COVID-19: Learning cities on the front line*. Retrieved from <https://en.unesco.org/news/covid-19-learning-cities-front-line>. on 21 August 2020.
- Berk, L. E. (2013). *Bebekler ve çocuklar: Doğum öncesinden orta çocukluğa* (N. Işıkoğlu Erdoğan, Çev.) Ankara: Nobel Akademi Yayınevi.
- Chang, G. C., & Satako, Y. (2020). *How are countries addressing the Covid-19 challenges in education? A snapshot of policy measures*. Retrieved from <https://gemreportunesco.wordpress.com/2020/03/24/how-are-countries-addressing-the-covid-19-challenges-in-education-a-snapshot-of-policy-measures/>. on 01 August 2020.
- Çakıroğlu, Ü., & Taşkın, N. (2016). Teaching numbers to preschool students with interactive multimedia: An experimental study. *Çukurova University Faculty of Education Journal*, 45(1), 1-22.
- Demiray, E. (2013). Uzaktan eğitim ve kadın eğitiminde uzaktan eğitimin önemi. *Journal of Research in Education and Teaching*, 19, 155-168.
- Demirel, Ö., Seferoğlu, S. S., & Yağcı, E. (2004). *Öğretim teknolojileri ve materyal geliştirme*. Ankara: Pegem A Yayıncılık.
- Dodge, D. T. (1995). The Importance curriculum in achieving quality child day care programs. *Child Welfare*, 74, 1171-1185.
- Giannini, S. & Lewis, G.S. (2020). Three ways to plan for equity during the coronavirus school closures. Retrieved from <https://gemreportunesco.wordpress.com/2020/03/25/three-ways-to-plan-forequity-during-the-coronavirus-school-closures/> on 22 June 2020.

- Gilani, I. (2020). Coronavirus pandemic reshaping global education system?. Retrieved from <https://www.aa.com.tr/en/education/coronavirus-pandemic-reshaping-global-educationsystem/1771350> on 22 June 2020.
- Hirsh, R. A. (2004). *Early childhood curriculum: Incorporating multiple intelligences, developmentally appropriate practice, and play: Theory, planning, implication, assessment*. Prentice Hall.
- Karaküçük, S. A. (2008). Okul öncesi eğitim kurumlarında fiziksel/mekansal koşulların incelenmesi: Sivas ili örneği. *C.Ü. Sosyal Bilimler Dergisi*, 32(4), 307-320.
- Kayıhan, K. S. & Tönük, S. (2011). Sürdürülebilirlik bilincinin inşa edileceği binalar olma yönü ile temel eğitim okulları. *Politeknik Dergisi*, 2(14), 163-171.
- Kıvanç, E. (2008). *Köy enstitülerinde müzik eğitimi*, (Unpublished doctorate thesis). Ankara University Graduate School of Educational Sciences, Ankara.
- Lascarides, V. C., & Hinitz, B. (2000). *History of early childhood education*. New York: Falmer Press.
- Özkubat, S. (2013). Okul öncesi kurumlarında eğitim ortamlarının düzenlenmesi ve donanım. *Adnan Menderes Üniversitesi Eğitim Fakültesi Eğitim Bilimleri Dergisi*, 4(2), 58-66.
- Parmaksız, R., & Sıcak, A. (2015). Uzaktan hizmetiçi eğitime ilişkin öğretmen görüşleri. *Uşak Üniversitesi Sosyal Bilimler Dergisi*, 8(4), 187-212.
- Rudge, L. T. (2008). *Holistic education: An analysis of its pedagogical application* (Doctoral dissertation, The Ohio State University).
- Sapsaglam, Ö. (2017). Examining the value perceptions of preschool children according to their drawings and verbal expressions: Sample of responsibility value. *Eğitim ve Bilim*, 42(189), 287-303.
- Trawick-Smith, J. (2017). *Erken çocukluk döneminde gelişim* [Çok kültürlü bir bakış açısı]. (B. Akman, Çev. Ed.) Ankara: Nobel Akademik Yayıncılık.
- Yalın H. İ., (2001). *Öğretim teknolojileri ve materyal geliştirme*. Ankara: Nobel Yayın Dağıtım.
- Yazıcı, E. (2015). *Erken okuryazarlık ve bilgi, iletişim teknolojileri*, Temel, Z. F. (Ed.). Her Yönüyle Okul Öncesi Eğitim Dil ve Erken Okuryazarlık, (ss:215-242). Ankara: Hedef CS Basın Yayın.
- Yıldırım, A., & Şimşek, H. (2013). *Sosyal bilimlerde nitel araştırma yöntemleri*. (9. Genişletilmiş Baskı) Ankara: Seçkin Yayınevi.
- Yılmaz, Ö., & Özkan, B. (2013). Bilgisayar ve öğretim teknolojileri ve okul öncesi öğretmen adaylarının medya okuryazarlık düzeylerinin karşılaştırılması. *Electronic Journal of Vocational Colleges*, 178-183.
- Saban, A. & Ersoy, A. (2017). *Eğitimde nitel araştırma desenleri*. Ankara: Anı Yayıncılık.



## EXAMINATION OF GRADUATE THESES CONDUCTED ON PRE-SCHOOL INCLUSION BETWEEN 2016-2020 IN TURKEY

Mahide Özçelik<sup>1</sup>, Mukaddes Sakallı Demirok<sup>2\*</sup>

<sup>1</sup> Graduate student, Near East University, Department of Special Education, [mahideozcelik@hotmail.com](mailto:mahideozcelik@hotmail.com)

<sup>2</sup> Assoc. Dr., Near East University, Department of Special Education, [mukaddes.sakalli@neu.edu.tr](mailto:mukaddes.sakalli@neu.edu.tr)

\*Correspondence: [mahideozcelik@hotmail.com](mailto:mahideozcelik@hotmail.com); Tel.:+90 3924440938

### Abstract

The aim of this study is to examine the current research trends in graduate theses on preschool inclusion in Turkey. Document analysis technique, one of the qualitative research methods, was used in the research. It was carried out on 31 graduate theses, which were obtained as a result of scanning the thesis archive of the Higher Education Council (YÖK) and were open to access between 2016 to 2020. The search was carried out by typing "pre-school integration" into the search engine of the Higher Education Institution's thesis archive. The theses included in the study were analyzed using the thesis analysis form prepared beforehand by the researchers. In the prepared form, the theses were analyzed according to the year, thesis level, university, institute, department, thesis supervisor title, research model, number of participants, data collection tool, data analysis method, and domestic and foreign references. The findings obtained within the framework of the examination were interpreted with percentage and frequency tables, and recommendations were made for future research.

**Keywords:** Mainstreaming, preschool, thesis, document analysis.

### Introduction

Like normally developing children, children with special needs also have the right to education in the least restrictive environments, based on the principle of enjoying equal opportunities in pre-school education (Yılmaz & Karasu, 2018). According to the Specialty Services Regulations Turkey (2009), pre-school education for individuals who need special education is compulsory between 37-72 months. However, taking into account the development and individual characteristics of individuals, the duration of the pre-school education period can be extended for one more year. As a result of the report prepared by the Special Education Evaluation Board established in the Guidance and Research Centers of Pre-School Education Institutions Regulation (2009), 36-72-month-old children who are deemed appropriate to be placed in pre-school education institutions are enrolled in classes with 10 children from two and not more than one in classes with 20 children, provided that they do not have severe disabilities, severe mental disabilities and multiple disabilities. As can be seen, pre-school mainstreaming practices envisage ensuring that children who need special education are systematically prepared, implemented and evaluated by taking part in educational services and participate in the society they live in independently (Eripek, 2005; Acarlar, 2019). In addition, it was determined that children with similar disability

characteristics acquired communication, social and academic skills later in differentiated educational environments compared to their peers in inclusive environments (Hunt, Farron-Davis, Beckstead, Curtis & Goetz, 1994). The organization of educational activities in normal classrooms for students with special needs all day in the general education school includes the educational activities that they continue in full-time inclusive environments (Altun, 2016). These students receive special education services in the support room for the areas or skills they need additional support, and the educational activities they continue in part-time inclusive environments.

Preschool teachers make necessary instructional and environmental adaptations in their classrooms in line with the characteristics and needs of inclusive students. The active participation of children with special needs in learning processes in inclusive environments depends on the determination and implementation of methods and techniques suitable for their individual characteristics in education programs, but it is also important to develop materials to be used (Kargin, 2019). Environmental adaptations require the reduction of materials used in teaching and activities, physical characteristics of the classroom and stimuli (Cooper & Speece, 1990), and enable students with special needs to develop social, academic and communication skills together with their peers. When considered in terms of peers in pre-school inclusive environments, it is thought that their skills to interact with individuals with special needs more easily, cooperate and problem-solving skills will develop positively in the future since these children encounter individuals with special needs at an early age (Metin, 2012; Kırcaali-İftar, 1998).

When we look at the literature, we come across many studies on inclusion and pre-school. Each study focuses on the problems that contain different sample groups related to the subject. In the study of Sönmez, Alptekin and Bıçak (2018), different results were obtained after the analysis of quantitative and qualitative data in the study of preschool teachers' perceptions of self-efficacy and in-service training requirements in inclusive education with mixed method. In the quantitative dimension of the study, it was concluded that teachers found themselves competent in mainstreaming education, and in the qualitative dimension, teachers found themselves insufficient in mainstreaming education, and they needed in-service support. In his compilation study, Rakap (2017) mentioned the importance of teachers' making necessary adaptations to children with special needs, determining and implementing effective natural teaching approaches in inclusive education practices in the preschool period, and discussed the most used natural teaching approaches in detail. In the studies conducted by Sucuoğlu and Bakkaloğlu (2016) in order to examine the relationships of parents with special needs and normal development with teachers, it was determined that the quality of the relationships between parents and teachers did not differ between parents with and without special needs, as a result of the data collection tool collected with a scale in the quantitative method. Katz's study (2014), which is one of the studies emphasizing the importance of peer relationships in inclusive classrooms, found that the social skills intervention program given by their peers to children attending kindergarten with autism spectrum disorder was effective.

Postgraduate thesis studies on pre-school inclusion are important in terms of revealing different problem situations and revealing the current situation in terms of guiding future studies. In this direction, the aim of this research is to review the postgraduate thesis studies carried out in the last five years in terms of determined categories.

## Method

### Research Model

Document analysis model, one of the qualitative research methods, was used in this study, which was conducted to examine postgraduate theses on preschool inclusion in Turkey. The document review model is aimed at collecting data about the phenomenon and analyzing written sources about the information obtained (Yıldırım & Şimşek, 2008). The analysis process provides interpretation, gaining understanding and developing experimental knowledge in the light of the acquired information (Bowen, 2009).

### Target Population and Sampling

Graduate thesis on pre-school inclusion in Turkey constitutes the universe of the research. Especially in recent years, in order to determine and interpret the development in the literature on this subject, it is limited to 31 graduate theses that are open to access between 2016-2020.

### Data Collection Tools

In this study, 31 graduate thesis studies scanned in the Higher Education Institution thesis center were processed into the thesis analysis form. The titles of the thesis analysis form consisting of 13 items are as follows: The year in which the thesis was conducted, the thesis degree, the department where the thesis was conducted, the institute and the university to which it was affiliated, the thesis supervisor title, the research method of the thesis, the characteristics and number of participants, the data collection tool of the thesis, the data analysis method and number of domestic and foreign references.

In this study, data collection was conducted by writing "tez.yok.gov.tr/National Thesis Center" in the search engine on the internet. Searching for postgraduate theses on pre-school inclusion was selected as the years 2016-2020 from the advanced screening option. Approval was given for the permission status, and only "mainstreaming" and "preschool" were written in the words to be searched. The words to be searched section, especially "mainstreaming" and "pre-school", were written because it aims to research the contents of the thesis in a wide area. Thesis studies that were scanned from the advanced screening option were eliminated according to their subject titles and 31 thesis studies were reached. The data obtained through the document analysis method were analyzed by processing in the SPSS program, percentage and frequency calculations were made, and displayed and interpreted in tables and figures.

## Findings

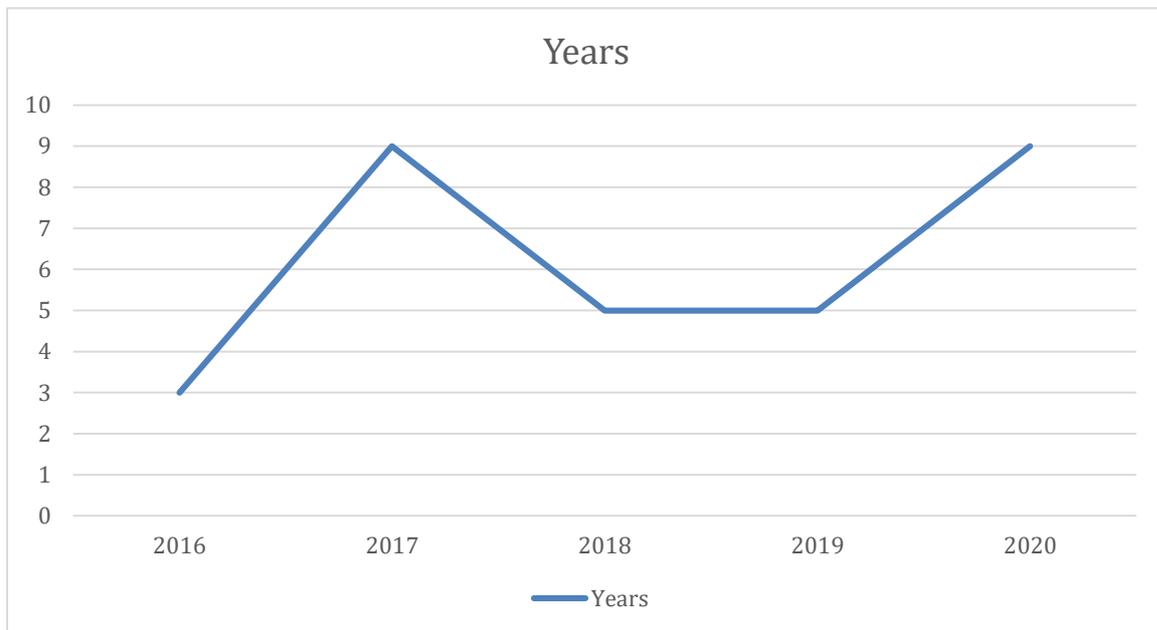
### Distribution of Graduate Theses on Pre-School Inclusion Education by Years between 2016-2020 in Turkey

In Figure 1, the distribution of postgraduate theses on pre-school inclusion by years is shown for the last 5 years in Turkey. When Figure 1 is examined, it is concluded that 3 theses were made in 2016, 9 theses were made in 2017, 5 theses were made in 2018, 5 theses were made in 2019 and 9 theses were made in 2020. According to these findings, the number of studies on inclusion and pre-school seems to be a fluctuating picture over the

years. In addition, it is seen that most of the theses (9 theses) were conducted in 2017 and 2020.

**Figure 1.**

*Distribution of theses by years*



### **Distribution of Postgraduate Theses on Pre-School Inclusion Education by Thesis Level**

When the findings on the distribution of postgraduate theses on preschool inclusion in Turkey according to their levels are examined, it was seen that most thesis was written at master's level ( $f = 24$ , 77.4%). In addition, 7 doctoral dissertations (22.6%) were made on special learning difficulties.

**Table 1.**

*Distribution of theses according to their levels*

Thesis level	$f$	%
Master's	24	77.4
Doctorate	7	22.6
<b>Total</b>	<b>31</b>	<b>100</b>

### **Distribution of Postgraduate Theses on Pre-School Inclusion Education**

#### **According to Universities**

The findings obtained from the research showed that the postgraduate theses on inclusive preschool education in Turkey in the last 5 years were carried out in 18 different universities. 18 universities with thesis number are shared in Table 2. According to the findings, most postgraduate thesis was carried out in Gazi University ( $f = 5$ , 16.3%). It is seen that Ankara, Trakya University ( $f = 4$ , 12.9%), Eskişehir Anadolu University ( $f = 3$ , 9.7%) and Çukurova University ( $f = 2$ , 6.5%) followed this rate. In the remaining 13

universities, 1 thesis has been conducted on inclusive education and pre-school studies at each university.

**Table 2.**

*Distribution of theses by universities*

University	<i>f</i>	%
Gazi University	5	16.3
Ankara University	4	12.9
Trakya University	4	12.9
Eskişehir Anadolu University	3	9.7
Çukurova University	2	6.5
Marmara University	1	3.2
İstanbul University	1	3.2
Hacettepe University	1	3.2
Yeditepe University	1	3.2
Pamukkale University	1	3.2
FSM Foundation University	1	3.2
Yıldız Technical University	1	3.2
Balıkesir University	1	3.2
Çanakkale Onsekiz Mart University	1	3.2
Akdeniz University	1	3.2
Toros University	1	3.2
Kırklareli University	1	3.2
Hacettepe University	1	3.2
<b>Total</b>	<b>31</b>	<b>100</b>

### **Distribution of Graduate Theses Conducted on Pre-School Inclusion Education According to Institutes**

Examining the findings regarding the distribution of postgraduate theses on pre-school inclusive education in Turkey by institutes in the last 5 years, it was seen that the institute with the most thesis written was the Institute of Educational Sciences ( $f = 18, 58.2\%$ ) according to Table 3. In addition, the number of theses in the Institute of Social Sciences is 10 (32.2%). It was concluded that the number of theses belonging to the Institute of Health Sciences, the Institute of Education Management and the Institute of Education is 1 (3.2%).

**Table 3.**

*Distribution of theses by institutes*

Institute	<i>f</i>	%
Institute of Education Sciences	18	58.2
Social Sciences Institute	10	32.2
Health Sciences Institute	1	3.2
Education Management Institute	1	3.2
	1	3.2
<b>Total</b>	<b>31</b>	<b>100</b>

### Distribution of Postgraduate Theses on Pre-School Inclusion Education by Departments

The findings obtained from the research showed that the theses were carried out in 10 different departments. When Table 4 is examined, most of the postgraduate theses on pre-school inclusion are found in special education ( $f = 9$ , 29.1%), basic education ( $f = 7$ , 22.6%), disability studies department ( $f = 4$ , 12.9%), preschool education ( $f = 3$ , 9.7%), child development and education, and educational management departments ( $f = 2$ , 6.5%).

**Table 4.**  
*Distribution of theses according to departments*

Department	<i>f</i>	%
Special education	9	29.1
Basic education	7	22.6
Disability Studies	4	12.9
Pre-school education	3	9.7
Child Development and Education Management	2	6.5
Primary Education Department	2	6.5
Mentally Handicapped Training	1	3.2
Education Programs	1	3.2
Psychology	1	3.2
<b>Total</b>	<b>31</b>	<b>100</b>

### Distribution of Graduate Theses Conducted on Pre-School Inclusion Education by Advisor Titles

According to Table 5, when the titles of the advisors of the graduate theses on pre-school inclusive education in Turkey in the last 5 years are examined, it was determined that 11 people were associate professors (35.5%), 8 people were professor Doctors (25.7%), 6 people were assistant professors (19.4), and 6 people were doctor faculty members (19.4). Accordingly, it can be said that the theses are managed by the thesis advisors with the title of Associate Professor at most.

**Table 5.**  
*Distribution of theses by advisor titles*

Advisor title	<i>f</i>	%
Prof. Dr.	8	25.7
Assoc. Dr.	11	35.5
Asst. Assoc. Dr.	6	19.4
Dr. Faculty Member	6	19.4
<b>Total</b>	<b>31</b>	<b>100</b>

### Distribution of Graduate Theses Conducted on Pre-School Inclusive Education According to Research Methods

When the findings on the distribution of methods used in the postgraduate theses on pre-school inclusive education were examined, it was seen that a total of 3 different research

methods were used in the theses. According to Table 6, quantitative research method was used in 20 of 31 theses examined (64.5%), qualitative research method (22.6%) was used in 7 of the theses, and mixed research method (12.9%) was used in 4 of the theses.

**Table 6.**

*Distribution of theses according to research methods*

<b>Research model</b>	<b><i>f</i></b>	<b>%</b>
Quantitative research	20	64.5
Qualitative research	7	22.6
Mixed research	4	12.9
<b>Total</b>	<b>31</b>	<b>100</b>

### **Distribution of Postgraduate Theses Conducted on Preschool Inclusive Education by Participant Characteristics**

According to Table 7, the distribution of the participant group in 31 graduate theses examined within the scope of the research is as follows: Preschool teachers ( $f = 8$ , 25.7%), students with special needs and their teachers ( $f=5$ , 16.3%), Students with special needs and no special needs, and mainstreaming students with special needs ( $f=4$ , 12.9%), parents and teachers of students with special needs, pre-school teacher candidates, children with special needs, teachers, auxiliary staff ( $f=3$ , 9.7%), students with special needs studying in recovery rooms ( $f=1$ , 3.2).

**Table 7.**

*Distribution of theses according to the participants*

<b>Participants</b>	<b><i>f</i></b>	<b>%</b>
Preschool teachers	8	25.7
Students with special needs and their teachers	5	16.3
Students with and without special needs	4	12.9
Mainstreaming students with special needs	4	12.9
Parents and teachers of students with special needs	3	9.7
Preschool teacher candidates	3	9.7
Children with special needs, teachers, auxiliary staff	3	9.7
Students with special needs studying in recovery rooms	1	3.2
<b>Total</b>	<b>31</b>	<b>100</b>

### **Distribution of Graduate Theses Conducted on Pre-School Inclusive Education by Number of Participants**

According to Table 8, the number of samples applied in 31 graduate theses on pre-school inclusive education in Turkey is between 1 and 100, with a maximum of 70.9%. The minimum number of samples in which the thesis was conducted is between 401 and 500 ( $f = 1$ , 3.2%). This finding shows us that the studies were generally carried out with sample groups of 1 to 200 people.

**Table 8.***Distribution of theses according to the number of participants*

<b>Number of participants</b>	<b><i>f</i></b>	<b>%</b>
1-100	21	70.9
101-200	4	12.9
201-300	2	6.5
301-400	3	9.7
401-500	1	3.2
<b>Total</b>	<b>31</b>	<b>100</b>

### **Distribution of Postgraduate Theses Conducted on Pre-School Inclusive Education According to the Use of Local Bibliography**

According to Table 9, the number of domestic references used in 31 graduate theses on pre-school inclusive education in Turkey is between 51-100 at most ( $f = 15$ , 48.1%). This rate is followed by the use of domestic references at a rate of 101-150 ( $f = 7$ , 22.6%).

**Table 9.***Distribution of theses according to the number of domestic reference usage*

<b>Number of domestic resources</b>	<b><i>f</i></b>	<b>%</b>
1-50	5	16.3
51-100	15	48.1
101-150	7	22.6
151-200	2	6.5
201-250	2	6.5
<b>Total</b>	<b>31</b>	<b>100</b>

### **Distribution of Postgraduate Theses Conducted on Pre-School Inclusive Education by Foreign Reference Use**

According to Table 10, the number of foreign references used in 31 graduate theses on pre-school inclusive education in Turkey can be seen between 1-50 with a maximum of 37.9%. In addition, it is seen that foreign resources are not used in two graduate theses.

**Table 10.***Distribution of theses according to the number of foreign references*

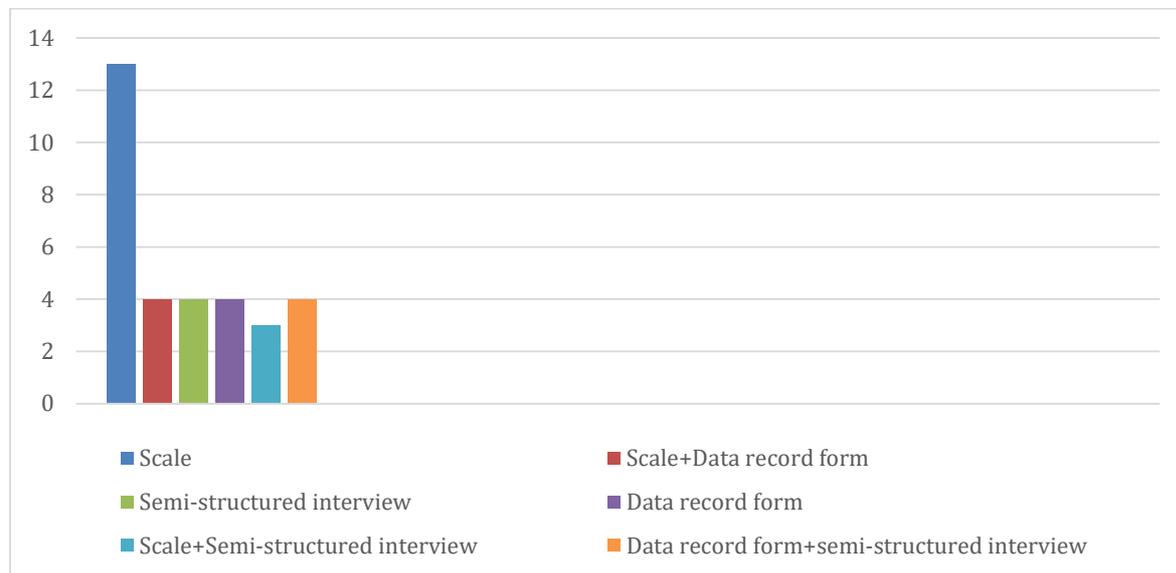
<b>Number of foreign resources</b>	<b><i>f</i></b>	<b>%</b>
0	2	0
1-50	11	37.9
51-100	8	27.6
101-150	4	13.8
151-200	2	6.9
201-250	2	6.9
251-350	2	6.9
<b>Total</b>	<b>31</b>	<b>100</b>

### Distribution of Postgraduate Theses Concerning Pre-School Inclusive Education According to Data Collection Tools

According to Figure 2, it was determined that the most used data collection tool in 31 graduate theses on pre-school inclusive education was the scale. The scale is followed by semi-structured interview form, data record form, scale and data record form and semi-structured interview form. It is seen that the least used data collection tool is the combination of the scale and the semi-structured interview form. Based on these findings, it was determined that quantitative and qualitative data collection tools were not used much together, instead either only quantitative or only qualitative data collection tools were used more.

**Figure 2.**

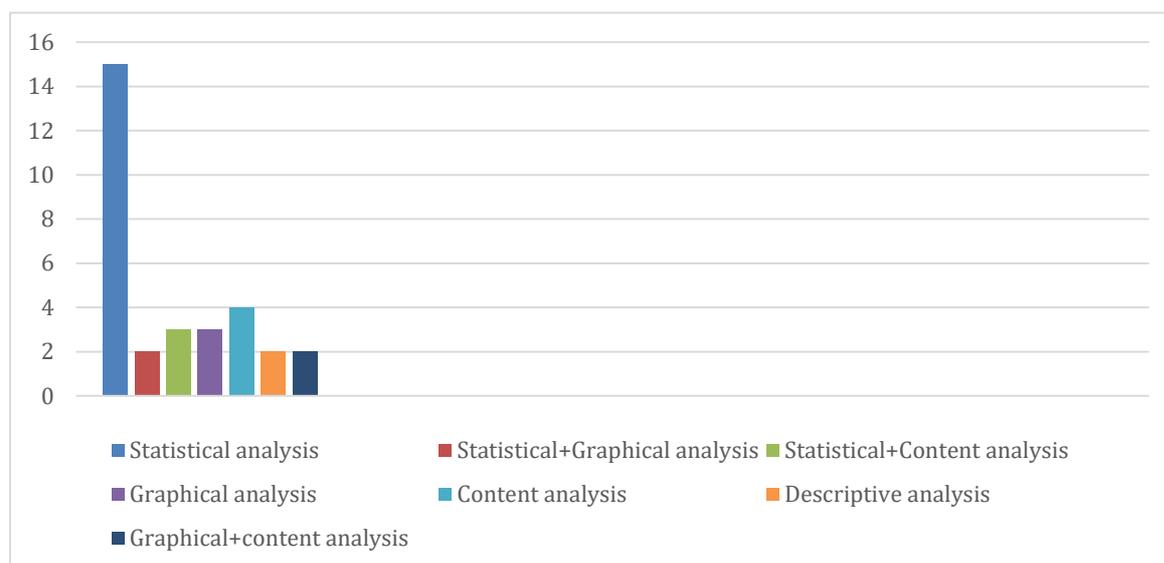
*Distribution of theses according to data collection tools*



### Distribution of Postgraduate Theses Conducted on Preschool Mainstreaming According to Data Analysis Methods

When the findings regarding the distribution of data analysis methods of graduate theses on preschool mainstreaming in Turkey according to Figure 3 are examined, it was concluded that the most used data analysis method in theses is statistical analysis methods and this finding is followed by content analysis, statistical analysis and content analysis, graphical analysis, statistical analysis and graphical analysis, descriptive analysis, graphical and content analysis methods.

**Figure 3.**  
*Distribution of theses according to data analysis methods*



### Discussion and Conclusion

This research was carried out to examine the postgraduate theses on pre-school inclusion between 2016 and 2020 in Turkey. Conclusions reached based on the findings obtained in line with this purpose and recommendations were made for these results.

When the distribution of postgraduate theses on pre-school inclusion is examined, it is seen that the most number of theses were conducted in 2017 and 2019, and the least number of theses were conducted in 2016. The number of studies on the subject has varied in recent years.

When the distribution of postgraduate theses on pre-school inclusion by thesis level is examined, it is seen that the number of master thesis studies is much higher than the number of doctoral thesis studies. It is thought that more studies to be carried out at the doctoral level will be important in developing original research and solution proposals on the subject.

When the distribution of postgraduate theses on pre-school inclusion according to universities is examined, it is seen that the thesis studies are mostly conducted in Gazi University. Again, it is seen that there are more thesis studies conducted in state universities on the subject compared to private universities. Relevant studies can be encouraged at private universities.

When the distribution of postgraduate theses on pre-school inclusion according to institutes is examined, it is determined that most of the thesis studies were conducted in the special education department of educational sciences and secondly in the pre-school department of the social sciences institute. The fact that the theses made in the field of special education make a significant difference from the studies in the pre-school field reflects that the cooperation between the two departments is not sufficient. It is thought that the studies conducted by educational sciences institutes on pre-school inclusion in the special education department and the future studies of the pre-school department on this subject will ensure that teachers' knowledge, skills and attitudes about pre-school inclusion

will increase positively with the increase in in-service training of teachers after their undergraduate education. (Avramidis, Bayliss & Burden, 2000; Kayılı et al., 2010)

When the distribution of postgraduate theses on preschool inclusion by research method is examined, it is seen that quantitative research method is used more. With the increase in the selection of qualitative research and mixed methods, the realization of perceptions and events in the natural environment in a realistic and holistic manner will enable the effectiveness and results of the research process to be revealed more effectively. It was stated that the most studied subject was related to teachers' opinions, attitudes, and knowledge due to the fact that the use of quantitative methods was more in the document analysis research of the studies conducted in the preschool period between 1992-2013 by Metin (2016). According to this result, the most preference reached in the study supports the findings of the research method and participant characteristics.

When the distribution of graduate theses on pre-school inclusion according to the participants is examined, it is seen that there are fewer studies that focus on preschool teachers and the students with special needs. In addition, based on the principle of cooperating in inclusive environments, it has been determined that the studies conducted with family and school administrators and staff are much less. The sample group of the theses is mostly 1-100 participants. Increasing the sample size of the studies may eliminate the limitations of the study and allow us to reach a reliable result. In the graduate theses (Altunışık, Coşkun, Bayraktaroğlu & Yıldırım, 2012) that fit the content of this study, where non-experimental quantitative research methods are used excessively, it is argued that sample sizes between 30 and 500 are sufficient for most research. Bakkaloğlu and others (2018) stated in their research they conducted with document analysis that the majority of research participants were teachers and teacher candidates.

The maximum number of domestic references used in 31 graduate theses on pre-school inclusion in Turkey is 51-100, and the number of foreign references is between 1-50. The sources used together with the referenced current sources can be considered sufficient within the scope of the subject of the study.

The distribution of postgraduate theses on pre-school inclusion according to data collection tools is mostly scale-test or information form or survey application. Increasing other data collection tools such as observation and interview, or the use of data collection tools in which quantitative and qualitative research methods are used together can be increased.

When the findings on the distribution of data analysis methods of postgraduate theses on mainstreaming in preschool in Turkey are examined, it is concluded that the most used data analysis method in theses is statistical analysis methods and this finding is followed by content analysis, statistical analysis and content analysis, graphical analysis, statistical analysis and graphical analysis, descriptive analysis, graphical and content analysis methods.

## References

- Acarlar, F., (2019). *Okul Öncesinde Kaynaştırma*. Sucuoğlu B., Bakkaloğlu, H., (Eds.), Kaynaştırma modeli ve özel gereksinimli çocukların özellikleri (s.21-45). Kök Yayıncılık.

- Altunışık R., Coşkun R., Bayraktaroğlu S., & Yıldırım E., (2012). *Sosyal Bilimlerde Araştırma Yöntemleri*. Sakarya Yayıncılık.
- Altun, T. (Ed.) (2016). *Kaynaştırma sınıfı etkili farklılaştırılmış öğretim için stratejiler*. Nobel Publishing.
- Avramidis, E., Bayliss, P., & Burden, R. (2000). A survey into mainstream teachers' attitudes towards the inclusion of children with special educational needs in the ordinary school in one local education authority. *Educational Psychology, 20*(2), 191-211
- Cooper, D.H., & Speece, D.L. (1990). Maintaining at-risk children in regular education setting: Initial effects of individual differences and classroom environments. *Exceptional Children, 57*(2), 117-126
- Eripek, S. (Ed.) (2005). *Özel Eğitim. Okulöncesi Öğretmenliği Lisans Programı Ders Kitabı*. Anadolu University Open Education Faculty Publication No: 756.
- Hunt, P., Farron-Davis, F., Beckstead, S., Curtis, D., & Goetz, L. (1994). Evaluating the effects of placement of students with severe disabilities in general education versus special classes. *Journal of the Association for Person with Severe Handicaps, 19*(3), 200-214.
- Kargın T. (2019). *Okul Öncesinde Öğretimin Bireyselleştirilmesi ve Öğretimsel Uyarlamalar. Okul Öncesinde Kaynaştırma*. Bülbin Sucuoğlu B., Bakkaloğlu H., (Eds.). Kök Yayıncılık
- Katz, R. E. (2014). *Promoting Interactions in Preschoolers with Autism Spectrum Disorder via Peer-Mediated Intervention*. University of Toronto, Doctor of Philosophy Department of Speech-Language Pathology.
- Kayılı, G., Koçyiğit, S., Yıldırım Doğru, S. S., & Çiftci, S., (2010). Kaynaştırma eğitimi dersinin okulöncesi öğretmeni adaylarının kaynaştırmaya ilişkin görüşlerine etkisi. *Mehmet Akif Ersoy University Journal of Education Faculty, 10*(20), 48-65.
- Kırcaali-İftar, G. (1992). Özel eğitimde kaynaştırma. *Eğitim ve Bilim, 16*(86), 45-50.
- Rakap, S. (2017). Okul Öncesi dönemde kaynaştırma eğitimi uygulamalarının desteklenmesinde doğal öğretim yaklaşımları. *Ankara University Faculty of Educational Sciences Special Education Journal, 18*(3), 471-492
- Sönmez, N., Alptekin, S., & Bıçak, B. (2018). Okul öncesi eğitim öğretmenlerinin kaynaştırma eğitiminde öz-yeterlik algıları ve hizmetiçi eğitim gereksinimleri: Bir karma yöntem çalışması. *Abant İzzet Baysal University Journal of Education Faculty, 18*(4), 2270-2297.
- Yılmaz, B., & Karasu, N. (2018). Okul öncesi kaynaştırmada kalite: Kapsam ve değerlendirme. *Ankara University Faculty of Educational Sciences Special Education Journal, 19*(1), 181-198.



## REFLECTIONS OF CREATIVITY IN THE 21ST CENTURY CLASSROOM

Mutlu Soykurt <sup>1\*</sup>

<sup>1</sup>University of Kyrenia, [mutlu.soykurt@kyrenia.edu.tr](mailto:mutlu.soykurt@kyrenia.edu.tr)

\*Correspondence: [mutlu976@gmail.com](mailto:mutlu976@gmail.com) ; Tel.: +90 392 650 4025

### Abstract

Creativity has long been on the agenda of those innovative and inspirational teachers who have devoted themselves to doing their jobs more effectively. 21<sup>st</sup> century teachers are required to fit their skills, abilities and thinking skills into the latest improvements and changes in effective learning pedagogies and look for ways not only to make necessary adaptations in their curriculum, but also go beyond to stimulate learners to develop certain thinking skills to learn. Drawing on an action research, this study focuses on innovative teaching strategies and some out-of-the-box ideas about the way teachers should convert their ideas to be effective in class to shed a new light on effective teaching. With this aim in mind, the study concentrated on investigating the effect of the creativity on the overall success of the 40 intermediate level students learning English. The study conducted employed a quasi-experimental research design. The researcher designed various creative activities and techniques on the basis of three models: The Simplex Process Model (Basadur, 1995), CATWOE (Checkland, 1960) and the Reframing Matrix Tool (Morgan, 1993). These activities were then applied them in her English language classes. As a result of the activities and techniques implemented in foreign language classes, it was noted that there are certain advantages to using creative activities in EFL classes. These include: (i) developing students' divergent thinking skills, memory power, brain processing speed, critical thinking skills, communication skills, interpersonal skills through facilitating active participation and student engagement, insights and conflict resolution; (ii) improving students' concentration through mindfulness and nasal breathing practice; (iii) encouraging an atmosphere of openness; (iv) involving direct and experiential learning; (v) promoting lifelong learning. Development of such knowledge and skills through creative activities based on theoretical models fosters 21<sup>st</sup> century skills which are crucial for the learners in today's world.

**Keywords:** Creativity, 21st century learners, reflections, innovative teaching activities.

### Introduction

The growing need for designing current and up-to-date activities and materials is impossible to ignore in any given field of education. Globalization and constantly changing nature of information led to the need for learners of all levels to access the most up-to-date information in the most rapid way possible. The conditions of 21<sup>st</sup> century and globalizations changed the profile of learners as well as the knowledge and skills they need to be taught. In parallel to these changes, teachers need to continuously improve their teaching skills as well as the techniques and activities they use. Creative activities ensure learners' active

participation and keep their interest alive through the lessons. In the history of English language teaching methodologies, post-method era proved that there is no single best method and an eclectic approach with creative activities and techniques is the ideal approach to teaching. The use of creative activities does not only engage students in the lesson but also improve their critical thinking skills, problem-solving skills, increase cultural awareness and sensitivity through tolerance education and establish a multicultural world perspective towards people and problems.

The need to focus more on creativity is driven by the need of the professional world becoming more competitive and the shift from test-driven approach to learner-centeredness in educational institutions (Richards, 2013). It was also highlighted that creative teaching is believed to increase learners' motivation as well as self-esteem and equip them with skills needed to survive in a competitive professional world. Creativity also enriches lives of individuals leading to a better society.

Additionally, creativity is not only beneficial in the field of education but also in other fields such as workplace leadership (Tierney, Farmer, & Graen, 1999); adult vocational and life success (Torrance, 1972, 1981); healthy psychological functioning, coping, and emotional growth (Kin & Pope, 1999; Russ, 1998); maintenance of healthy, loving relationships (Livingston, 1999); and more effective therapeutic treatments (Kendall, Chu, Gifford, Hayes, & Nauta, 1998).

In the last few decade, it was stated that creativity in classrooms was rare occurrence (Guilford, 1950; Sternberg & Lubart, 1999) due to traditional classroom setting and teaching styles (Furman, 1998; Torrance, 1968) and the non-existence of the creativity element in the curricula (Archambault Jr, Westberg, Brown, Hallmark, Zhang, & Emmons, 1993). Creativity in the field of education is crucial as it fosters academic achievement. Fisher (2004) argued that relevant studies acknowledged the value of creative skills and that learners' academic success increases in parallel to their creative abilities. Creativity, also, engages students to school setting again if learners are demotivated along with teachers who have lost their inspiration due too overly controlling nature of traditional methods.

The place of creativity in foreign language education has recently become more popular as a result of the changes in the educational policies taking place in all parts of the world. The growing use of constructivism in education requires teachers to move away from standardized traditional tests and tasks to more creative activities that will improve learners' skills needed to survive in the 21<sup>st</sup> century such as collaborative learning, analyzing and reflecting on different situations and problem-solving.

Popular approaches used for language teaching were based on behaviorism which focused on observable actions rather than mental processes. Such an approach would include individual activities where each action is assessed, then rewarded or punished like rewarding learners for doing their homework. This process is known as conditioning. Drills are a popular technique for this approach where learners are given the opportunity for review their answer before repeating it or they receive some sort of verbal or non-verbal punishment. Behaviorism, as the name suggests, focuses on changes in the behavior which are triggered by a stimulus and positive behavior is rewarded or praised. Continuous reinforcement leads to conditioned behavior.

The belief that "behaviorism is clearly at the heart of, and the key to the success of, programmed learning" (Pritchard, 2009) is not acceptable in this era where competition is at its highest level in the professional world. Learners will be required to be able to move away from programmed learning in their professional lives and they need to interact, discuss, agree or disagree with colleagues in team through an effective manner. Hence, teachers need to make a shift in their teaching as well as the material and activities they use towards 21<sup>st</sup>

century skills needed by the learners. Behaviorist approaches were criticized mainly for two issues: (i) rewarding will cause learners to lose interest in the learning activity throughout the time; (ii) focusing on rewarding certain learners will alienate the others in class and make them feel left out, thus resulting in their loss of interest and motivation (Pritchard, 2009).

In contrast to Behaviorists, “Constructivists view learning as the result of mental construction. That is, learning takes place when new information is built into and added onto an individual’s current structure of knowledge, understanding and skills” Pritchard (2009). In other words, constructivism supports the idea that individuals learn best when understanding is constructed rather than memorized.

Constructivism and social constructivism believe in the process of constructing knowledge and understanding rather than acquiring or memorizing it. This process occurs through individual experiences and testing assumptions via experiences. Thus, knowledge is interpreted and constructed differently by each individual based on his or her personal experience as well as cultural background.

The principles of constructivism require learners to search for and then construct their own understanding and this motivates them and keeps them engaged. Planned implementation of this process is named as ‘scaffolding’ (Vygotsky, 1978). Scaffolding is the process of giving support to learners at the appropriate time and at the appropriate level of sophistication to meet the needs of the individual. Scaffolding can be provided through discussions, materials, pair or group work to socially construct knowledge and understanding.

A learning theory based on constructivism should have these four characteristics: interactive process between what is already known and what is to be learnt; social process; situated process; and a metacognitive process (Wray & Lewis, 1997). Based on these characteristics, four principles of teaching were also suggested: (i) Learners require sufficient previous knowledge to learn new things and make connections; (ii) anticipation should be established for social interaction through group discussions with different number of people; (iii) situating topics into meaningful contexts is significant; (iv) learners should be encouraged to be aware of their own thought process through their learning (Wray & Lewis, 1997).

Richards (2013) suggested certain issues regarding creativity to consider as well: evaluating existing circumstances as well as new approaches and this requires skills and calls for intuition on the teachers’ parts. The following eight characteristics try to summarize a creative teacher’s qualities:

- Have a strong learning base
- Be confident
- Be committed to students’ success
- Be a non-conformist
- Be familiar with a variety of techniques
- Be willing to take risks
- Focus on learner-centred lessons
- Be reflective

As can be seen from the relevant literature, there are many theories and teaching methods in favor of using creativity in foreign language classrooms. The theoretical groundwork of the current study comes from three main problem-solving theories: The Simplex Process Model (Basadur, 1995), CATWOE (Checkland, 1960) and the Reframing Matrix Tool (Morgan, 1993). This aims to show that not only language teaching methods and theories but also theories and models from various fields can be adapted to foreign language teaching in order to improve 21<sup>st</sup> century teaching skills and implement creative activities.

The first model is Basadur's (1995) Simplex Process Model used to find creative ways to problem-solving. The model enables to combine creative problem-solving process with skills and tools. The model consists of eight steps within three main stages. The first stage is problem formulation stage which includes the three initial steps: (i) problem finding – continuously looking for or anticipating potential problems; (ii) fact finding – collecting information or data about a controversial situation and filtering the facts that would contribute to the next step of problem definition; (iii) problem definition – asking challenging questions to best define the problem through mind-mapping and making connections among concepts. The second stage, solution formulation, consists of the next two steps: (iv) idea finding – brainstorming about possible solutions to aimed problems; (v) evaluating and selecting – developing criteria to choose among possible solutions through cause and effect analysis. The last stage involves the final three steps and acknowledges that creating a solution is not sufficient unless it is effectively applied: (vi) action planning – planning the steps to be followed for the preparation of the solution implementation; (vii) gaining acceptance – acknowledges the best plan for action and sells the idea through effective advertising strategies; (viii) action taking – following the establishment of the problem, solution and the steps to implement the solution, action is taken to actually implement the steps planned and execute the solution.

The second model is more like a checklist offered to follow for effective problem-solving named as CATWOE by Checkland (1960). The word CATWOE is the acronym made up of the initial of each checklist item in the process of evaluating the system within the problem occurred and this feature distinguishes this model from the others. The first item in the checklist is customers, which means the beneficiaries of the problem and how the problem affects them should be identified. Actors, as the second element of the checklist, represent recognizing the parties involved in the problem. The next element, transformation, focuses on the single process in the system that will turn the input into output. The fourth element world view requires looking at the bigger picture and the impacts of the issue at a larger scale. Another element is the owner as the person in charge of the system who has the power to change it. The final element focuses on environmental factors that may interfere with the operating of the system such as physical conditions, laws and regulations, ethical concerns, etc.

The third model is the Reframing Matrix model suggested by Morgan (1993) in attempt to help with the understanding of a given problem from different perspectives and find suitable solutions. The model suggests three steps to follow through: The first step is drawing a grid with four squares with a blank space in the center of the grid. The second step is deciding on the four perspectives. These perspectives are: product perspective which focuses on the product itself to see if there are any problems regarding the product, its price, its reliability and how it serves the market; the second perspective is planning perspective emphasizing the strengths and weaknesses of the business or marketing plans and how they can be improved; the third is potential perspective highlighting the potential for increasing sales or productivity and how this can affect the problem; and the last perspective is the people perspective focusing on the impact and implications of the problem on the people, and what do the people involved think about the problem. Considering these four perspectives allows rooms to see the problem from different viewpoints and consider various options. The final step is brainstorming elements linked with the problem from each of the four perspectives and connecting the results with the appropriate quadrant in the grid. Upon completing the matrix, the problem will be better understood and more solutions can be generated.

## Method

### Study design

This study can be considered as an action research where the researcher designed various creative activities and techniques and applied them in her English language classes. The study adopted a quasi-experimental design working with 40 Intermediate level English learners. The researcher worked with two of her classes; in one class students were taught through creative activities while in the other class, students were taught through traditional method using mostly course books. Majority of the creative activities are designed as problem-solving activities to foster active student engagement and stimulate students' various skills in addition to language learning.

Based on the relevant literature and the models taken as the basis of this study, the researcher implemented certain activities and tasks in her EFL classes in order to stretch students' creativity, problem-solving and critical thinking skills:

- Brainteasers,
- Jokes,
- Riddles,
- Care and share sessions to make learning personal,
- Simple Mathematics questions,
- Writing captions for pictures,
- Debates,
- Pair and group work activities,
- Preparing questionnaires,
- Preparing radio/conference talk shows,
- Writing letter of advice,
- Role-play,
- Mind-mapping,
- Brainstorming,
- Brochure making,
- Field trips, and
- Word of the day activities.

In addition to these activities, the researcher also used another set of activities to help learners develop self-awareness and self-reflection including:

- Mirroring,
- 'I was surprised when...'
- 'Today, I learnt ...'
- 'I really wonder ...'
- 'I would have liked...'
- 'Class would be more interesting if ...'
- 'Now, I understand ...'
- 'I wish ...'

## Sample lesson plan

The characteristics and principles suggested by constructivism, social constructivism and creative teaching were all considered by the researcher while designing new materials and activities for creative lessons. A lesson designed to help students go beyond their usual way of thinking and gain new insights based on The Simplex Process Model (Basadur, 1995) follows the following steps:

The first stage of the Model focuses on problem formulation through three steps: (a) Drawing a circle at the center of the board and writing a topic for students to generate related words such as 'environment'; (b) Allowing each learner to come up to the board and write down the words they know about the given topic such as dirty, pollution, famine, drought, global warming, and natural disasters, showing more related words through projection and eliciting them from the students; (d) Getting students focus on certain problems linked to the topic such as air pollution or global warming followed by adding more problems such as water shortage or noise.

The second stage is about solution formulation in two steps: (e) Putting the class into two groups: one of them brainstorms the causes and effects for water shortage while the other group follows the same procedure for air pollution; (f) Preparing problem cases about air pollution one of which can be a rich businessman who wants to cut down all trees surrounding the student's home and build a large factory. Local citizens are against this and they start to protest the businessman. The problem question is: What should the businessman do to overcome this problem?

The last stage is about solution implementation and in classroom setting it can be done as follows: (g) Upon identifying the problem, the students are asked to list specific actions to implement the possible solutions; (h) students are paired up and asked to suggest various solutions to each other's problems by using the words they have listed in the beginning of the lesson; (i) at the final step, the students are asked whether they accept any of the suggested solutions, if they are convinced about the feasibility of the solutions suggested by their peers.

Implementing such a lesson enables students to brainstorm words and produce ideas linked to a given topic as well as allowing them to discuss and try to persuade each other. The students will be able to support their ideas and arguments with examples and provide rationale for their responses. They will also have to think carefully to prepare problem cases as well as being creative when offering solutions. Pair and group work allows them to listen carefully, respond effectively to each other and learn turn-taking in conversations which will in turn; improve their critical thinking and problem-solving skills.

## Data Collection Instruments and Analysis

The study used teacher's diary and student interviews to collect in-depth qualitative data during the implementation of the creative activities. The teacher's diary consisted of the teacher's reflections about the stages of the lesson; the materials and activities done in class; teacher's observation about students' interest and participation in class activities; challenges students and teacher faced during the day while learning/teaching; rapport among students and teacher; and level of the materials. The diary was filled throughout the week during which the researcher implemented creative materials and activities.

After completing the implementation of newly designed materials and activities in a week, the researcher approached the students of the control group and the experimental group and informed them about the study. After receiving students' consents, the research conducted one-to-one semi-structured interviews with half of the students from both groups. The

interviews aimed to gather students' reflections on the traditional teaching methods and activities from the control group; and reflections of students on the newly designed materials and activities from the experimental group. Each interview lasted about 30 minutes and they were audio-recorded.

Both of the data collection instruments were first piloted and then, finalized upon expert opinion. The data gathered from teacher's diary and student interviews were analyzed through content analysis.

### Findings

The results from the content analysis of the teacher's diary revealed a number of findings in relation to the teachers' opinions on the integration of creative activities into EFL curriculum. The major findings can be summarized as: (i) after a certain period of time students started to feel more empowered and were more interested in learning and eager to seek new experiments and learning experiences; (ii) learning in such a comfortable environment enabled students to verbalize their thoughts more freely; (iii) the students have the responsibility to learn to apply various creativity strategies depending on their own interest; (iv) the students learned to feel ownership in their successes and failures; giving them an opportunity to make mistakes fostered creativity. In this way they learned to find ideas that would otherwise have never been discovered; (v) they need autonomy to make choices about what seems important. Without student choices and ownership, the student's motivation to be creative is lost; (vi) to teach the creative process, the teacher usually avoided posting charts that gives answer unless the students themselves have invented the charts. The teacher might ask the students to do experiments; (vii) in foreign language learning the students discovered that knowing the grammar rules do not work if they do not use them in and out of the classroom. They made foreign friends and started interacting with them; (viii) the teacher experienced and the students discovered that creativity develops through observation, experience, and imagination so the teacher tried to relate her way of teaching to the students' needs, lesson that are based on rules, copy work, examples, and demonstrations are less apt to encourage creativity; and the teacher was patient enough to see that the creative process takes time, and it has some other stages as well like preparation, incubation, insight, elaboration, and evaluation.

The semi-structured interviews conducted with the students aimed to find out about students' perceptions regarding creative classrooms and creative activities practiced in foreign language classrooms. The responses from the semi-structured interviews revealed that most of the students found creative way of teaching confusing (as the teacher was always encouraging them to think and brainstorm ideas) and that creative way of teaching is not easy to understand (the teacher asked them to make associations). It was also reported that some students found creative lessons challenging and gave up participating while most of the students did not know how to take notes during the lessons. It was interesting that most of the students notes their anger towards the teacher because she did not write grammar rules on the board and not asked the students to memorize the grammar rules, vocabulary, or any other information for the tests. Also, most of the students were surprised about the friendly rapport among teacher and students. They stated that they had never thought and experienced that a teacher would be so approachable so they felt themselves comfortable and it caused them to ask more questions as the time went by. As expected by the researcher, most of the students kept silent during the class so as not to make mistakes while speaking; communication among students was good but they preferred talking in their native tongue after class; some of

the students asked for more grammar lessons in class; some of the students asked for more extra materials which help them get prepared for the tests; some students felt happy being given responsibilities in class such as checking whether everyone prepared a question before the class on Mondays; most of the students enjoyed some interactive activities in class as they had a chance to improve their speaking skills and developed their friendship with their classmates. The students also found mind-mapping a very useful strategy to relate ideas while some students found brainstorming difficult as their level of English limited them to express their ideas in English (lack of vocabulary). Lastly, most of the students enjoyed doing mini projects and sharing them with classmates in class; and some students defined creativity as having lots of imaginative, unrealistic ideas whereas others stated that creativity enables them to solve problems easily.

### **Discussion and Conclusion**

To sum up, the creative activities and techniques applied in foreign language classes throughout this study are based on three main theories focusing on problem-solving skills: The Simplex Process Model (Basadur, 1995), CATWOE (Checkland, 1960) and the Reframing Matrix Tool (Morgan, 1993). Clearly, these are not very recent theories or models so the key point here is to remember updating teaching skills based on grounded theories and establish a positive change and creativity in classrooms.

The study showed that creativity in foreign language teaching is significant due to various reasons and factors including: the need to increase the quality of foreign language teaching; helping learners to gain lifelong skills; enhancing pedagogical knowledge and experience; the shift in educational policies; changes in students' learning; making learning more fun, exciting and motivating; change in the profile of the graduates; high level of competition in the world; and the need for 21<sup>st</sup> century skills such as planning, organizing, discussing, selecting, reformulating, reflecting, evaluating, etc.

As a result of the activities and techniques implemented in foreign language classes, it was found that there are certain advantages to using creative activities in EFL classes. These include: (i) developing students' divergent thinking skills, memory power, brain processing speed, critical thinking skills, communication skills, interpersonal skills through facilitating active participation and student engagement, insights and conflict resolution; (ii) improving students' concentration through mindfulness and nasal breathing practice; (iii) encouraging an atmosphere of openness; (iv) involving direct and experiential learning; (v) promoting lifelong learning.

### **Acknowledgments**

I would like to express my special thanks of gratitude to my students in University of Kyrenia as well as our university administration who gave me the golden opportunity to do this wonderful research study on the topic of creativity, which also helped me to widen my repertoire of effective teaching.

### **References**

Archambault Jr, F. X., Westberg, K. L., Brown, S. W., Hallmark, B. W., Zhang, W., & Emmons, C. L. (1993). Classroom practices used with gifted third and fourth grade students. *Journal for the Education of the Gifted*, 16(2), 103-119.

- Basadur, M. (1995). *The power of innovation: How to make innovation a way of life and put creative solutions to work*. Financial Times Management.
- Checkland, P. B. (1989). Soft systems methodology. *Human Systems Management*, 8(4), 273-289.
- Fisher, R. (2004). What is creativity? In Robert Fisher and Mary Williams (eds.) *Unlocking Creativity: Teaching Across the Curriculum* 6–20. New York: Routledge.
- Furman, G. C. (1998). Postmodernism and community in schools: Unravelling the paradox. *Educational Administration Quarterly*, 34(3), 298-328.
- Guilford, J. P. (1950). Creativity. *American Psychologist*, 5(9), 444.
- Kendall, P. C., Chu, B., Gifford, A., Hayes, C., & Nauta, M. (1999). Breathing life into a manual: Flexibility and creativity with manual-based treatments. *Cognitive and Behavioral Practice*, 5(2), 177-198.
- Kin, B. J., & Pope, B. (1999). Creativity as a factor in psychological assessment and healthy psychological functioning. *Journal of Personality Assessment*, 72(2), 200-207.
- Livingston, J. A. (1999). Something old and something new: Love, creativity, and the enduring relationship. *Bulletin of the Menninger Clinic*, 63(1), 40.
- Morgan, M. (1993). *Creating workforce innovation: Turning individual creativity into organisational innovation*. Business & Professional Publishing.
- Pritchard, A. (2009). *Ways of learning*. London and New York: Routledge Taylor and Francis Group.
- Richards, J. C. (2013). Creativity in Language Teaching. Retrieved from <http://www.professorjackrichards.com/wp-content/uploads/Creativity-in-Language-Teaching.pdf> on 20 June 2020.
- Russ, S. W. (1998). Play, creativity, and adaptive functioning: Implications for play interventions. *Journal of Clinical Child Psychology*, 27(4), 469-480.
- Sternberg, R. J. & Lubart, T. I. (1999). Investing in creativity. *American Psychologist*, 51, 677-688.
- Tierney, P., Farmer, S. M., & Graen, G. B. (1999). An examination of leadership and employee creativity: The relevance of traits and relationships. *Personnel Psychology*, 52(3), 591-620.
- Torrance, E. P. (1968). A longitudinal examination of the fourth grade slump in creativity. *Gifted Child Quarterly*, 12(4), 195-199.
- Torrance, E. (1972). Predictive validity of the Torrance tests of creative thinking. *The Journal of Creative Behaviour*, 6(4), 236-262.
- Torrance, E. P. (1981). Predicting the creativity of elementary school children (1958-80) and the teacher who "made a difference". *Gifted Child Quarterly*, 25(2), 55-62.
- Vygotsky, L. (1978). Interaction between learning and development. *Readings on the Development of Children*, 23(3), 34-41.
- Wray, D., & Lewis, M. (1997). *Extending literacy*. London: Routledge Falmer.



## EXAMINATION OF POSTGRADUATE THESIS CARRIED OUT WITH ERRORLESS TEACHING METHODS IN INDIVIDUALS WITH AUTISM SPECTRUM DISORDER

Fevziye Ertekin<sup>1</sup>, Başak Bağlama<sup>2\*</sup>

<sup>1</sup>Master student, Department of Department of Special Education, Atatürk Faculty of Education, Near East University, North Cyprus, Mersin 10, Turkey

<sup>2</sup> Assist. Prof. Dr., Department of Special Education, Atatürk Faculty of Education, Near East University, North Cyprus, Mersin 10, Turkey [basak.baglama@neu.edu.tr](mailto:basak.baglama@neu.edu.tr)

\*Correspondence: [basak.baglama@neu.edu.tr](mailto:basak.baglama@neu.edu.tr) ; Tel.: +090 5438106549

### Abstract

Correct teaching methods are techniques that include teaching techniques used in many areas such as functional, academic, self-care and daily life skills of children with special needs. When the postgraduate thesis studies on correct teaching methods with autistic individuals and children are examined in the YÖKTEZ database, it is seen that thesis studies on the types of correct teaching method are carried out and descriptive and meta-analysis studies are carried out for subheadings; but there is no study that examines these theses in detail under the name of correct teaching methods. The aim of this study is to examine current research trends in postgraduate thesis carried out with using errorless teaching methods in the education of individuals with autism spectrum disorder in Turkey. A total number of 9 open-access postgraduate thesis obtained from Higher Education Research Council of Turkey (YOK) as a result of comprehensive survey from the archives and published in the years 2011 and 2019 were included open access within 9 graduate thesis. Document analysis as one of the qualitative research methods was used in the research. When the postgraduate theses in YÖKTEZ related to the thesis related to the errorless teaching methods of students diagnosed with autism are examined, 3 of the theses are about teaching with gradual help, 2 of the theses are about teaching by increasing the clue gradually, 2 of the theses are about teaching with concurrent hints and 2 of them are about fixed waiting period teaching types. Thesis are examined in the field of academic skills, features of the subjects, features of the method, and features of the model, features of the findings. As a result of the YÖKTEZ survey, 8 master and 1 doctoral thesis related to the errorless teaching methods were reached. When the research methods used in theses are examined, it is concluded that single subject research methods are used in 9 theses. According to the purpose of the research, it was determined that the participants used single subject research methods and that the age ranges of the students formed the participants in the dissertations examined were between 3 and 15 years old. The theses were examined in terms of the area of academic skills taught, the characteristics of the subjects, the characteristics of the method, the features of the model, the features of the findings, and the findings were discussed in the light of forward-looking suggestions.

**Keywords:** Autism spectrum disorder, errorless teaching methods, postgraduate thesis.

## Introduction

The quality of teaching can be improved by offering effective teaching methods to individuals with different learning characteristics that can result in fewer errors and less time at the same time. In accordance with the findings of experimental research, educators continue to seek to develop teaching methods that are supported by their effectiveness and efficiency. In addition to this, individuals who receive teaching and individuals who offer teaching can be given the opportunity to choose among the methods. Being able to make such a choice can positively affect the quality of life of the individual and his / her family as well as affect the professional life of the practitioner in a positive way (Tekin-Iftar & Kırcaali-Iftar, 2012). The success of individuals with intellectual disabilities in social life is closely related to the nature of the education given to them in their educational life and the characteristics of the support and services provided (Tasse, Luckasson & Schalock, 2016). In this respect, teachers need to know what the basic requirements are for students to demonstrate a skill or behavior, (Morse & Shuster, 2004), but also strive to achieve effective teaching strategies that minimize mistakes (Gibson & Shuster, 1992). During the acquisition of the discussed learning stages, several effective and errorless teaching methods are used to teach a variety of skills to the children with disabilities. Errorless teaching methods are grouped into two groups: response tips and stimulus adaptations. During the teaching, before the child reacts, it differs in terms of providing hints and / or clues that ensure the correct reaction and fading the clues (Tekin, 1999; Clare & Jones, 2008).

Errorless teaching is an approach developed from the assumption that learning skills and concepts in the best way occurs not through mistakes made during teaching but through positive responses and exercises during teaching (Wolery, Ault & Doyle, 1992). Three basic prerequisites are required to apply the errorless teaching method; (a) the teacher should determine and present the skill to be taught, taking into account the student's capacity. (b) The teacher should develop skill analysis when necessary and aim to teach only a small part at a time. (c) The teacher should be able to apply different teaching strategies such as tips, modeling, etc. to facilitate student learning.

Wolery et al. (1990) attribute the emergence of errorless teaching methods to four reasons; (1) errorless teaching methods are effective teaching methods. (2) In the errorless teaching methods, the teacher helps the student develop a positive relationship, as the student responds correctly to almost any attempt. (3) A small number of negative behaviors are exhibited in errorless teaching method sessions. (4) Since students learn little from the mistakes they make, errorless teaching methods are used. It is important for practitioners to take into account the learning characteristics, age, and environment characteristics of the individuals to whom they will be teaching, and to decide accordingly on the teaching method to be applied.

Autism spectrum disorder (ASD) is a neurological developmental disorder that is characterized by persistent deficiencies in social interaction and communication and limited repetitive behavior and occurs in the early stages of development (American Psychiatric Association [APA], 2013). One of the most widely used methods in teaching both domestic skills and academic and other fields of skills for individuals and children with autism diagnosis is errorless teaching methods (Terzioglu & Yikmis, 2018). For this reason, one of the scientific sources that include scientific-based practices in which errorless teaching methods are used for individuals and children with autism diagnosis is related thesis studies. Thesis studies are the most important sources that enable us to reach broad, comprehensive and reliable information on many subjects such as application, teaching process, methods, data collection tools, programs and studies carried out at home and abroad (Gul&Diken,

2009). Therefore, it is considered important to evaluate the effectiveness of this method through the examination of the master and doctoral theses in thesis center of Higher Education Council of Turkey (YÖKTEZ) where it is aimed to determine the effectiveness of the errorless teaching methods. However, no work has been found in which these theses have been examined in detail.

It is considered that collection of theses related to errorless teaching methods in general in education of students with autism in Turkey and presentation of the information related to these theses in a study (eg. participants, characteristics of the participants, research method, data collection tools used, application process, findings) will make it easier for people and specialists who deal with students with mental disabilities to access the necessary information. In addition, such a study provides researchers to be able to present important inputs for developing solutions to problems related to the topics that are not addressed about errorless teaching methods for students diagnosed with autism or those diagnosed with autism spectrum disorder, or deficiencies in researched topics, determining the current situation, determining teachers, family and student views, and using the errorless teaching. In addition to these situations, identifying similar and different aspects of the studies that show common features may guide future research. Therefore, the aim of this study is to review the graduate thesis studies conducted in Turkey on students diagnosed with autism or autism spectrum disorder.

## **Method**

### **Research Model**

Document analysis from qualitative research methods was used in the research. Document review covers the analysis of written materials containing information about the cases or cases to be investigated. Document review can be implemented in five major stages: (1) Reaching documents, (2) checking authenticity, (3) understanding documents, (4) analyzing data and (5) using data (Yildirim & Simsek, 2013).

### **Data Collection**

The research included 9 accessible post-graduate theses obtained from the thesis archive of the Turkish Higher Education Council which was carried out between 2011 and 2019. The databases were scanned to access documents using keywords such as “autism spectrum disorder”, “autism” and “errorless teaching”.

As a result of the survey of the sources, all theses by 1989 were examined. However, as of 2011, a total of 9 thesis studies have been reached on the subject of the practices that include any of the 8 sub-headings and the errorless methods used in the education of individuals with autism diagnosis.

### **Data Analysis**

The theses included in the research were analyzed using a thesis analysis form prepared in advance by the researchers. In the form prepared, theses were examined according to year, thesis level, university, and institute, and department, title of thesis advisor, research model, and number of participants, data collection tool, and data analysis method. The findings

obtained within the framework of the examination were interpreted according to descriptive analysis technique and suggestions were made for future research and applications in this field.

During the analysis of theses, the studies were divided into categories according to their subjects, and which theses were included in each category were specified. Information about the name of the author, year of publication, level of thesis, title of consultant, design of the research, data collection tools, data analysis method and findings are provided in tables. Studies emphasized to have similar or common characteristics were examined comparatively and brief information was given regarding the research findings. The features that were considered important for thesis studies were presented in tables.

## Results

As a result of the survey of the field literature within the scope of this study, 9 graduate theses (8 master, 1 doctorate thesis) were obtained for the theses of the students with autism diagnosis in Turkey where the methods of errorless teaching are used. When the postgraduate theses in YÖKTEZ related to the thesis related to the errorless teaching methods of students diagnosed with autism are examined, 3 of the theses are about teaching with gradual help, 2 of the theses are about teaching by increasing the clue gradually, 2 of the theses are about teaching with concurrent hints and 2 of them are about fixed waiting period teaching types. Thesis are examined in the field of academic skills, features of the subjects, features of the method, and features of the model, features of the findings.

As a result of the YÖKTEZ survey, 8 master and 1 doctoral thesis related to the errorless teaching methods were reached. When the research methods used in these are examined, it is concluded that single subject research methods are used in 9 theses. According to the purpose of the research, it was determined that the participants used single subject research methods and that the age ranges of the students formed the participants in the dissertations examined were between 3 and 15 years old.

**Table 1.**

Graduate theses on the use of errorless teaching methods in children with autism diagnosis

Name of the Author and Year	Thesis Level	Research Method	Data Collection Tool	Data Analysis Method	Participants	Findings
Kilic (2019)	Master thesis	Multiple Probe Design Among Participants	Data Record Form, Video Records, Observation	Teaching, Polling, Monitoring and Generalization Effectiveness Data, Social Validity and Reliability Data Related to "Tapping (proper rhythm)"	Students with ASD (2 Boys and 1 Girl)	Along with the Orff approach, it is to determine the effectiveness of the use of teaching method with the simultaneous hint of the wrong teaching methods in teaching rhythm-holding skills to the students of OIZ who continue to the special education business application center.
Kumaz (2018)	PhD thesis	Multiple Probe Design Among Subjects	Subjective Evaluation and Social Comparison Methods	Effectiveness, Social Validity And Reliability Data	Four Male Subjects aged 4-6 years diagnosed with ASD	The effectiveness of teaching by gradually increasing the clue in teaching common attention behaviors used during conversation to individuals with autism spectrum disorders
Ergin	Master	Multiple	Natural	Graphical	Three Boys, 3-6	The aim of this study is to examine the

(2017)	thesis	Probe Design Among Participants	Teaching Methods, Observer Information Form	Analysis, Reliability Calculation Formula, Parent Social Validity Form, Descriptive Analysis	Years Old, with ASD	effectiveness of teaching by increasing the clue in the diversification of imaginary play behavior of children with autism spectrum disorder (ASD).
Dogan (2016)	Master thesis	Multiple Probe Design Among Participants	Data Registration Forms where Teaching, Generalization and Monitoring Sessions are Recorded, Social Validity Questionnaires	Column Chart With Pretest And Posttest Comparison, Video Records Application Reliability Analysis Formula, Opinion Analysis of Opinion and Suggestion	5-6 Years Old children with ASD (1 Girl 2 Boys) and 6 Children with Normal Development	The aim of this course is to examine the effectiveness of fixed waiting education offered in small group in teaching professions to children with ASD.
Cattik (2016)	Master thesis	Repetition of Multiple Probe Design Among Behaviors Model to Participants	Digital Game Skills Data Record Forms, Pretest And Posttest Data Column Chart	Digital Skills Observer Reliability Application Reliability Data Registration Form, Social Validity Interview Question Form	4 Boys With ASD Diagnosis, Researcher, Assistant Teacher, Observer And Parents	Teaching children with autism spectrum disorder (ASD) in a small group arrangement, on the smart board, with gradual assistance, using the teaching method, digital play and observation, and determining the views of the families of the children participating in the study about the realized teaching process
Boyras (2016)	Master thesis	Multiple Probe Design Among Participants	Beginning, Polling, Monitoring, Generalization Data Skill Analysis Record, Social Validity Data Form	Recorded Formula "Consensus / (Consensus 43 + Disagreement) X 100, Observed Practitioner Behavior / Planned Practitioner Behavior X 100" Formula	3 Children 6-7 Years Old, Pre-School With ASD Diagnosis	The effectiveness of the teaching method with gradual help in teaching the rules of playing games to children with autism spectrum disorders has been investigated.
Sahin (2015)	Master thesis	Adaptive Transformed Applications Model.	Gobdö-2-Tv Evaluation, Reinforcement Determination Form, Errorless teaching Method Steps	Analysis Methods of Data on Generalization of Effectiveness and Efficiency of Instructional Methods	Four ASD-diagnosed male subjects whose ages ranged from 36 -74 months	The efficacy and efficiency of fixed waiting-time teaching (SBSS) practices, which are structured in the teaching of the names of social warning signs to children with autism spectrum disorder (ASD) and presented with scattered experiments embedded in the game, were compared.
Porsuk (2018)	Master thesis	AB Pattern	Demand Behavior Data Registration Form, Inter-Observer Reliability Data, Application Reliability Data Registration Form, Social	Graphical Analysis in accordance with A-B Model, Observed Practitioner Behavior / Planned Practitioner Behavior x 100 "	Three Male Students Aged 11,12,15	To evaluate the effectiveness of tablet computer application, "Which one do you want?", on the demanding behavior of children with ASD using the stepwise teaching method,.

			Validity Interview Form			
Taptik-Sahin (2011)	Master thesis	Multiple Probe Design Among Subjects	Skill Analysis, Collective Polling, Daily Polling, Monitoring and Generalization Sessions	Graphical Analysis Method, Pretest - Column Chart with Posttest Model	Primary school students, 2 girls and 1 boy with ASD diagnosis, ages 9-10	In teaching children with autism the ability to brush teeth, the effectiveness of teaching with simultaneous clues was investigated.

## Discussion and Conclusion

In this study, children with autism diagnosis were considered as participants in the study groups in the related research in line with the findings of descriptive analysis. One of the results obtained from the theses examined is that individuals with autism can acquire behaviors by using eight types of errorless teaching method. To teach a new skill, process or concept to individuals with special needs and to enable students to have a successful learning experience depends on the teaching method or approach used/used by the teacher (Yikmis, 1999). Therefore, the use of errorless teaching methods with autism individuals has functional effect. In the literature review of the domestic and international literature, a study comparing the error-free and error-correction application practices of fixed-waiting education, which is one of the errorless teaching methods, was encountered in teaching skill for individuals with autism (Wolde, 2009; Klaus et al., 2019).

A study investigating the effectiveness of teaching with the simultaneous clue to autistic individuals was encountered. In line with the data obtained in the research, it was noteworthy that the types of single-subject research methods were used in all of the research. In the related theses, it was observed that single-subject experimental designs were selected as the research model, and multiple polling models were chosen among the single-subject experimental designs (Tooper, 2006). This is due to the fact that working with small groups in skill or concept teaching reaches effective results in less time. In the theses examined, boys are more in the distribution of participating children compared to gender in the studies (n=23 boys, n=3 girls and n=3 no gender specified). The prevalence of autism in boys was 4-5 times higher than in girls (Morales-Hidalgo et al., 2018). Polling, monitoring, generalization and application data were included in each of the theses examined. The rate of validity and consistency data was specified. A descriptive analysis study of simultaneous clues was conducted when the literature was scanned, but no descriptive analysis study was found under the name of errorless teaching methods.

In this study, a total of 9 theses (8 Masters, 1 PhD) related to the non-false teaching methods used for individuals with autism were examined from YÖKTEZ database. 3 of these theses were about education with gradual assistance, 2 of them were about education with gradually increasing the clue, 2 of them were about education with simultaneous clues, and 2 of them were about education with fixed waiting period education. When the theses dealing with the gradual assistance of these researches, the education with increasing the clue gradually, the teaching with the simultaneous clue, the fixed waiting period education are examined, it was concluded that single-subject research design was used in 9 theses. As a result of the dissertations examined, it was concluded that the age distribution of individuals diagnosed with autism varies between 3-15 years.

While monitoring data was collected in all thesis where single subject research methods were used. Generalization data, reliability data and application data were also collected. In the thesis database of the higher education institution (YÖKTEZ), it is observed that the number of research related to theses in which errorless teaching methods are used in individuals with autism is very small. However, in other databases, it is suggested that meta-analysis and descriptive study of articles associated with errorless teaching methods for individuals with autism be performed.

In this study, a literature review was conducted for local resources and postgraduate theses. In future researches, literature reviews can also be made about foreign sources and articles or declaration studies, and trends in studies related to studies using errorless teaching methods for individuals diagnosed with autism in the world can be revealed. This study revealed current trends in autism spectrum disorder in research using errorless teaching methods. Therefore, it may be suggested that this research should be repeated at different periods in the future and that the current research trends in that period be determined.

### Acknowledgments

I would like to express my sincere gratitude to my dear teacher Başak Bağlama Yücesoy, who helped me complete my work with her motivation during the course of the study.

### References

- Çattık, M. (2016). *The effectiveness of gradual assisted instruction in a small group on the smart board on digital play and observational learning skills of children with autism spectrum disorders* (Unpublished master thesis). Graduate School of Social Sciences, Anadolu University, Eskisehir, Turkey.
- Cipani, E., Augustine, A., & Blomgren, E. (1982). Teaching profoundly retarded adults to ascend stairs safely. *Education and Training of the Mentally Retarded*, 51-54.
- Cipani, E., & Madigan, K. (1986). Errorless learning: Research and application for "difficult to teach" children. *Canadian Journal for Exceptional Children*, 3(2), 39-43.
- Doğan, S. (2016). *The effectiveness of the fixed waiting time teaching offered in small groups in teaching professions to children with autism spectrum disorders* (Unpublished master thesis). Graduate School of Educational Sciences, Anadolu University, Eskisehir, Turkey.
- Ergin, G. (2017). *The effectiveness of instruction by increasing the clue in the diversification of imaginary play behaviors of children with autism spectrum disorders* (Unpublished master thesis). Graduate School of Educational Sciences, Anadolu University, Eskisehir, Turkey.
- Gibson, A. N., & Schuster, J. W. (1992). The use of simultaneous prompting for teaching expressive word recognition to preschool children. *Topics in Early Childhood and Special Education*, 12(2), 247-267.
- Gül, S. O., & Diken, İ. H. (2009). Reviewing the graduate thesis was carried out in Turkey for specialized training in early childhood. *International Journal of Early Childhood Special Education (INT-JECSE)*, 1(1), 46-78.

- Güldenöglü, İ. (2008). *Investigation of the effectiveness and continuity of mutual teaching technique in teaching reading comprehension skills to students with mild mental retardation* (Unpublished master thesis). Ankara University Graduate School of Educational Sciences, Ankara.
- Karabulut, A., & Yıkmaş, A. (2010). Effectiveness of simultaneous hint teaching in teaching time telling skills to mentally handicapped individuals. *Journal of Abant İzzet Baysal University*, 10(2), 103-113.
- Kılıç, Y. (2019). *The effectiveness of simultaneous cue teaching in teaching music activities prepared with Orff approach to students with autism spectrum disorders* (Unpublished master thesis). Marmara University Graduate School of Educational Sciences, Istanbul.
- MacFarland-Smith, J., Schuster, J. W., & Stevens, K. B. (1993). Using simultaneous prompting to teach expressive object identification to preschoolers with developmental delays. *Journal of Early intervention*, 17(1), 50-60.
- MacDuff, G. S., Krantz, P. J., & McClannahan, L. E. (1993). Teaching children with autism to use photographic activity schedules: Maintenance and generalization of complex response chains. *Journal of Applied Behavior Analysis*, 26(1), 89-97.
- Özak, H., & Diken, İ. H. (2010). Mentally handicapped students graduate thesis revision of made in turkey regarding functional academic skills. *Journal of Special Education*. 11(1), 43-58.
- Özer, E., Çoşgun Başar, M., Özkubat, U., Töret, G., & Karasu, N. (2013). The effectiveness of simultaneous cue teaching used in teaching skills in children with disabilities: descriptive evaluation and meta-analysis. *Special Education Journal*, 14(2) 67-84.
- Porsuk, D. (2018). *The effectiveness of the tablet computer application presented with progressive assisted instruction on the demanding behaviors of students with autism spectrum disorders* (Unpublished master thesis). Marmara University Graduate School of Educational Sciences, Istanbul.
- Şahin, Ş. (2015). *Comparison of the effectiveness and efficiency of the traditional and embedded teaching provided with fixed waiting time teaching in the teaching of social warning signs to children with autism* (Unpublished master thesis). Anadolu University Graduate School of Educational Sciences, Eskisehir.
- Sarar B. D. (2016). *The effectiveness of progressive assistance teaching method in teaching children with autism in rules of play* (Unpublished master thesis). Marmara University Graduate School of Educational Sciences, Istanbul.
- Schuster, J. W., & Griffen, A. K. (1991). Using constant time delay to teach recipe following skills. *Education and Training in Mental Retardation*, 26(4), 411-419.
- Schuster, J. W., & Griffen, A. K. (1993). Using a simultaneous prompting strategy to teach a chained task to elementary students with moderate mental retardation. *Journal of Behavioral Education*, 3, 299-315.
- Taptık Şahin, G. (2011). *The effectiveness of simultaneous tint teaching in teaching tooth brushing skill to children with autism* (Unpublished master thesis). Abant İzzet Baysal University Graduate School of Social Sciences, Bolu.
- Tekin, E. (1999). Correct teaching methods. *Special Education Journal*, 2(3)-87-102.

Wolery, M., Gast, D. L., Kirk, K., & Schuster, J. (1988). Fading extra-stimulus prompts with autistic children using time delay. *Education and Treatment of Children, 11*, 29-44.

Wolery, M., Bailey, D. B., & Sugai, G. M. (1988). *Effective teaching: Principles and procedures of applied behavioral analysis with exceptional students*. Boston Allyn: Bacon, Inc.



## EVALUATING THE CONTENT OF TEACHER CANDIDATES' COURSE BOOKS ACCORDING TO VISUAL DESIGN ELEMENTS

Burak Demir<sup>1,\*</sup>, Mert Baştaş<sup>2</sup>, Yücehan Yücesoy<sup>3</sup>

<sup>1</sup> Department of Social Studies Teaching, Atatürk Faculty of Education, Near East University.

[burak.demir@neu.edu.tr](mailto:burak.demir@neu.edu.tr)

<sup>2</sup> Department of Social Studies Teaching, Atatürk Faculty of Education, Near East University.

[mert.bastas@neu.edu.tr](mailto:mert.bastas@neu.edu.tr)

<sup>3</sup> Department of Classroom Teaching, Atatürk Faculty of Education, Near East University.

[yucehan.yucesoy@neu.edu.tr](mailto:yucehan.yucesoy@neu.edu.tr)

\*Correspondence: [burak.demir@neu.edu.tr](mailto:burak.demir@neu.edu.tr); Tel.: +90 548 861 26 22

### Abstract

Textbooks are one of the indispensable materials of educational life, even if the technology has developed, textbooks from past to present are still among the most basic building blocks of education and it can be said that they will continue in this way in the future, and in this research, social studies textbooks taught in schools in the Republic of Turkey and the Turkish Republic of Northern Cyprus are intended to be evaluated by teacher candidates for visual design principles. Alpan (2004) was used in the research, which is the visual design scale of "Graphic/Visual Design Principles Scale for Textbooks". The score of the scale is calculated as "Yes" option is calculated as 2 points, "Partially" option is calculated as 1 point and "No" option is calculated as 0 points. The data obtained as a result of the research were evaluated by scoring between 1-10. According to the result of the evaluation of the teacher candidates from the research, it was determined that the books had different levels of averages according to the scale dimensions but were quite suitable as a general line.

**Keywords:** Education, social studies, visual design.

### Introduction

It can be said that education has been an extremely broad concept for centuries, encompassing all activities in order to bring new abilities and information in one's advancing life in order to develop their physical, mental behavior and abilities in the most appropriate way in the period from the birth to the death of the individual. With the transition of people to settled life, education is carried out in learning environments, i.e. schools. School education is a certain part of the general lines for the socialization of the individual. Individuals spend a large part of their life in schools, learning what are the expectations and norms of society through various disciplines in schools (Gümüšoğlu, 2016; Oznacar, Yucesoy & Demir, 2020). In today's world, it can be said that individuals learn more comfortably and quickly the difficulties and learnings they face in the society they live in than in past lives, and they need various tools and equipment to perceive these changes (Polat, 2020). The first of these tools and equipment is textbooks.

Textbooks are among the educational materials used by students, teachers and school administrators in educational climate today, where increased reality, infographics and even social media initiatives for the use of education are at the forefront, even as technological

advances in education have increased in the time period from the past to the present (Nacak, Baglama & Demir, 2020; Bicen & Demir, 2020; Yücesoy, Demir, Baglama, Bastas & Öznacar, 2020; Demir, 2020). Achievements in education that individuals take place in learning environments are realized with teachers and textbooks in the most basic way from past to present. Textbooks are one of the most essential materials used in the course. In other words, it is the main source used in teaching a discipline and prepared for learners at a certain level. Textbooks have a great importance in the teaching of lessons. The materials that are most fundamentally related to the learning experiences of students are textbooks. When all the materials used in the lessons are considered, it can be said that the textbooks are the materials that convey almost 99% of the information in certain disciplines. The printed work that will be used in formal and non-formal education institutions of type and degree and whose subjects are prepared in line with the curriculum is defined as (Ceyhan & Yiğit, 2005; Demir, Yucesoy & Serttas, 2020). As a result of studies on textbook education, it can be said that students have an extremely important role in the development of cognitive emotional and psychomotor behaviors (Polat, 2020). Therefore, as of 2005, updates were made to the social studies curriculum and social studies textbooks.

With the emergence of educational programs and textbooks dominated by the structuring approach, social studies textbooks have emerged that allow students to understand information directly. With these books, students have created content that intuitions what definitions and meanings can be that have moved away from stereotypicals and gives students the opportunity to create meaning (Akbaba, 2013). It can be said that its importance increases in visual elements in textbooks with the configuring understanding. Visuality, which is one of the most important elements of textbooks, is especially suitable for the student level, but should be in a visual design suitable for error-free content as the individual will be interested in (Uyar, 2019).

The content of a textbook is as important in its formal design and visual elements as it is extremely important because it is extremely important that the book is intriguingly and attractively contained in the individual's mind so that the student can be interested in the discipline that the book has. When the student picks up the Book, he first does not look at the content, but the color of the book and the distribution of the paintings on the cover. In this research, the teachers who will teach in the future are 4th in the Republic of Turkey and the Turkish Republic of Northern Cyprus based on the visual design principles of the social studies textbooks used today. Class social studies are intended to evaluate textbooks and contribute to future changes to the books to be published. Based on this general purpose, answers to the following questions were sought:

- 1) How are the typographical features and text organizers of social studies textbooks in the Republic of Turkey and the Turkish Republic of Northern Cyprus?
- 2) What is the level of visual design of social studies textbooks in the Republic of Turkey and the Turkish Republic of Northern Cyprus?
- 3) What is the page design of social studies textbooks in the Republic of Turkey and the Turkish Republic of Northern Cyprus?
- 4) What is the cover design of social studies textbooks in the Republic of Turkey and the Turkish Republic of Northern Cyprus?
- 5) How are the social studies textbooks in the Republic of Turkey and the Turkish Republic of Northern Cyprus in terms of External Features for Production?

## Method

### Model of Research

In this research, the scanning model, which is one of the detimical research methods, was used. The scanning model is a model that is used to explain an existing situation that exists in the past or in the present (Karasar, 2015). In the scanning method, it is research conducted on a larger sample than other researches in which the opinions or skills, abilities and attitudes of individuals who are involved in a particular event or phenomenon are determined in the scanning model, the data are collected by the researcher using certain answer options (Büyüköztürk, 2012).

### Population and Sample

The study was conducted in the Republic of Turkey and the Turkish Republic of Northern Cyprus. Class Social Studies textbook was examined by 26 Classroom teachers and 3 Social Studies teacher candidates studying in the Turkish Republic of Northern Cyprus on a voluntary basis.

### Data Collection Tools

The "Graphic/Visual Design Principles Scale for Textbooks" created by Alpan (2004) was used. For this scale used, permission was obtained from the scale owner by e-mail before.

### Data Collection

Within the scope of the study, 29 teacher candidates were taught at various intervals in schools in the Republic of Turkey and the Turkish Republic of Northern Cyprus, along with social studies textbooks, the scale was outputted and evaluated on the scale created by Alpan (2004). There are 48 articles. This 48-point form was used when evaluating whether the books were in accordance with the principles of visual design. There are 6 sub-dimensions in this form of 48 items. These dimensions are typographical properties, text organized, design of visual elements, page design, cover design and external structure features for production.

### Analysis of Data

Within the scale applied in this study, "Yes" answers were determined as 2 points, "Partially" answers were determined as 1 point and "No" answers were determined as 0 points. During the evaluation of visual design materials, the first general evaluation of the books, then the evaluation as text design, the design part of the visual elements, page design size, cover design principles and external building properties for production were evaluated individually. At the given scales, the book was evaluated at a value of 10 points. As a result of 10 points evaluation, it is the maximum possible score value for 1 book to receive. The level of conformity assessed by scaling is as follows;

- 1) Not suitable : values from 0 to  $\leq 2$
- 2) Partially appropriate : values between  $2 > - \leq 4$
- 3) Moderately appropriate :  $4 > - \leq 6$  values
- 4) Highly suitable :  $6 > - \leq 8$  values

5) Fully appropriate :  $8 > - \leq 10$  values

In the tables carried out as a result of the research, the average of the answer given by all students to the scale was taken and the painting was made.

### Findings

**Table 1.**

*4th Grade Social Studies Textbooks' Typographical Characteristics and Distribution of Rates Received by Text Organizers*

Publisher	Typographic Self-hands	TextAng ironers
4th Grade Social Studies Textbook of the Republic of Turkey	10	10
4th Class Northern Cyprus Turkish Republic of Northern Cyprus Social Studies Textbook	8,8	5,8

Compared to the proportions received by the 4th Grade Social Studies textbooks in the typography elements dimension of the text design section of the visual design scale, the social studies textbooks operating in the Republic of Turkey were found to be completely appropriate with a ratio of 10, while the social studies textbooks in the Turkish Republic of Northern Cyprus were found to be completely appropriate, such as textbooks, and the second sub-dimension of the text design department was found to be completely appropriate in text organizations. Class Social studies textbooks were found to be completely appropriate with a ratio of 10, while the Social Studies textbooks taught in the Turkish Republic of Northern Cyprus were found to be moderately appropriate with a ratio of 5.8 as a result of the evaluation made by the teacher candidates. Accordingly, the teacher candidates determined that the book did not comply with the scale items indicating the necessity to make arrangements due to the pain of compliance with the articles related to Dictionary Arrangement and Biblio regulation, especially in the books in the Turkish Republic of Northern Cyprus.

**Table 2.**

*4th Grade Social Studies Distribution of The Proportions That Textbooks Receive according to the Design of Visual Elements*

Publisher	Design of Visual Elements
4th Grade Social Studies Textbook of the Republic of Turkey	9,8
4th Grade Turkish Republic of Northern Cyprus Social Studies Textbook	6,6

When table 2 was examined, according to the evaluation made by the teacher candidates of the articles related to the design of the visual elements of social studies textbooks, which

are the second part of the scale, the social studies textbooks of the Republic of Turkey were found to be completely appropriate with a ratio of 9.8, while the social studies textbooks in the Turkish Republic of Northern Cyprus were found to be quite suitable with a ratio of 6.6. The candidates who taught this determined that the scale requires regulations in books according to the principles of balance in design, the suitability of the dimensions of visual elements for the suitability of the country.

**Table 3.**

*4th Grade Social Studies Distribution of the Proportions of Textbooks by Page Design*

<b>Publisher</b>	<b>Page Design</b>
4th Grade Social Studies Textbook of the Republic of Turkey	8,2
4th Grade Turkish Republic of Northern Cyprus Social Studies Textbook	8,2

When table 3 was examined, the two Social Studies textbooks examined in the page design section of the visual design principles scale also received a ratio of 8.2 and were found to be completely appropriate. According to this average rate obtained from the answers given by the teacher candidates, they determined that the page number should be determined as a separate design in the page design section and the designs should be made according to the articles that determine that the gaps in the page should be used effectively.

**Table 4.**

*4th Grade Social Studies Distribution of the Proportions of Textbooks by Cover Design*

<b>Publisher</b>	<b>Cover Design</b>
4th Grade Social Studies Textbook of the Republic of Turkey	8,3
4th Grade Turkish Republic of Northern Cyprus Social Studies Textbook	7,5

When we look at the data obtained as a result of evaluating the books according to the cover design section of the teacher candidates, the Social Studies textbook in the Republic of Turkey was found to be completely appropriate with a ratio of 8.3. While the Social Studies textbook in the Turkish Republic of Northern Cyprus was found to be quite suitable with a ratio of 7.5 in the Cover design section, they stated that the cover information in the cover design section of the scale should be taken care of and that it did not partially or completely comply with the articles stating that the Cover should be designed in a more aesthetic way.

**Table 5.**

*4th Grade Social Studies Distribution of The Proportions That Textbooks Receive according to External Structure Properties for Production*

<b>Publisher</b>	<b>Average Score for External Features for Production</b>
4th Grade Social Studies Textbook of the Republic of Turkey	9,2
4th Grade Turkish Republic of Northern Cyprus Social Studies Textbook	8,4

When we look at the external structure features for production, which is the last part of the Visual Design scale, Social Studies Textbooks in the Republic of Turkey were found to be completely suitable with a ratio of 9.2. Books in the Turkish Republic of Northern Cyprus were found to be completely appropriate with a ratio of 8.4, while the average result of the answers given by the teacher candidates to the articles related to the paper quality and the durability of the book skin in the books was not partially or completely matched.

### **Discussion and Conclusion**

According to the Visual Design elements of the Social Studies textbooks in the Republic of Turkey and the Turkish Republic of Northern Cyprus, the typographic features of the Text Design department, which is the first part of the scale according to the results obtained by averaging the answers given by the teacher candidates, were found to be completely appropriate with 10 ratios, while the Social Studies textbooks in the Turkish Republic of Northern Cyprus were found to be completely appropriate with 8.8 ratios. Serttas and Demirok (2020) conducted a review of the visual design elements of story books in their study of the Story (Story) Books of Preschool Children in Terms of Conformity with Visual Design Principles, and the proportions received by the storybooks in the typographic features section were lower on average compared to the proportions of the textbooks in this study. In parallel with this conclusion, it can be said that the typographic features of textbooks are designed more effectively than storybooks.

The second sub-dimension of the text design department, text organizers, while the Social Studies textbook of the Republic of Turkey was found to be completely appropriate, while the Social Studies textbook in the Turkish Republic of Northern Cyprus was found to be moderately appropriate. Alpan (2008) in his study titled text design in textbooks, he mentioned the importance of the position and readability of textbooks on the page and stated that they should not be too dark. In this study, the 4th President of the Turkish Republic of Northern Cyprus was founded in the 20th world. It has been determined that the results obtained are parallel as class social studies support the moderate suite of textbooks.

In the design of visual elements, which is the second part of the visual design principles scale, the Social Studies textbook of the Republic of Turkey was found to be completely appropriate, while the Social Studies textbook of the Turkish Republic of Northern Cyprus was found to be quite appropriate. Becer (2015) has determined that students have higher learning conveniences in visual designs that are effectively designed in textbooks prepared for students in the study titled Communication and Visual Design, and in this research it is

seen that the teacher candidates are at the same point in their answers. In the Page Design section, which is the third part of the visual design principles scale, it was determined that the Social Studies textbooks in the Republic of Turkey and the Turkish Republic of Northern Cyprus received the same rate and were fully appropriate.

Karlı (2013) evaluated the fourth grade science and technology textbook according to the principles of visual elements design and page design and determined that there should be a textbook design that should be used effectively in parallel with the results given by the teacher candidates who support the results obtained in this research. In the cover design, which is the fourth part of the scale, the Social Studies textbook in the Republic of Turkey was found to be completely appropriate, while the social studies textbook in the Turkish Republic of Northern Cyprus was found to be very suitable by the teacher candidates. Dogan and Tug (2017) examined the successful countries in international exams and turkey's social studies in terms of the design dimension of textbooks. His results supported the results of this research and social studies in Turkey stated that the visual and color harmony of textbooks constituted an integrity and that the cover design was better in parallel with the results obtained from teacher candidates.

When the last part of the study, textbooks, were examined according to external structure characteristics for production, social studies textbooks in the Republic of Turkey and social studies textbooks in the Type Republic of Northern Cyprus were found completely appropriate by the teacher candidates. Akkoyun (2020) Class Assessment in terms of Compliance with the Content and Visual Design Principles of the Turkish Cypriot History Textbooks the job according to this study<sup>8</sup>. Class Cyprus History textbook is not entirely suitable compared to the results of this research and was found to be quite appropriate by the evaluators. Based on this result, it can be said that different results can be reached from the evaluations made by teacher candidates and experts. According to the results obtained, in the two books examined by the teacher candidates, it was determined that it was suitable by the general average in terms of visual design and was very suitable for usability.

## References

- Akbaba, B. (Ed.) (2013). *Konu alanı ders kitabı inceleme kılavuzu sosyal bilgiler*. Ankara: Pegem.
- Akkoyun, Z. (2020). 8. *Sınıf Kıbrıs Türk Tarihi ders kitabının içerik ve görsel tasarım ilkelerine uygunluk açısından değerlendirilmesi* (Unpublished master thesis). Graduate School of Educational Sciences, Near East University, Cyprus.
- Alpan, G. (2008). Ders kitaplarındaki metin tasarımı. *Türk Eğitim Bilimleri Dergisi*, 6(1), 107-134.
- Alpan, G. B. (2004). Ders kitaplarındaki grafik tasarımın öğrenci başarısına ve derse ilişkin tutumlarına etkisi. *Journal of Educational Sciences & Practices*, 3(6), 193-209.
- Becer, E. (2015). *İletişim ve grafik tasarım*. Ankara: Dost Kitapevi.
- Bicen, H., & Demir, B. (2020). A content analysis on articles using augmented reality technology and infographic in education. *Postmodern Openings*, 11, 33-44.
- Büyüköztürk, Ş. (Ed.). (2012). *Bilimsel araştırma yöntemleri*. Ankara: Pegem Akademi Yayınları.

- Ceyhan, E., & Yiğit, B. (2005). *Konu alanı ders kitabı incelemesi* (3. Baskı). Ankara: Anı Yayıncılık.
- Demir, B., Yücesoy, Y., & Serttaş, Z. (2020). Öğretmen adaylarının program okuryazarlık seviyeleri: KKTC örneği. *Uluslararası Türk Kültür Coğrafyasında Sosyal Bilimler Dergisi*, 5(1), 28-37.
- Demir, B. (2020). Evaluation of social studies teaching textbooks. *International Journal of Learning and Teaching*, 12(1), 17-29.
- Doğan, Y., & Tuğ, O. (2017). Uluslararası sınavlarda başarılı ülkeler ve Türkiye'nin sosyal bilgiler ders kitaplarının tasarım boyutu açısından incelenmesi. *Uluslararası Sosyal Bilgilerde Yeni Yaklaşımlar Dergisi*, 1, 56-79.
- Karasar, N. (2015). *Bilimsel araştırma yöntemleri*. Ankara: Nobel Yayın Dağıtım.
- Karlı, E. (2013). Dördüncü sınıf fen ve teknoloji ders kitabının görsel öğelerin tasarımı ve sayfa tasarımı ilkelerine göre değerlendirilmesi. Yayınlanmamış Yüksek Lisans Tezi. Uşak Üniversitesi, Sosyal Bilimler Enstitüsü, Uşak.
- Nacak, A., Bağlama, B., & Demir, B. (2020). Teacher candidate views on the use of Youtube for educational purposes. *Online Journal of Communication and Media Technologies*, 10(2), 1-9.
- Öznacar, B., Yücesoy, Y., & Demir, B. (2020). Okul yöneticilerinin bilgi, medya ve teknoloji becerilerinin değerlendirilmesi. *Uluslararası Türk Kültür Coğrafyasında Sosyal Bilimler Dergisi*, 5(2), 94-102.
- Polat, M., (2020). *2005 ve 2017 sosyal bilgiler öğretim programlarına göre yayınlanmış 5.sınıf sosyal bilgiler ders kitaplarının karşılaştırmalı olarak incelenmesi* (Unpublished master thesis). Necmettin Erbakan University, Graduate School of Educational Sciences, Konya.
- Serttaş, Z. & Sakallı Demirok, M. (2020). Okul öncesi dönem çocuklarının hikaye (öykü) kitaplarının görsel tasarım ilkelerine uygunluk açısından incelenmesi. *Route Educational and Social Science Journal*, 7(53), 155-170.
- Uyar, M. (2019). *2005-2017 öğretim programlarında kullanılan 5. sınıf sosyal bilgiler ders kitaplarının karşılaştırılması: Meb yayınları örneği* (Unpublished master thesis). Dokuz Eylül University Graduate School of Educational Sciences, İzmir.
- Yücesoy, Y., Demir, B., Bağlama, B., Baştaş, M., & Öznacar, B. (2020). Secondary education teachers and school administrators' views on positive organizational climate. *Near East University Online Journal of Education*, 3(1), 12-21.



## CONTENT ANALYSIS STUDY FOR THE STUDIES DONE ON PARENTAL EDUCATION

Yasemin Sorakin<sup>1</sup>, Yağmur Çerkez<sup>2,\*</sup>

<sup>1</sup>Department of Guidance and Psychological Counseling, Atatürk Faculty of Education, Near East University, [yasemin.sorakin@neu.edu.tr](mailto:yasemin.sorakin@neu.edu.tr)

<sup>2</sup>Department of Guidance and Psychological Counseling, Atatürk Faculty of Education, Near East University, [yagmur.cerkez@neu.edu.tr](mailto:yagmur.cerkez@neu.edu.tr)

\*Correspondence: [yasemin.sorakin@neu.edu.tr](mailto:yasemin.sorakin@neu.edu.tr); Tel.: +90 3924440938

### Abstract

The aim of this study is to analyze the studies which were carried out for the education of both mother and father in respect of content analysis. This research is a document review type study. The current study is limited to and analyzed by 150 articles that were published in the database of Web of Science, Scopus, EBSCO and ULAKBIM between the years 2008-2018. The articles were evaluated in terms of year of publication, country, method and sample group in accordance with the main objective. Based on this analysis, it was detected that the studies that were carried out regarding the education of mother is higher than the education of father. Furthermore, it was detected that the studies were carried out in the year 2017 mostly. Considering the analyses that were carried out, it was observed that mostly mother, subsequently father and child groups as sample groups were included in these studies. It was also detected that the studies were carried out mostly as quantitative research method. Moreover, it was specified in the reviewed databases that the studies regarding the issues of education of mother and father were implemented in America mostly.

**Keywords:** Mother's education, father's education, parental education.

### Introduction

Family is the smallest social unit which consists of a mother, a father and child/children and can be affected both positively and negatively from each other. Baby comes into the world with inheritable features taken from both mother and father. The baby begins to interact with mother and father and then with the environment beginning from the moment that it opens its eyes to the world. The child grows through the attitudes and behaviours of his mother and father, and living conditions ensured by them (Darga 1999, Özel & Zelyurt, 2016,). Furthermore, the child obtains his most significant features, attitudes and behaviours by taking his mother and father as models. Particularly, the relationship of 0-6 aged, pre-school period children with their mothers and fathers is pretty important. It is known that the communication of parents with each other apart from their children has significant effects on children.

The family has an important role in raising individuals who are growing rapidly and adapting to the changing life (Sorakin, Çerkez & Altınay, 2019). Considering that children receive their first education in their families, the importance of parental education stands out. The parents need to educate, improve themselves with regard to parenting and empower their communication with their children. Particularly parental education is very important in terms

of the development of children whose mother and father are still together in pre-school period (Özel & Zelyurt, 2016, Güneş, 2017). Early childhood period which involves the ages 0-6 is one of the most critical periods of life in which personality takes shape, basic skills as well as many habits are gained, moreover, children are mostly open to the stimulus that may come from the environment.

The necessary environment can be provided to children to be raised up and developed healthily through good education to be provided to the parents at this period. Good foundations to be laid and experiences obtained at this period will be positively effective for children in many aspects of their life (Erdiller, 2010; Kim, 2018).

At the present time, the importance of parental education is understood better and there is a consensus on the idea that parents should be trained first for resolving behavioral problems in children, and for developing more healthy personality (Ruiz-Ortiz, Braza, Carreras & Munoz, 2017). Based on the importance of parental education in educational institutions, there is a gradual increase in educational programs that are provided to the parents in order that they could communicate with their children consciously (Çağdaş & Seçer, 2005).

It can be seen that some patterns from past to present and charged on women start to change by the development of society and beginning of women to work. Accordingly, it is known that fathers take much more responsibility for the care of children (Gürşimşek & Kefi, 2007). Identification of paternity which begins the time when man learns that his wife is pregnant and obtained within a period of three years has an important role in the development of the child (Ergin & Özdilek, 2014). It is effective in the social, emotional and cognitive development of a child that the father spends quality time with his child, contributes to the care and responsibility of his child and interacts with his child (Bekman, 2001).

Education of parents in the societies that are aware of the importance of the interaction of mother and father in the development of the child continues by becoming spread recently. Even though the program is called as Parental Education, Parental School, Family Education Program, the participants are mostly mothers in such programs (Ünüvar, 2008). In reviewing the literature, it can be observed that there is not any program organized only for fathers in our country, and such programs are scarcely any in Turkey. As the pre-school period signifies the future life style of the child, it has a major role in his life. It is believed that fathers who participate in father education programs and similar educations could satisfy developmental needs of children. A healthy interaction which reforms between father and child in pre-school period will let raising more healthy children and create more qualified communities (Kandır & Alpan, 2008).

### **Aim of the Research**

The main objective of this research is to detect the trends in the researches carried out on the education of mothers and fathers organized for the parents who have children in pre-school period. In the same vein, this research is aimed to be a resource for the researchers who would wish to conduct a research on parental education. Furthermore, no study which is intended for investigating the trends of parental education was encountered before, when the literature was reviewed. Such a gap in the literature is aimed to be filled through this study. The following questions tried to be answered to reach the objective of the research:

- In which years do the studies range regarding “education of mother” and “education of father” who are included in the study?

- In which countries were the studies conducted regarding “education of mother” and “education of father” who are included in the study?
- What is the sample group of the studies conducted regarding “education of mother” and “education of father” who are included in the study?
- What is the method of the studies conducted regarding “education of mother” and “education of father” who are included in the study?
- How is the distribution of the study group according to research model regarding “education of mother” and “education of father” who are included in the study?

### **Methodology**

This research was conducted by using content analysis method which is one of the qualitative research types. According to Cohen, Manion and Morrison (2007), content analysis can be identified as the process of summarizing and indicating the basic contents of written information in hand and the messages they comprise. Correspondingly, the present articles regarding the issue were investigated in four databases, and the trends of the researches conducted on the education of mother and father were tried to be described. The results of this analysis will give us information on the trends regarding the issues of parental education in the recent times.

### **Data Collection**

In order to determine the actual trends of the researches on parental education, the articles which were published between the years 20018-2018 in the databases of Web of Science, Scopus, EBSCO and ULAKBIM were analyzed. Excluding the books and analyses, only articles were investigated carefully in order to restrict the research. The limitation was done by the key words “education of mother” and “education of father” while doing content analysis study. The researches not related to the subject were excluded from the study. Furthermore, no languages other than English and Turkish were included in the study as the understanding of the researcher was limited. Within this framework, the content analysis was carried out in the direction of the following criteria.

- Year of the research
- Country where the research was conducted
- Type of the research
- Sample group of the research
- Database of the research

### **Data Analysis**

All data obtained from the detailed document analyses for each article was recorded, the data was grouped to the indicated criteria and transferred to the computer by using the latest SPSS program, also, the same program was used to realize statistical analyses and the percentages and frequencies were calculated. They were grouped and examined in terms of several variables and finally, all findings were interpreted.

## Results

As a result of the review of Web of Science, Scopus, EBSCO and ULAKBIM databases, 150 studies that were conducted between the years 2008-2018 were reached. In this section, analysis results that were performed accordingly with the aim of the research were shaped in tables and so interpreted according to the selected criteria.

### Publication Year of the Studies Conducted on the Education of Mother and Father

The numbers of the articles that were published on the education of mother and father and their distribution according to years are indicated in the graphic in Table 1 in the magazines of Web of Science, Scopus, EBSCO and Ulakbim databases between the years 2008-2018. Accordingly, it was detected that as the number of articles published in 2008 is 5, there is an increase in this number until 2015 and there is decrease in the studies in 2015, and the number became 25 in 2017 by concentrating on these studies as of 2015. It was observed that the least profound studies were limited to only 5 studies in 2008 and the most profound studies were performed in 2017. Taking into consideration the study groups, it was detected that the most profound studies regarding mothers were conducted in 2016 and the least profound studies were performed in 2010. It can be seen in Table 1 that the studies about the education of father are less when compared to the education of mothers, but the studies conducted on the education father in 2017 are more than the studies conducted on the education of mother.

**Table 1.**

*Publication Year and Study Groups of the Studies Conducted on the Education of Mother and Father*

Study Group	Year											Total
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Mother	3	6	2	6	3	11	7	6	12	10	2	68
Father	0	4	2	3	1	4	8	1	6	11	0	40
Mother and Child	0	0	3	3	0	0	1	0	1	1	0	9
Father and Child	2	1	0	4	6	2	3	4	1	1	0	24
All	5	12	7	7	10	19	20	13	21	25	2	150
Mother and Father												

### Countries Where the Studies are Conducted on the Education of Mother and Father

An investigation was made to understand in which countries the studies were conducted for the subjects of parental education between the years 2008-2018. Accordingly, it was detected that the studies with regard to the education of mother and father were carried out mostly in America (35%), secondly in Turkey (16%) and thirdly in England (14%). However, it was discovered that there are studies in limited numbers on the education of mother and father in Canada, Germany, Korea, China, Malaysia, Belgium, Iran, Africa, India and Switzerland.

### Research Model of the Studies Conducted on the Education of Mother and Father

The research model which was used in the studies conducted for the subjects of parental education is provided in Table 2. Thus, a great majority of the studies was realized through qualitative research model. In addition, less preferred research model in the studies is the mixed method, as it can be seen in Table 2.

**Table 2.**

*Distribution of the Studies Conducted on the Education of Mother and Father according to Research Model*

Research Type	f	%
Quantitative	83	55.3
Qualitative	49	32.7
Mixed	18	12

### Databases of the Studies Conducted on the Education of Mother and Father

Distribution of the studies that are conducted on the education of mother and father in terms of databases are provided in Table 3. Accordingly, it was observed that the majority of the studies were published in the database of Web of Science. It was detected that the least studies regarding the subject were published in Ulakbim.

**Table 2.**

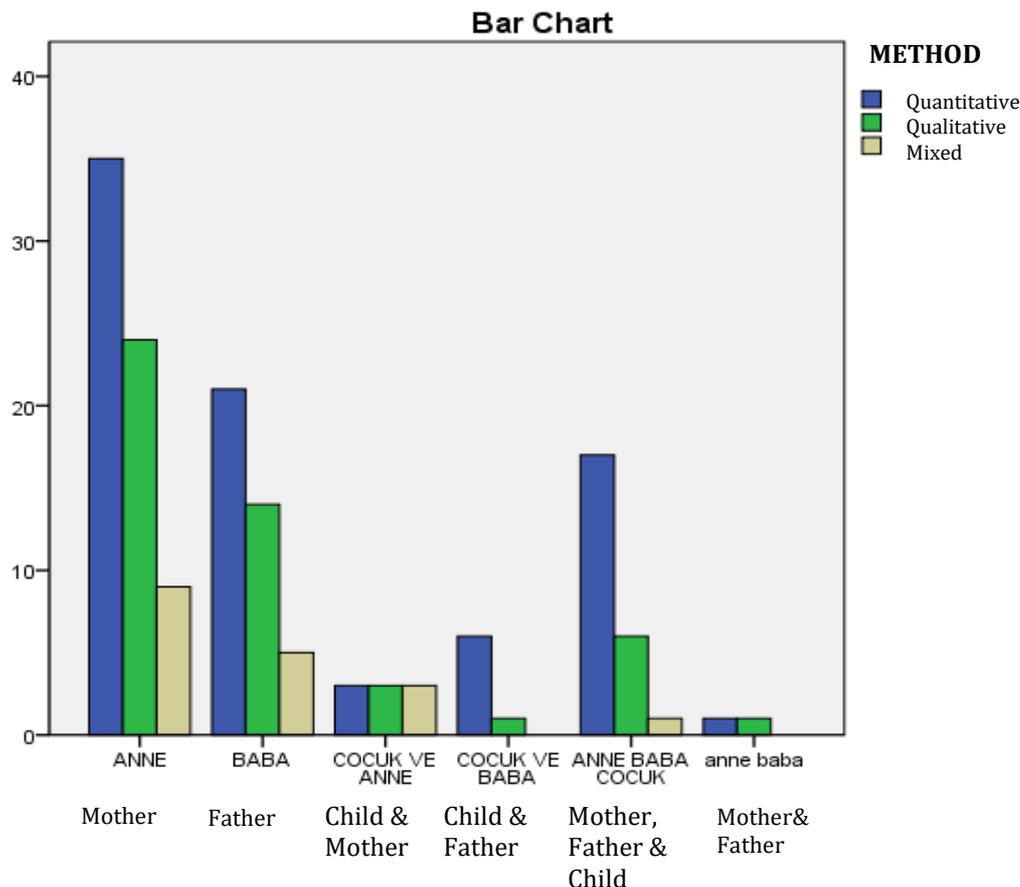
*Distribution of the Studies Conducted on the Education of Mother and Father according to Databases*

Databases	f	%
Web of science	95	63
Scopus	35	23
Ebsco	12	8
Ulakbim	8	5

### Distribution of the study group regarding the studies conducted on the education of mother and father according to research model

It was identified in the content analysis study which was made on the subject of parental education that the researches were conducted on the education of mother in majority and the ones conducted on the education of father remained in the second rank. Considering the graphic, again it was detected that the studies that were conducted on mother-child, father-child and mother-father-child were less focused. When the research model is investigated according to the study groups, it was observed that the quantitative research model is generally preferred on the education of mother and father, and the qualitative research model remains in the second rank, also, mixed method research model is preferred in a limited number. Finally, it was observed that the mixed method is not preferred in the studies where mother and father are embraced together.

**Figure 1.**  
*Study Group*



### Discussion and Conclusion

When the articles that were accessed during the study were investigated according to the criteria specified, it was observed that the studies on the education mother and father were published at least once a year in the related database between the years 2008-2018. It was detected between those years that the studies that were prepared with regard to the issue increased and actualized consistently between the years 2013-2017 mostly, decreased rapidly only in 2015 and increased again. When the data in four databases was examined, it was seen that the least studies were carried out in 2018. Based on these findings, the importance of the parental education in the development of a child is indisputable. This period should be ensured to be more quality through the education to be given to the families in pre-school period. Children take their first education in the family, and the parents are the first educators of their children (Aksoy & Arabacı, 2005). Based on this, it is believed that increasing the trainings which are prepared for mothers and fathers are important.

In addition, it was demonstrated that the researches carried out in this field were conducted through quantitative research model mostly and the least preferred research model was mixed method. It demonstrated that the researches were conducted. This finding refers to the fact that mixed researches in which both quantitative and qualitative findings were used were not sufficiently used. Reviewing the literature, it can be seen that mixed method has

started to be preferred more in the researchers conducted on other fields today, and this method is believed to be more efficient in augmenting the validity and reliability of the researches particularly (Azorin & Cameron, 2010).

Vast majority of the studies conducted on the education of mother and father were based on United States and Europe. It was detected to be realized. Besides, it was detected that the studies on the education of mother and father have increased recently in Turkey.

Furthermore, it was confirmed through this study that studies were conducted revealing mostly mothers occupy place as sample group in the studies conducted on the education of mother and father, whereas the ones where mothers and fathers are together were the least. In addition, it was approved upon the analyses performed that the studies conducted on fathers only have increased recently. It can be seen that the changes in social life alter the role of paternity. While the social and cultural expectations in the past were directed only to the work and home care of father, today they have become oriented to take part in the life of children (Kuzucu, 2011). This finding stands for important effects of the studies on the education of father for the development of children. However, increasing the number of researches in which the mother, father and child are embraced together has an important role in the development of child. The positive effects of parental education program applications were revealed through the studies conducted on the development of children (Can Yaşar, 2001; Gürşimşek, 2003).

## References

- Arabacı, N., & Aksoy, A. B. (2005). Okul öncesi eğitime katılım programının annelerin bilgi düzeylerine etkisi. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 29(29), 18-26.
- Azorin, J. M., & Cameron, R. (2010). The application of mixed methods in organisational research: A literature review. *Electronic Journal of Business Research Methods*, 8(2), 95-105.
- Bekman, S. (2001) Genel değerlendirme ve geleceğe yönelik öneriler. In *Çocuğun Yaşamında Babanın Rolü ve Önemi Sempozyum Raporu*. İstanbul: Anne Çocuk Eğitim Vakfı Yayını.
- Can Yaşar, M. (2001). *Okul öncesi eğitim kurumlarında ailenin eğitime katılımı: Gazi Üniversitesi Anaokulu-Anasınıfı Öğretmen El Kitabı*. İstanbul: YA-PA.
- Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education* (6th ed.). New York, NY: Routledge.
- Çağdaş, A., & Seçer, Z. Ş. (2005). *Anne-baba eğitimi*. Konya: Eğitim Yayınları.
- Darga, H. (1999). *Farklı sosyo-ekonomik düzeydeki babaların altı-on-ondört yaşlarındaki çocuklarının eğitimine katılımlarının değerlendirilmesi* (Unpublished master thesis). Gazi University Graduate School of Social Sciences, Ankara.
- Erdiller, Z. B. (2010). Erken çocukluk eğitiminde temel kuram ve yaklaşımlar. *Erken Çocukluk Eğitimi*, 56-90.
- Erdoğan, Ö., & Zelyurt, H. (2016). Anne baba eğitiminin aile çocuk ilişkilerine etkisi. *Sosyal Politika Çalışmaları Dergisi*, 36, 9-34.
- Erdoğan, Ö., & Zelyurt, H. (2016). Anne baba eğitiminin aile çocuk ilişkilerine etkisi. *Sosyal Politika Çalışmaları Dergisi*, 16(36), 9-34.

- Ergin A, & Özdilek, R. (2014). Değişen babalık rolü ve erkek sağlığına etkileri *Hemşirelikte Eğitim ve Araştırma Dergisi*, 11, 3-8.
- Güneş, N. (2017). *0-6 yaş arası çocukların gelişim düzeyleri ile annelerinin aile işlevleri ve yaşam doyumları arasındaki ilişkinin incelenmesi* (Unpublished master thesis). Hacettepe University Graduate School of Health Sciences, Ankara.
- Gürşimşek, I., Girgin, G., Harmanlı, Z., & Ekinci, D. (2003). *Çocuğun eğitiminde aile katılımının önemi (bir pilot çalışma)*. Ankara: Kök Yayıncılık.
- Gürşimşek, I., Kefi, S., & Girgin, G. (2007). Okul öncesi eğitime babaların katılım düzeyi ile ilişkili değişkenlerin incelenmesi. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 33, 181-191.
- Kandır, A., & Alpan, U. Y. (2008). Okul öncesi dönemde sosyal-duygusal gelişime anne-baba davranışlarının etkisi. *Sosyal Politika Çalışmaları Dergisi*, 14(14), 33-38.
- Kim, S. W. (2018). How and why fathers are involved in their children's education: Gendered model of parent involvement. *Educational Review*, 70(3), 280-299.
- Ruiz-Ortiz, R., Braza, P., Carreras, R., & Muñoz, J. M. (2017). Differential effects of mother's and father's parenting on prosocial and antisocial behavior: Child sex moderating. *Journal of Child and Family Studies*, 26(8), 2182-2190.
- Sorakin, Y., Altınay, Z., & Cerkez, Y. (2019). Father psycho-education program for developing interaction with children: Disability program development. *International Journal of Disability, Development and Education*, 66(5), 528-540.
- Ünüvar, P. (2008). *Babaların 3-6 yaş grubu çocuklarıyla geçirdikleri zamanın niteliğini belirleme ve geliştirme* (Unpublished doctorate thesis). Selçuk University Graduate School of Sociaş Sciences, Konya.