

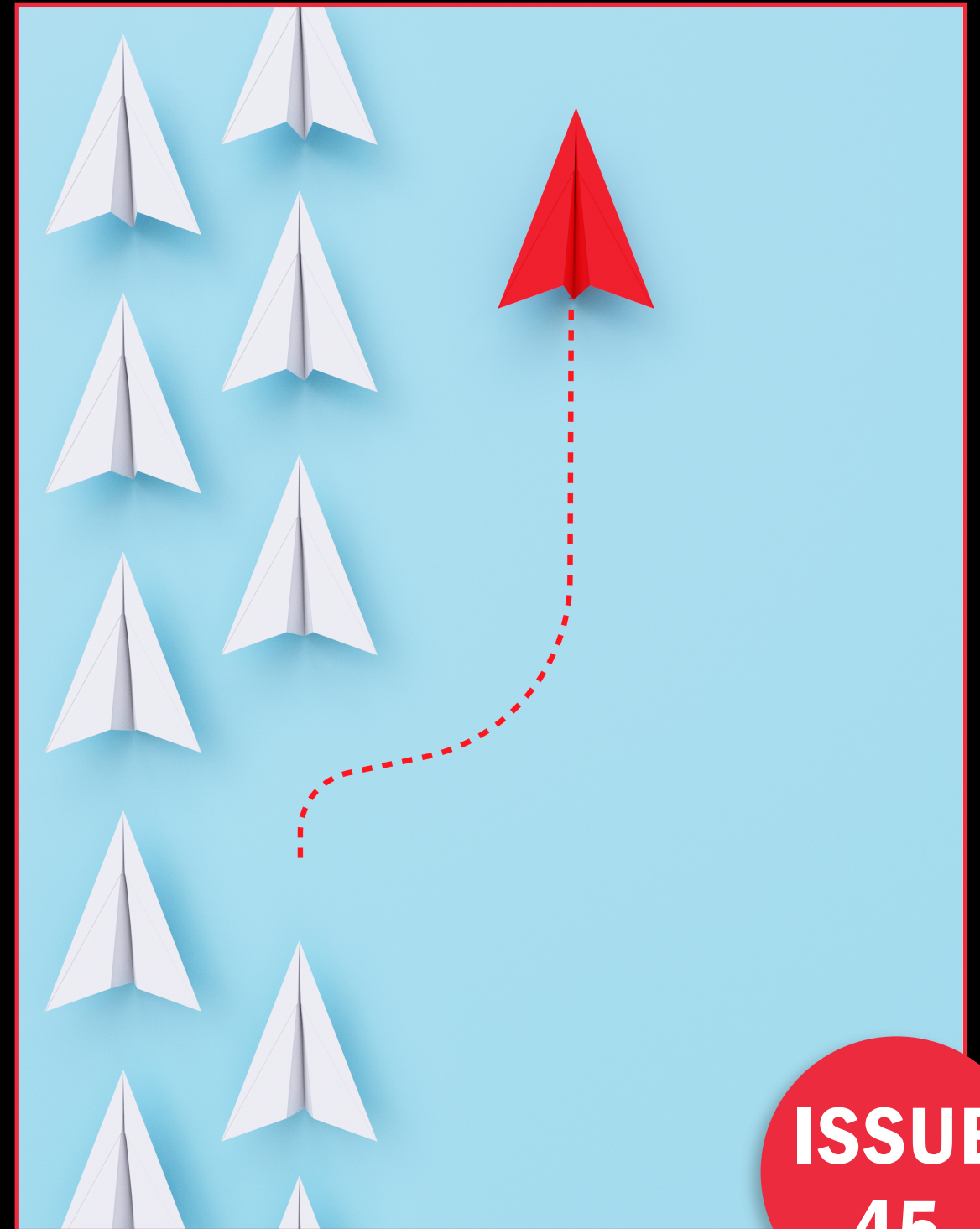
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Editorial

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RESEARCH ARTICLE

Users' Emotional Experiences in Online Shopping: Effects of Design Components

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Abstract

This study aimed to investigate whether users experience an emotional change or not when they focus on design components on e-commerce web pages during shopping process. In this context, a usability study was conducted with participants involved in a real shopping process. In the study, pulse, EEG, Galvanic skin response, eye movements and facial expressions data were collected during shopping process. A total of 32 participants took part in the study. According to the three most focused design components on the web page, "menu and categories", "advertisement" and "search", it was statistically analyzed whether there was a change in the emotions of the participants. As a result, when the participants focused on the "menu and categories" and "advertisement" component, a difference was obtained in the pulse data. In addition, there was a difference in the EEG data compared when they focused on the "menu and categories" and "search" components. Finally, significant differences were also obtained from EEG data when they focused on the "Advertisement" and "Search" components.

Key Words: EEG, Pulse, E-Commerce, User Experience, Emotion Change.

Öz

Bu çalışma, kullanıcıların, e-ticaret web sayfalarında alışveriş sürecinde tasarım bileşenlerine odaklandıklarında duygu değişimini yaşayıp yaşamadıklarını araştırmayı hedeflemiştir. Bu bağlamda, gerçek bir alışveriş sürecine dâhil olan katılımcılar ile bir kullanılabilirlik çalışması gerçekleştirilmiştir. Çalışmada, alışveriş süresince katılımcıların nabız, EEG, deri iletkenlik, göz hareketleri ve yüz ifadeleri verileri alınmıştır. Gönüllülük temelinde yapılan çalışmada toplamda 32 katılımcı yer almıştır. Web sayfasında yer alan, en çok odaklanılan üç tasarım bileşenine, "menü ve kategoriler", "reklam" ve "arama", göre katılımcıların duygu durumlarında değişiklik olup olmadığı istatistiksel olarak analiz edilmiştir. Sonuç olarak katılımcıların "menü ve kategoriler" ile "reklam" bileşenine odaklandıklarında nabız verilerinde farklılık elde edilmiştir. Ayrıca, "menü ve kategoriler" ile "arama" bileşenlerine odaklandıklarında karşılaştırılan EEG verilerinde farklılık tespit edilmiştir. Son olarak "Reklam" ve "Arama" bileşenlerine odaklandıklarındaki EEG verisi karşılaştırıldığında da anlamlı farklılıklar elde edilmiştir.

Anahtar Kelimeler: EEG, Nabız, E-Ticaret, Kullanıcı Deneyimi, Duygu Değişimi

Citation:

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Introduction

With the improvements in web technologies, websites have become platforms that offer shopping opportunities over the internet, which is called as e-commerce. E-commerce websites operate similar to the traditional shopping environments. Customer reviews are very important for e-commerce websites; since the site serves as similar to traditional shops. Usability studies are conducted to take customers opinions about websites with user experience studies which are performed with various methods and allow the evaluation of user interfaces. Usability tests have been classified according to especially data type in the literature.

In the scope of this study, it is aimed to carry out a user experience study for the evaluation of e-commerce websites. The main research problem of the study is "to identify the changes in the emotional states of the participants when they focus on the design components on e-commerce websites". According to the previous works, it is important to reflect the emotional needs of the users to the e-commerce web page designs (Guo, Cao, Ding, Liu & Zhang, 2015). To determine positive and negative emotions (such as curiosity and disappointment) in usability studies is important in identifying and eliminating usability problems (Ritonummi, 2020). It is predicted that examining the changes in emotions according to design components will contribute to make inferences for improving website designs. This study got emotion data with more than one method which contributes to the originality of the study.

In order to conduct the user experience study, first of all, an e-commerce website was determined and the necessary permissions were taken from its administration of the website. Emotion data was obtained via EEG, skin conductivity sensors, face coding (with a camera), pulse and eye tracking tools. During the experiment, the participants involved in a real shopping process. The shopping process includes the tasks of finding a product, adding the product to the cart, and making the purchase. During the experiments, EEG, skin conductivity, face coding and pulse data obtained

when participants focused on 3 design components ("menu and categories", "advertisement" and "search") and the data was analyzed with statistical methods.

Conceptual Framework

E-commerce Definition

E-commerce concept has several definitions in the literature. Simply, it is defined as "purchasing and selling products and services over the internet" (Jewels & Timbrell, 2001). Similarly, e-commerce can be referred as making business relations, communication between producers and consumers via a website (Laudon & Traver, 2011). In another definition conducted by Nissen (1997), it is defined as "a process flow related to a commercial relationship or transaction, including activities such as purchasing, marketing, sales and customer support". Based on these definitions, it is clear that e-commerce does not refer to only buying and selling transactions, but also has other dimensions.

Although the foundations of e-commerce date back to the 1980s, shopping over internet and e-commerce applications have started with the use of World Wide Web (www). Especially the foundation of Amazon can be shown among the first important examples of e-commerce. Many factors have influenced the development of e-commerce over the years. In addition to technological developments, factors such as focusing on the customer and improving customer relations, consumer preferences, organizational changes, and easier comparison of products over the internet have also contributed to the development of e-commerce (Coşkun Karadağ, 2005; Erserim, 2019).

E-commerce has various advantages and disadvantages. While product development, testing, providing customer support, and especially quick return to customers are seen as advantages (Erbaşlar & Dokur, 2008), financial problems and legal regulations are seen as disadvantages. Data protection is one of its biggest disadvantages, especially in terms of cost and changing requirements.

E-commerce Website

In e-commerce, the shopping process is carried out as virtual transactions over the e-commerce website or other interfaces. While traditional consumers are affected from store design, colors, sound, and light, consumers in the virtual environment are affected from interface design and appropriate navigation environment on the e-commerce web page (Koufaris, 2002). This comparison has been placed literature, and the website design and its content has been seen as equivalent to the physical store environment. Lohse and Spiller (1998) has mentioned these similarities with various pairings. According to them, when a traditional store is compared to an e-commerce website, the sales representative in a store is equivalent to the search function, product descriptions and online support service of an e-commerce website; the traditional store window is equivalent to the home page of the website and the hierarchical structure of the website is equivalent to the store floors. Similarly, the number of people visiting the store is equal to the number of people visiting the website.

E-commerce website designs and ease of use are important for businesses that carry out their commercial activities in the virtual environment for not to lose their customers, which are their most valuable asset. The design of a customer-focused website is important, because poorly designed websites result in reduced profits to for online businesses (Nielsen, 2002). For an e-commerce website to be successful, it must be visually well designed, considering color factors and placing design components. The customer should be able to easily access the product they are looking for and make product comparisons when necessary. However, there are some measurement and test

methods to determine to what extent these suggestions can be fulfilled. Such methods are frequently used especially in usability studies.

User Experience and User-based Testing

User experience means knowledge gained from repeated efforts. It occurs when the user interacts with the web environment. User experience consists of products, system and interface. The experience should be observable and measurable (Tullis ve Albert, 2013). In user experience, each behavior and action taken is discussed in detail and user expectations are tried to be determined. We can express the shopping process on an e-commerce site as an example of user experience. Shopping from an e-commerce page is done by performing similar transactions each time and creates similar experiences. The user comes to the e-commerce site, finds the desired product (sometimes by using a search engine or browsing a category), fills in the address and credit card information fields on the payment page, and the e-commerce site confirms that the product will be sent to the user. It creates a series of small and large decisions experience about how the e-commerce website looks, how it guides the user, and what it allows to use to take action. In user experience studies, the focused subject, experimental process, sample group, collected data and obtained results are all real. Therefore, these studies are very important because they are completely based on the phenomenon of reality.

User experience is based on visual design, knowledge architecture, design, usability, research and content strategy. The requirements of user experience are presented in Figure 1 as 4 items (Basaran, 2014).

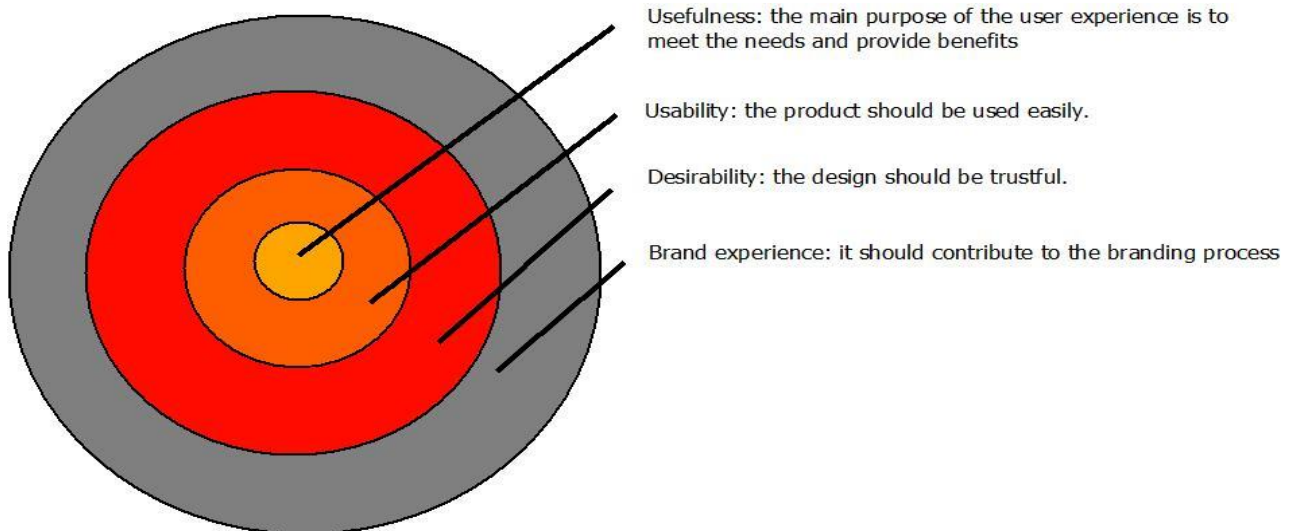


Figure 1. The requirements of user experience

In user experience, various tools and software are used to conduct user-based tests. In the scope of this study, the following techniques were used: eye tracking, brain waves tracking, controlling

pulse level, measuring skin conductivity level and facial action coding system. These tests are summarized in Table 1.

Table 1. User-based Tests

Technique	Description
Eye tracking	Eye tracking technique is one of the mostly used methods in usability studies. It provides data on which points the users look at while interacting with the tool/interface, how long they look at, and in which trajectory they navigate (Nakatani ve Pollatsek, 2004). Eye tracking can be used in many areas such as the design of web pages, visual evaluation, mental processes, action sequences, speech, perception, advertising and shopping (Baş ve Tüzün, 2014).
Brain waves tracking	"Electroencephalography" (EEG) is the method to measure electrical activity in the brain. It emerged between 1925 and 1930. In the tests performed with EEG, an electrode cap placed on the scalp of the user or earphone are used for measurement of brain waves. After the experiment process ended, data is obtained by measuring the signals. Lastly, data is analyzed, interpreted and estimated (Sadedil ve Uraltaş, 2018).
Pulse level tracking	Pulse (heart rate) is the value which is used to express how many times the heart beats in a minute. It can be simply measured with the help of fingers and a watch. The pulse is affected by several factors such as exercise, anxiety, excitement, fear, and body temperature. Resting pulse is measured while sitting or lying down calmly. The normal pulse for anyone over the age of 10 is between 60 and 100 beats per minute (bpm) (Medical Academy).
Measuring skin conductivity level	The galvanic skin conductivity (GSR), is also known as the electrodermal response (EDR), psychogalvanic reflex (PGR). GSR can be used to measure the reactions of the skin to the pleasurable and stressful effects by following the changes in the moisture content of the skin, including palms and fingertips. GSR data are affected by conditions such as arousal, stress level, deep breathing, and question answering (Grimnes, 1982; Tayfun & Öçlü, 2015).
Facial action coding system	Facial action coding system (FACS) detects the neutral, positive and negative emotion values from 23 muscle groups on the face in various emotion types such as sadness, fear, joy, stress, surprise and reveals the specific emotions of the user. Emotions are evaluated in real time; the head and eye movements are tried to be interpreted together with facial activities, and each movement has a numerical equivalent (Farnsworth, 2019). A video camera is used in the measurement, and then, during the analysis phase, these recordings are divided into smaller pieces to capture instant facial expressions. The technique of identifying facial expressions is often used in advertising testing and movie trailers testing.

E-commerce User Experience Studies in the Literature

There are studies conducted with different user tests in the literature (Yadava et al., 2017; Çakar et al., 2017; Destari et al., 2020). For example, in a study that used EEG signals in neuromarketing, it was discussed whether consumers like the

products or not. As a result of this study, a framework for predicting the user's choice preference, developing a market strategy and predicting market success is presented. Also, this study suggested that using eye tracking with EEG will provide more realistic and consistent parameters (Yadava et al., 2017). In another study conducted by Coşkun and Yücel (2021), the

perceptions of the participants towards e-commerce websites were evaluated by using EEG method. In their study, they mentioned the elements that should be paid attention during e-commerce website design as menu, simple appearance, text, site color and accessibility.

In another study, Çakar et al. (2017) discussed users' first product search processes of on e-commerce sites and conducted a user experience study with male participants using neurometric and biometric research methods. In that study, search experience, use of category menu, use of filters, sorting and product listing processes are highlighted. User are affected negatively from home page navigation, search button, filtering, scrolling up and down the page components. They stated that making improvements for these problematic elements will increase the usability level of the page. In addition, the participants were disturbed from some issues such as the filtering menu was not clear and the relevant buttons could not be found easily. They suggested to conduct multimodal studies in the field of usability by using traditional and neuroscientific methods together to make more clear interpretations.

Oliveira, Afonso, and Pinto (2020) on the other hand, emphasized that home page of websites should be the primary target for improvements in usability and accessibility, because home page of websites is the entry point for the user. They also stated that the continuous improvement of websites improves user experience and reduces the digital divide that people could experience.

Eye tracking method is widely used as a research method in e-commerce user experience studies. With the eye tracking method, it is possible to access the information "which components were viewed more during a certain task". In this way, it can be determined which components are interacted more on the page (Wong, Bartels & Chrobot, 2014). In a study conducted by Dospinescu and Parcă-Robu (2017) with eye-tracking method in the field of e-commerce, it was revealed that the efficiency and effectiveness of pages with high interaction will be better than others.

Emotional factors are one of the topics covered in user experience research. The emotional needs of the users during the experience have also become a part of the user experience studies. For emotion evaluation in user experience, emotions after use or emotions before use can be considered (Hassenzahl & Tractinsky, 2006; Ritonummi, 2020). Destari et al. (2020) revealed that the quality of the website positively affects the shopping feelings and the customers are affected by the attractive designs and so their shopping behaviors are triggered. In another study, emotional experiences during online shopping were discussed in 3 different dimensions: subjective emotional evaluations, eye movements and physiological responses (Guo, Cao, Ding, Liu & Zhang, 2015). These dimensions were compared over the shopping experience on two different websites. According to the results obtained from the study, there was no difference in physiological responses (GSR, RSP and SKT) while shopping from different websites. However, significant differences were obtained in subjective emotional evaluations and some indicators of eye movements. It is important that the emotional needs of the users should be reflected to designs, but it is recommended to use multimodal measurement methods since emotions are difficult to measure.

There are different factors that affect website users such as complexity, usefulness and content. Website design is one these factors. Website design should be aesthetic, which increases the effectiveness of the website. Therefore, the quality of the website also increases (Clarke & Hattingh, 2020). It has been revealed that different design components affect users on e-commerce web pages. Safavi (2009) stated in their study that personalization, registration and log out, information presentation, shopping cart and payment system components are necessary components for the usability of e-commerce websites.

Methodology

Aim and Scope of the Study

The aim of this study is to examine the changes in the emotional states of the users while focusing on design elements in e-commerce websites. The following research question was tried to be answered: "Does the e-commerce interface design have an effect on the user's emotions change during shopping process?". To answer this research question, user-based tests were applied within the scope of the components used in the e-commerce page interface design. During the test, eye tracking device, EEG, pulse monitor, GSR and a high-resolution camera for facial expressions were used. The pulse level, skin conductivity level, facial expressions and variability in brain waves were analyzed when the users focused on the design components.

Population and Sample Group

The population of the study consists of customers who shop from e-commerce sites using the web interface. The sample group of the study was

selected with the maximum variation sampling method, which is one of the purposive sampling methods.

Two participants were excluded from the analysis due to the problems experienced during data collection process. A total of 32 participants took part in the study and their data was analyzed.

Data Collection Tools

Various data collection tools were used in the study. First of all, EEG was used to measure the brain waves of the participants and a pulse measurement device was used to take the heart rate values per second. An eye tracker was used to monitor eye movements, a camera was used to interpret facial expressions, GSR was used to measure skin conductivity and emotion changes, and screen recording was used to follow the tasks. The data as taken from all data collection tools on a per second basis. The devices used and their details are presented in Table 2.

Table 2. Data Collection Tools

Data collection tool	Details
EEG	NeuroSky MindWave Mobile device was used to measure brain waves. The brain waves of Delta, Theta, Alpha, High Alpha, Low Beta, High Beta, Low Gamma and High Gamma were measured every second during the shopping period of the participants on the e-commerce website with sensors. Delta brain waves were excluded from evaluation since they are meaningful in deep sleep, unconscious and isolated sleep from the outside world. In addition, theta and alpha wave measurements, which are significant in very deep relaxation and deep hypnosis states, were not included in the analysis too. In this context, Beta and Gamma waves were used in further analysis.
Pulse Measurement Device	The Polar OH1 Pulse Measurement device, which provides heart rate monitoring through optical detectors, was used to obtain the pulse data of the participants. Polar OH1 systematically monitors heart rate by making a very precise results thanks to its high-quality 6-LED optical heart rate measurement. Pulse data was recorded per second during the shopping process.
Eye Tracker	SMI Red250 Eye Tracking device was used to determine which design component the users focused on during the shopping process on the site.
Skin Conductivity Sensor	GSR Skin Conductivity sensor was used to measure the emotions occurring in the sympathetic nervous system of the participants during the shopping process with the help of the changes in the skin conductivity level. When evaluating the data obtained from the sensor, a high skin conductivity data means that the emotional state of the participant is normal, and a low level of data means that there is a change/difference in the participant's emotional state.

Data Collection Process

An e-commerce site has been determined by getting the necessary permissions. In the experiment, participants were asked to complete a real shopping process. To participate in the study was totally voluntary. The shopping process in the experiment included the tasks of finding a product, adding the product to the cart, and making the purchase. Demographic information was obtained from the participants before starting the experiment. After the calibration of the data

collection devices was completed, the participants started the shopping process. When the shopping process was completed, the data collection process ended with the recording of the experiment and the termination of all the devices used.

Data Analysis

Eye movement tracking device, EEG, pulse monitor tool, GSR and camera were used in the study. First, the data obtained from these devices were put under a single form for each participant.

For eye movements, screen recordings and data obtained by SMI Red 250 Eye Tracking device were reviewed. BeGaze 3.7 software was used in the analysis of eye tracking data. Eye movements were labeled on a per second basis, and it was revealed that which components were focused by each participant for every second.

Pulse data collected with the Polar OH1 heart rate monitor was taken on a per second basis and edited by matching with the shopping process. Brain waves were obtained from EEG data. The meaningless waves at interaction process were excluded from the dataset. Before analyzing EEG data, outliers were calculated and determined. Outlier calculation method was determined by examining previous studies on EEG data. Afterwards, GSR data was matched with other data types and normalization was employed. MATLAB was used to get photographs per second from the video of each participant obtained, which was obtained with a high-resolution camera. Emotion identification for each of the photos (30523 photos) obtained on a per-second basis was made with the help of Face++ API. At the stage of defining emotions from photographs, participants were classified into seven different emotions types as nervous, anxious, fearful, neutral, confused, happy and sad.

During the entire shopping process, the data tagged on a per-second basis was first arranged with the help of an electronic spreadsheet (Microsoft Excel) and then transferred to a database management system (Microsoft Access) in order to make queries. The necessary data for emotion change analysis were taken from the database with queries.

Özmen, Karaman, and Alkış (2021) distinguished each design component on the e-commerce page with task-based coding and expressed the frequency of focusing on design components. The five mostly focused design components presented at their works are "menu and categories", "advertisement", "search", "log in" and "information bar". Among these design components, "menu and categories", "advertisement" and "search" design components, which are directly related to the shopping process,

are taken into consideration within the scope of this study. Emotion changes were analyzed for these design components via IBM SPSS Statistics 25 software. Normally distributed data was analyzed with Independent Sample T-test, which is used to analyze the difference between design components pairs for each data types of emotions changes. Mann Whitney U test was employed for non-normal distributed data (Kalaycı, 2014).

Reliability and Validity

The validity of the study was established on the basis of explaining the data collection tools and processes, determining the assumptions and limitations, and founding the sample selection on the literature (Brinberg & McGrath, 1985; Merriam, 1998). Describing the experimental process, explaining the role of the researcher, conveying the method selection requirement, and taking the participant's consent are also among the validity measures of the study (McMillan & Schumacher, 2010; Büyüköztürk et al., 2014). On the other hand, taking expert opinions and preventing data loss by recording all data constitute the reliability measures of the study (Topu et al., 2013; Balat et al., 2019). Collecting data by making a pilot study before the main experiments and trying to eliminate the deficiencies of the experiment process is another reliability measure (Lancaster, Dodd & Williamson, 2004). While it is sufficient to have five participants in a usability research and user experience study, 32 participants were involved in the study, which is also important in terms of validity and reliability of the current study (Nielsen, 1993). In addition, the calibration value of the eye tracker is less than 0.5 in both eyes during the calibration phase, and the simultaneous use of data collection tools at all stages of the experimental process are among the other reliability measures of the study.

The Role of the Researchers

In the study, the researchers undertook the tasks of designing and implementing the experiment process, accessing data collection tools,

communicating with the participants, and collecting data. After the data was collected, the organization, analysis and reporting of the data were also carried out by the researchers of the study.

Ethical Clearance

Scientific ethical rules were followed during the whole study. In this context, permission was obtained from Atatürk University Social and Human Sciences Ethics Committee to carry out the experiment process with human participants. Evaluation permission was obtained from the administration of the e-commerce site discussed within the scope of the study. In order to use the SMI Red250 eye tracking device, necessary permissions were obtained from Atatürk University Open Education Faculty. A consent form was signed by the participants before the experiment. Also, consent was obtained from the parents of the participants who are under the age of 18 in the study. In addition to these, the data were obtained through real experiments and were not shared with third parties or institutions other than the researchers.

Findings

First, the findings regarding the demographic information of the participants were presented. A total number of 32 participants took part in the study. The descriptive statistics of the participants, who are between the ages of 16-49, are given in Table 3.

Table 3. Participants' demographic information

Demographic information	Groups	N	%
Gender	Female	16	50.0
	Male	16	50.0
Education level	High school	12	37.5
	Associate degree	3	9.4
	Graduate	9	28.1
	Post graduate	2	6.3
	Doctorate	6	18.8

In order to analyze whether there was a change in the emotions of the participants or not, the heart rate, GSR, EEG and FACS data were obtained during the e-commerce shopping process when

they focus on "menu and categories", "advertisement" and "search" design elements. First, all data types were normalized, and their normal distributions and equality of variances were tested in order to determine the applicability of parametric or non-parametric tests. The normality test for all the data handled according to the design elements is presented in Table 4.

Table 4. Normality Findings according to Design Components.

Data type	Design component	Kolmogorov-Smirnov		Shapiro-Wilk	
		Statistic	df Sig.	Statistic	df Sig.
Pulse	Menu and Categories	,098	31 ,200*	,972	31 ,583
	Advertisement	,133	28 ,200*	,972	28 ,638
	Search	,098	27 ,200*	,953	27 ,255
GSR	Menu and Categories	,089	31 ,200*	,977	31 ,722
	Advertisement	,117	28 ,200*	,961	28 ,367
	Search	,071	27 ,200*	,980	27 ,865
LowBeta	Menu and Categories	,233	31 ,000	,760	31 ,000
	Advertisement	,178	28 ,024	,808	28 ,000
	Search	,356	27 ,000	,676	27 ,000
HighBeta	Menu and Categories	,303	31 ,000	,565	31 ,000
	Advertisement	,243	28 ,000	,788	28 ,000
	Search	,326	27 ,000	,587	27 ,000
LowGama	Menu and Categories	,283	31 ,000	,800	31 ,000
	Advertisement	,238	28 ,000	,867	28 ,002
	Search	,274	27 ,000	,794	27 ,000
HighGama	Menu and Categories	,110	31 ,200*	,896	31 ,006
	Advertisement	,127	28 ,200*	,968	28 ,536
	Search	,106	27 ,200*	,966	27 ,511
FACS	Menu and Categories	,208	31 ,002	,838	31 ,000
	Advertisement	,193	28 ,005	,866	28 ,001
	Search	,184	27 ,009	,761	27 ,000

When Table 4 is examined, since the number of participants is 32, Kolmogorov-Smirnov test was taken into consideration for the normality of the variable. Looking at the significance value column (Sig.), data groups greater than 0.05 showed normal distribution. Based on this result, Pulse, GSR and HighGama data groups are normally distributed. The results of Levene's Test conducted to find the homogeneity of variances of normally distributed data types are presented in Table 5.

Table 5. Levene's Test Results for Pulse, GSR and HighGama

Data type	Design component	F	Sig.
Pulse	Menu and Categories - Advertisement	1,647	0,204
	Menu and Categories - Search	1,545	0,219
	Advertisement - Search	0,001	0,981
GSR	Menu and Categories - Advertisement	3,279	0,075
	Menu and Categories - Search	1,082	0,303
	Advertisement - Search	0,399	0,530
HighGama	Menu and Categories - Advertisement	0,484	0,489
	Menu and Categories - Search	0,144	0,705
	Advertisement - Search	0,159	0,692

When the results of Levene's test were examined, it was determined that the variances of the Pulse and HighGama variables were assumed equal ($p > 0.05$). Based on this result, parametric tests were applied for Pulse, GSR and HighGama data groups and non-parametric tests were applied for other data groups. Whether there is a difference between the participants' Pulse, GSR and HighGama data or not was examined with Independent Samples t-test. The results are given in Table 6.

Table 6. Pulse, GSR and HighGama Mean Differences According to Design Components

Data type	Design component	N	X	sd	t	df	p
Pulse	Menu and Categories	192	0,48	0,146	-2,756	30	0,008
	Advertisement		0,59	0,166			
	Menu and Categories		0,48	0,146	-2,504		0,015
	Search		0,58	0,172			
	Advertisement		0,59	0,166	0,192		0,848
	Search		0,58	0,172			
GSR	Menu and Categories	192	0,48	0,205	0,064	30	0,949
	Advertisement		0,47	0,265			
	Menu and Categories		0,48	0,205	-0,276		0,784
	Search		0,49	0,251			
	Advertisement		0,47	0,265	-0,294		0,770
	Search		0,49	0,250			
HighGama	Menu and Categories	192	0,55	0,166	0,432	30	0,667
	Advertisement		0,53	0,195			
	Menu and Categories		0,55	0,166	-0,505		0,616
	Search		0,57	0,165			
	Advertisement		0,53	0,195	-0,894		0,375
	Search		0,57	0,165			

When Table 6 is examined, according to the independent sample t-test results, a statistically significant difference was found [$t(30) = -2.756, p < 0.05$] between the Pulse mean of the "Menu and Categories" design element ($X = 0.48$) and the Pulse mean of "Advertisement" design element ($X = 0.59$). In addition, a statistically significant difference was found [$t(30) = -2.504, p < 0.05$] between the Pulse mean of the "Menu and categories" design element ($X = 0.48$) and the Pulse mean of "Search"

design element ($X = 0.58$). On the other hand, there was no statistically significant difference [$t(30) = 0.192, p > 0.05$] between the "Advertisement" design element's Pulse data mean ($X = 0.59$) and the Search design element's Pulse data mean ($X = 0.58$). No statistically significant results were observed in the analysis of the mean of HighGama and GSR data according to design elements ($p > 0.05$).

Based on the normality analysis results (Table 4), since the significance values of LowBeta, HighBeta, LowGama and FACS data were less than 0.05, they were not normally distributed. For this reason, the Mann Whitney U Test, which is one of the non-parametric statistical tests, was used to examine whether the difference between the means of LowBeta, HighBeta, LowGama and FACS according to design elements is significant or not (Table 7).

Table 7. The Differences Between the Mean Ranks of the Non-Normal Distributed Data of the Participants According to Design Elements

Data type	Design component	N	Mean Rank	Sum Rank	U	Z	p	
LowBeta	Menu and Categories	192	36,16	1157	395	-1,6	0,11	
	Advertisement		28,84	923				
	Menu and Categories		28,67	917,5	389,5		-1,8	0,08
	Search		36,33	1162,5				
	Advertisement		26,44	846	318		-2,8	0,006
	Search		38,56	1234				
HighBeta	Menu and Categories	192	33,97	1087	465	-0,7	0,51	
	Advertisement		31,03	993				
	Menu and Categories		29,94	958	430		-1,2	0,25
	Search		35,06	1122				
	Advertisement		29,59	947	419		-1,3	0,18
	Search		35,41	1133				
LowGama	Menu and Categories	192	32,55	1041,5	510,5	-0,02	0,98	
	Advertisement		32,45	1038,5				
	Menu and Categories		32,19	1030	502		-0,13	0,89
	Search		32,81	1050				
	Advertisement		32,47	1039	511		-0,01	0,99
	Search		32,53	1041				
FACS	Menu and Categories	186	30,26	938	442	-0,5	0,59	
	Advertisement		32,74	1015				
	Menu and Categories		29,29	908	412		-0,9	0,33
	Search		33,71	1045				
	Advertisement		30,5	945,5	449,5		-0,4	0,66
	Search		32,5	1007,5				

When Table 7 is examined, according to the Mann Whitney U test results at the 95% confidence interval [(U) = 318, $p < 0.05$], there is a statistically significant difference between the mean rank of LowBeta of the "Advertisement" design element (26.44) and the mean rank of LowBeta of the "Search" design element (38.56). On the other hand, when the confidence interval is decreased to 90%, a significant difference [(U= 389.5), $p < 0.1$] between the mean rank of LowBeta of the "Menu and categories" design element (28.67) and the mean rank of LowBeta data of the "Search" design element (36.33). When the mean rank scores are compared, it is understood that "Search" design element score is higher. In other words, this result can be interpreted as the "Search" design element in LowBeta data type causes more emotional changes than other elements. In addition, there is no statistically significant difference between the mean rank of other data types related to the design elements ($p > 0.1$, $p > 0.05$).

Discussion and Conclusion

This study investigated whether there was a change in the emotions of the users when they focused on the "menu and categories", "advertisement" and "search" design components on e-commerce pages or not. Users' emotions changes were examined in terms of pulse, EEG, skin conductivity and facial expressions which were obtained with a user experience study. Users' focus on design components were followed with eye tracking method. Total 32 participants took part in the study, who were selected with purposive sampling method. It was concluded that there were some differences in the emotion changes of the participants in the "menu and categories", "advertisement" and "search" design component.

When pulse changes of the participants were examined, it was observed that there was a significant emotion change between the "menu and categories" design element and the "advertisement" and "search" design elements. Pulse changes of the participants who focused on "advertisement" design element were higher than those who focus on "menu and categories" design

element. People's pulse could change depending on stress, as well as depending on excitement. Therefore, to understand the reason of its change, it is necessary to examine GSR, EEG and facial expressions data (Çakar et al., 2017). However, no significant difference was found in the participants' GSR, EEG and facial expressions in terms of these two design components.

On the other hand, the study revealed that the change in pulse when the participants focused on the "search" design element was higher than the "menu and categories" design element. In order to support this result, findings in EEG, GSR or facial expressions were used. Although there is no difference in terms of facial expression and GSR, it can be concluded the participants were highly concentrated when focusing on the "search" design component since LowBeta value was significantly higher at the 90% confidence interval for the "search" design component.

When EEG data was analyzed and interpreted, significant differences were found only for LowBeta wave. When the LowBeta is compared for "advertisement" and "search" components, it was found that LowBeta value is significantly higher for the those who were focusing on the "search" design component. Accordingly, it was understood that the active concentrations of the participants were high when they focused on the "search" component (Yadava et al., 2017; Çakar et al., 2017). When the GSR and facial expressions data were analyzed, no significant difference was observed in user emotions in the processes of focusing on the "menu and categories", "advertisement" and "search" design components.

It has been interpreted that the "search" design element causes more emotion changes than other elements in the LowBeta data type, which gives information from EEG waves, especially in terms of active concentration. This result implies that "Search" design component should be added to menu, simple appearance, text, site color and accessibility factors, which were found as the elements to be paid more attention by Coşkun and Yücel (2021) by using EEG method. Similarly, in the study of Çakar et al. (2017), it was stated that the "search" design component is among the components that cause discomfort for users.

To sum up, this study aims to examine the changes in emotions of the users when they focus on three important design components for e-commerce websites, the "menu and categories", "advertisement" and "search", by using EEG, GSR, pulse, facial expressions and to present realistic and consistent results as suggested by Yadava et al. (2017). Generally, it could be concluded that the "search" design component caused higher active concentration in the participants compared to the other components, on the other hand, the pulse change of the participants who focused on the "advertisement" design component was high. However, in the scope of the study, sufficient findings could not be reached in terms of explaining the reasons for these differences.

Contrary to the statement of Dospinescu and Parcă-Robu (2017), additional data is needed to determine the efficiency and effectiveness of components that are found to have high interaction with eye tracking device. In this study, it is suggested to examine the reasons of emotional changes caused by interaction, in other words intense focus, with design components a new research problem.

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Coopetition as a Strategic Enabler of Innovation in Transition Economies

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Abstract

Transition economies have distinctive opportunities and challenges compared to other economies. Innovation is among the major contributors for development and welfare in countries with transition economies. Limited sources, environmental forces, rapid changes in technology, cost and complexity of research drive organizations to form strategic alliances with their competitors and prefer innovation through coopetition. Transition economies with their unique characteristics compared to other economies and potential of achievable benefits from innovation require particular attention. This study identifies, describes and discusses the promising areas of research methods and perspectives about innovation through coopetition in transition economies. A comprehensive critical evaluation of the underlying dynamics of innovation through coopetition and innovation in transition economies, aided by bibliometric mapping and analysis showed the promising enabling potential of coopetition for innovation in challenging conditions of transition economies. The viable and beneficial coopetition ideas and approaches are identified, represented and discussed to enable effective innovation in transition economies. The main features and challenging aspects of these ideas and approaches are explained in details.

Key Words: Transition Economies, Innovation, Coopetition, Competitiveness.

Öz

Geçiş ekonomileri, diğer ekonomilere kıyasla ayırt edici fırsatlar ve zorluklara sahiptir. İnovasyon, geçiş ekonomisi ülkelerinde kalkınma ve refaha katkı sağlayan başlıca unsurların başında gelmektedir. Sınırlı kaynaklar, çevresel faktörler, teknolojiye hızlı değişimler, araştırma faaliyetlerinin maliyetleri ve karmaşıklığı kurumları rakipleriyle stratejik ortaklıklar kurmaya ve ortaklaşa rekabet yoluyla inovasyon yapmaya yöneltmektedir. Geçiş ekonomilerinin diğer ekonomilere göre özgün özellikleri ve inovasyonun bu ekonomilerde sağlayabileceği potansiyel faydalar kayda değerdir. Bu çalışma, geçiş ekonomilerinde ortaklaşa rekabet yoluyla inovasyon için öne çıkan araştırma yöntemleri ve bakış açılarını ortaya çıkarmakta, tanımlamakta ve yorumlamaktadır. Ortaklaşa rekabet ile inovasyon üzerine çalışmalar ve geçiş ekonomilerinde inovasyon çalışmaları kapsamlı olarak ele alınarak temel dinamikler değerlendirilmiş, bibliyometrik analizin de katkılarıyla ortaklaşa rekabet yoluyla geçiş ekonomilerinin zorlu koşullarında yapılabilecek inovasyonun umut verici potansiyeli görülmüştür. Geçiş ekonomilerinde etkin inovasyona olanak sağlayabilecek uygulanabilir ve faydalı ortaklaşa rekabet fikir ve yaklaşımları belirlenmiş, sunulmuş ve yorumlanmıştır. Bu fikir ve yaklaşımlar üzerine yapılacak çalışmalarda öne çıkan ve dikkat edilmesi gereken yönler detaylıca açıklanmıştır.

Anahtar Kelimeler: Geçiş Ekonomileri, İnovasyon, Ortaklaşa Rekabet, Rekabet Edilebilirlik

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Introduction

Continuous increase in competition in all over the world as a consequence of globalisation tends to speed up with increasing number of firms, changes in consumer preferences, emerging business models and advances in technology. In an atmosphere where the existence of companies heavily depends on their competitiveness and profits with rapidly changing conditions, firms have to determine new strategies and methods for sustainable development.

Innovation is described as realization of a new product (good or service), a process, a marketing method or a new organizational approach in intra-firm applications, business organizations or external relations. Advancing technologies, diversifying customer needs, emerging industrial fields, fluctuations in source costs and regulatory changes of governments make innovation essential. Innovation has a major impact on development and job creation (Sternberg & Wennekers, 2005). Innovation both contributes to the national and regional development and welfare. According to Porter, there are three development stages of the economic situation of a country. The first stage is factor-based, where production is mainly based on land and unqualified labor. The second and the middle phase is investment-based, where manufacturing is more dependent on imported technology and capital. Through the development of local markets, there lies more flexibility and resources to move to the third and final stage: innovation-based economy. This stage is characterized by innovation and commercialisation of new technologies with high added value.

Coopetition is an emerging area of study that provides a number of benefits including fostered innovation. The term "coopetition" is used for the dynamic cases where two or more competing actors (within a firm or from different companies) are also collaborating for some common benefits (Bouncken, Gast, Kraus & Bogers, 2015). There are four main outcomes of coopetition activities; namely, innovation, knowledge (sharing, creation and acquisition), firm performance and relations

(access to resources, learning, fulfillment of goals and etc.) (Bengtsson & Raza-Ullah, 2016).

The main drivers for innovation through coopetition are lack of sources, environmental forces, rapid change in technology, cost and complexity of research, access to value chains and development of highly specialized products (Krommendijk, 2016). As stated in the work of Ritala, Kraus & Bouncken (2016), the core focuses for the research on coopetition and innovation are consequences-outcomes, tensions-dynamics-interaction, value creation-appropriation and innovation in networks-ecosystems.

Transition economies, where there is a movement from central and planned economy to a market-based competitive economy, are environments with distinctive characteristics for innovation. Joining of foreign companies to a recently opened market, use of foreign direct investment (FDI) for development, privatization of public firms, transition from government regulated research and development (R&D) to private companies-integrated open R&D activities, increasing competition and challenges for local companies, changing policies, societal inequalities between rich and poor, inclusive innovation according to local needs, and cultural reactions to transformation started to gain interest of researchers.

This study investigates the possible strategies on innovation through coopetition in transition economies, with an in-depth critical evaluation of the innovation-centered works in the area of coopetition and in transition economies.

The studies on coopetition in the literature can be mainly classified as conceptual development studies (Loebbecke, Fenema & Powell, 2016), mapping of critical success factors and variables for performance analysis (Petter, Resende, Júnior & Horst, 2014), the main approaches and future challenges (Bengtsson & Kock, 2014; Bouncken et al., 2015), drivers, process and outcomes (Bengtsson, Raza-Ullah & Vanyushyn, 2016), including firm size related differences in drivers, advantages and disadvantages (Krommendijk, 2016). Although these studies have valuable contributions to the related area of study, there is

lack of studies that critically evaluate the approaches in coepetition for innovation. There is an introductory study that focuses on innovation related coepetition, published in 2016 (Ritala et al., 2016), and numerous papers focusing on different aspects have later been added to the literature, expanding the area of study. Most of the related works mainly provide superficial insights in limited scopes and there is need for deriving the knowledge covering diverse efforts. In addition, critical evaluation of coepetition studies is rarely conducted to identify the adoptable approaches for specific sub fields including transition economies.

This paper is mainly on the identification of promising areas of research, adoptable methods and useful perspectives for innovation through coepetition in transition economies. The study contributes to the related literature by (a) detailed understanding of dispersed conditions for innovation in transition economies and mainly (b) identification, representation and discussion of suitable and advantageous ideas and approaches that can be adopted for innovation through coepetition. The next section provides a thorough overview of transition economies, innovation in transition economies and innovation through coepetition. The section following it describes the methodology. The section after that is presents the findings. The core findings of the study can be found in the subsection titled "Promising Areas of Research, Methods and Perspectives for Transition Economies", comprising promising areas of coepetition research, concepts and approaches for innovation in transition economies. The last section concludes the paper.

Literature Review

Understanding the Transition Economies

The term "transition economy" represents movement from a centrally planned economy to a market oriented economy. In other words, it is a renovation process in countries which move from a planned, public organizations-centered system to a private market economy. In this process, private ownership become more dominant and most of the

resources are allocated through markets (Fischer & Gelb, 1991).

Countries with transition economy are the countries that moved from a Soviet-type centrally planned system to a free and competitive market system (Svejnar, 2002). Some examples to transition economies in central Europe are Czech Republic, Hungary, Poland, Slovakia and Slovenia. This trend spread to South-Eastern Europe, influencing Albania, Romania Bulgaria and the former Yugoslavian republics, Croatia, Serbia, Montenegro, Bosnia and Herzegovina and North Macedonia. Russia and countries in the Commonwealth of Independent States (CIS) are also considered as transition economies. Among these mentioned countries, Albania was the last that moved from a centrally planned economy to a free market system in the beginning of the 90s (Xheneti & Bartlett, 2012).

The main features of transition economies are transition from a government dominated market to free markets with higher competition, joining of foreign companies and reducing market power of domestic firms, foreign direct investment opportunities, high inequalities in life and work conditions, cultural and competitive tensions among the local and foreign rivals (OECD, 2012a, 2012b).

Transition economies provide economic liberalization and a move to an economy where the prices are set by market forces, rather than dictated by central institutions (Aidis, et al., 2008; Krammer, 2009). It is a complex process requiring thorough reforms in a country's economic, political and social institutions and infrastructure (Feige, 1994).

The main disadvantages of transition economies is the lack of financial capital, innovation management expertise and novel technology, while the advantages are high human capital and wide expertise in manufacturing activities (Apanasovich, Heras & Parrilli, 2016).

Innovation in Transition Economies

This section describes the distinct conditions for innovation efforts in transition economies. United Nations (UN) determines global goals for

development. In its 2030 agenda, there are 17 new Sustainable Development Goals (SDGs) for guiding policies and funding. Industry, innovation and infrastructure is listed as one of the goals, showing the integrated nature of these three elements.

Transition from a central and planned economy to a market oriented economy has gained particular interest of researchers since the 90s (Szerb & Trumbull, 2016). Radical changes and reforms took place during the end of the 80s and the beginning of the 90s in transition economies increased the importance of entrepreneurship and innovation activities for research (Ratten, Ferreira & Fernandes, 2017; Hisrich, Petković, Ramadani & Dana, 2016; Peng, 2000).

The main drivers for growth, competitiveness and sustainability are identified as advanced technologies, larger information flow and organization's ability to innovate (EU, 2014; OECD, 2013). As an organization gets closer to becoming a global technology pioneer, the importance of innovation gets higher relative to imitation as a source of productivity growth (Acemoglu, Aghion & Zilibotti, 2006).

A number of transition economies like Bulgaria, Hungary, Latvia, Poland, Romania and Slovakia with limited knowledge and innovation profile and performances are supported to adopt, imitate and innovate through new strategies, in the context of "European imitative innovation area" (Capello & Lenzi, 2013).

At the initial stage of transition process, countries like Czech Republic, Hungary and Poland performed well in creation of new venture and support; but their innovation capabilities were insufficient to foster entrepreneurship (Szerb, 2008). The innovation experience and knowledge gap of the central and eastern European countries compared to developed countries caused less number of patents and other intellectual properties produced per capita (Marinova, 2001).

In the beginning of the 21st century, several transition economies implemented numerous policies to move from an imitation-based economy to an innovative entrepreneurial economy (Acs & Szerb, 2007).

There was a high competition for the firms in transition economies, due to not only the domestic competitors, but also the other European companies, increasing the importance of innovation (González-Pernía, Parrilli & Peña-Legazkue, 2015). In entrepreneurial approaches in transition economies, human capital and modern technology are used to gain competitive advantage for the companies (Peng, 2001). Presence of high quality human resources and adoption of modern technology are identified as the important factors of product innovation within companies. A study in an example transition economy, Slovenia, stated that firms with insufficient internal capabilities had a lower innovation capability (Leskovar-Spacapan & Bastić, 2007). One of the main challenges in adoption of modern technology by firms in transition economies is large costs of the required machinery and equipment, compared to companies in more developed economies in Europe (Apanasovich et al., 2016).

According to the study of World Bank (2010), instruments used for encouraging innovation may have both advantages and disadvantages. As an example, reducing barriers for importing goods and services can drop down prices to world average; while at the same time, reducing the competitive power of domestic firms. Foreign direct investment as another instrument will obviously increase competition, put pressure on local companies to innovate, increase local worker's knowledge and expertise. However, foreign firms may deploy harsh strategies such as buying domestic firms to eliminate local competition or working with some other global partners to cope with local supply and distribution needs. Another highlighted topic is easy access to foreign technology. It brings out the risk of causing domestic firms to not rely on their individual R&D.

In a report of OECD (2012a, 2012b), the objectives of innovation are described according to different country categories. For low-income countries, it is stated that innovation should respond to specific local conditions in important industries. Moreover, inclusive innovation for and by low- and middle-income groups in the society is suggested to improve welfare and provide

access to business opportunities. Regarding the middle-income countries at early stages of development, the priorities are listed as to focus on key areas to compete with leading world innovators through radical and incremental innovation and addressing issues at global scale. For later stages of development, climbing up in global value chains and keeping the competitiveness in the most successful industries of the country are listed as the important targets. The same report explains that there is a shift to service-based economies from manufacturing-based economies, with still sustaining importance of manufacturing in development. Information and communication technologies (ICTs) are the catalysts of efficient and higher scale innovation allowing many partners to work together easily.

Innovation policies are crucial for the process of including private companies in R&D activities in transition economies (OECD, 2012a, 2012b). Formerly, government and public laboratories based innovation system can be evolved through effective policies that integrate universities and firms. At the early stages, government can act as the main body of the innovation system, while at the later stages leaving most of its duties to private sector and paving the way to a decentralized innovation system. The same report shows the successful sectors and firms in emerging economies. The top 15 companies in 2011 are mainly from telecommunication, oil and gas, construction and electronics industries.

In transition economies, a high number of the domestic firms can have limited resources and flexibilities. Due to the various needs that can not be met by a single partner, these companies usually tend to join networks and ecosystems with high numbers of allies providing different resources and knowledge.

Coopetition and Innovation

The term “coopetition” represents the coexistence of competition and cooperation together between two or more parties, under specific circumstances (Sroka, 2013). One of its main advantages is the creation of new products more, compared to the cases where there is collaboration with non-

competing parties (Tether, 2002; Quintana-Garcia & Benavides- Velasco, 2004). This is achieved through the joint use of market and technological knowledge, allowing more effective generation and diffusion of innovation (Ritala & Hurmelinna-Laukkanen, 2009). Coopetition can be effective at the success of innovation. Coopetition with competitors who have identical or complementary solutions, skills and competences may be more beneficial (M. Zehir & C. Zehir, 2019).

There are several works that show the evidences of collaboration of competing companies to innovate and bring new products, services and solutions to market (Gnyawali & Park, 2011; Hung & Chang 2012; Ritala & Hurmelinna-Laukkanen 2009; Bouncken & Kraus, 2013; Bouncken & Fredrich, 2012; Pekovic, Grolleau, & Mzoughi, 2020; Bouncken, Fredrich, Ritala, & Kraus, 2018).

Coopetition is a driver of value creation in innovation activities, due to involved parties' aligning targets (Giachetti & Dagnino, 2016; Le Roy & Czakon, 2016), complementary resources and effective combination of industry- and market-specific expertise and market power (Ritala & Hurmelinna-Laukkanen, 2009; Gnyawali & Park; 2011). Coopetition can enhance value appropriation through expanding the involved parties' current markets and helping development of new markets and business models (Ritala, Golnam & Wegmann, 2014; Gast, Filser, Gundolf & Kraus, 2015). An important benefit of coopetition is sharing of common knowledge about markets and technologies, which allows more effective creation of new knowledge and innovations (Belderbos, Carree & Lokshin 2004; Dussauge, Garrette & Mitchell 2000).

In transition economies, collaborations with foreign companies, especially with the ones with important technology licenses can have an important impact on product innovation (Kurtishi-Kastrati, Ramadani, Dana & Ratten, 2016). Through such relationships, local firms can learn about new product design and technology through reverse engineering and enhance their innovation activities, skilled and experienced staff of foreign firms can move to local firms (spillovers through labor market turnover) and the foreign companies'

products can enhance local companies' creative thinking, new product and process design-development skills (Cheung and Lin, 2004; Gërguri-Rashiti, Ramadani, Abazi-Alili, Dana & Ratten, 2017; Ramadani, Abazi-Alili, Dana, Rexhepi & Ibraimi, 2017). Through these ways, local companies in transition economies can gain valuable knowledge from other companies, improve their product portfolio and increase their performance.

Forming alliances with larger and more powerful organizations is one of the effective ways of coping with environmental turbulence in transition economies. Such alliances, can involve strong local firms along with foreign entrants and public agencies. Entrepreneurial local firms can get access to financial assets and learn useful managerial and technical capabilities from the foreign partners. Government agencies can provide useful resources especially to startups, helping to reduce environmental turbulence for entrepreneurs (Peng, 2001).

Companies in transition economies need the latest technology to be able to compete in global markets (Svetlicic & Rojec 1994). However, they usually lack the related knowledge and competences to develop or adopt sophisticated manufacturing and product technologies. For this reason, they tend to seek alliances with possible partners that have the matching technological capabilities.

Methodology

As part of the methodology, firstly a comprehensive overview of works in transition economies is evaluated, depicting a conceptual framework. This highlighted the importance of innovation in transition economies and the ways to do it effectively in transition economy conditions. Coopetition is determined as an important, useful strategy for successful and effective innovation activities. In the next step, a bibliometric analysis is conducted to examine the research areas of both disciplines, representing their social, intellectual and conceptual structure (Verma & Gustafsson, 2020).

Firstly, the keywords "coopetition" and "innovation" are searched together for the works in Web of Science database, resulting in 405 publications. A second search is done using the keywords "transition economies" and "innovation" together, resulting in 230 publications. The number of publications annually for the last decade is shown on a graph for each cluster of publications. After that, using VOSviewer tool, bibliometric mapping is done for both cluster of publications. The mapping is done for co-occurrence of keywords and countries of publications.

At the last stage, a number of outstanding works among the limited number of publications that cover all the three areas (coopetition, innovation and transition economies) together are presented in a table. All these activities, led to identification of promising areas of research, methods and perspectives that can be adopted from studies in innovation through coopetition in transition economies explained in "Promising Areas of Research, Methods and Perspectives for Transition Economies" subsection under "Findings".

Findings

Bibliometric Analysis and Mapping

Bibliometric analysis and mapping is done using data of the works found in Web of Science database, using VOSviewer. Figure 1 shows the number of publications on coopetition and innovation annually in the last decade. Especially in the recent years, the interest in and efforts on innovation activities through coopetition is considerably increased, as the number of publications exceeded 50 annually, more than the double of the works annually published before 2016.

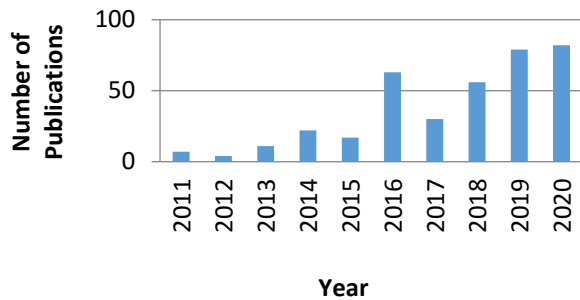


Figure 1. The number of publications on coopetition and innovation in the last 10 years

The bibliometric map of top 50 keywords in coopetition and innovation studies is shown in Figure 2. Knowledge sharing, management and transfer are the knowledge-related important

aspects considered in the previous works, while value creation and capture are prominent from the value perspective. Open innovation and radical innovation are the popular innovation views, while business ecosystem, entrepreneurial ecosystem and platforms come to the fore for coopetition networks with high number of parties. SMEs are at the spotlight of research, while banks and tourism are the widely investigated sectors. Trust, tensions, paradoxes, governance, sustainability and performance are the particularly focused aspects of the conducted innovation through coopetition activities.

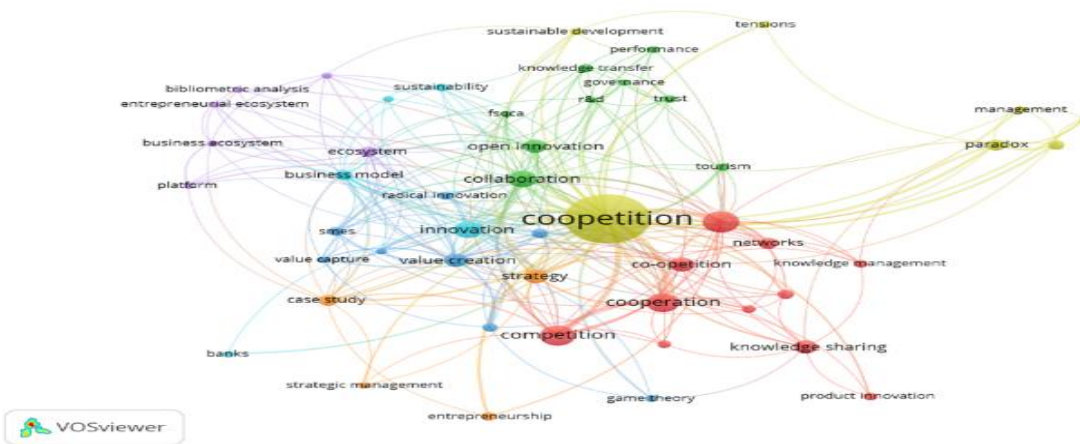


Figure 2. The bibliometric map of the top 50 research topics in coopetition and innovation studies

The bibliometric map of the related top 48 countries is provided in Figure 3. The researchers in the US have joint studies with the researchers from different parts of the world, such as China, South Korea, Italy, India, Austria and Turkey,

while Germany mainly has joint activities with the Northern European countries and Spain has a research network with South America. France has research partnership with a number of Middle East.

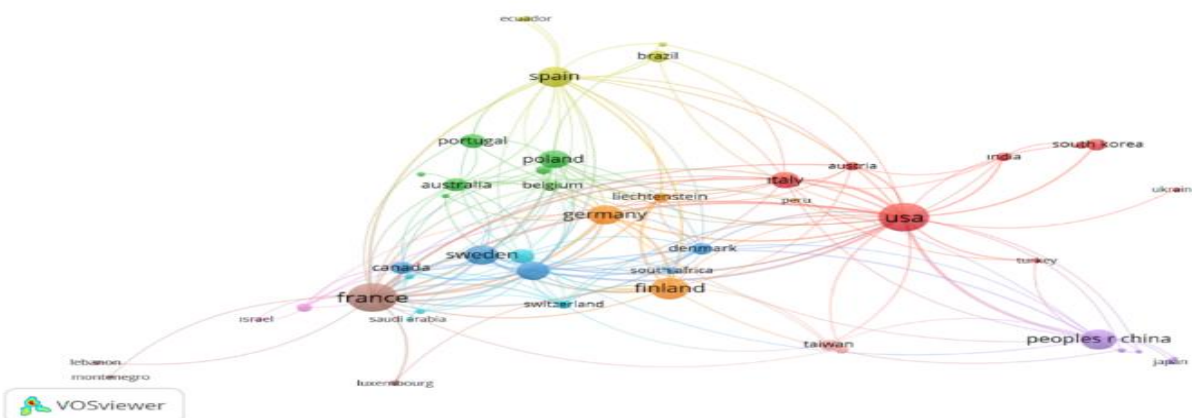


Figure 3. The bibliometric map of the 48 related author countries in coopetition and innovation studies

The number of publications published on transition economy and innovation annually in the last decade is shown in Figure 4. A steady biennial growth trend is observed with relatively less number of works compared to the works on innovation and competition. The increasing trend shows the recent interest on innovation approaches specific to transition economies, while the low quantity of annual number of publications indicate the need for further efforts in this area.

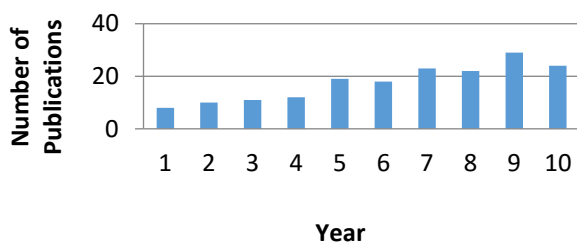


Figure 4. The number of publications on transition economies and innovation in the last 10 years

The bibliometric map of the top 50 keywords in studies on transition economies and innovation is shown in Figure 5. Internationalization, international entrepreneurship, foreign direct investment and export intensity are the main aspects considered when investigating the foreign companies entering a transition economy or domestic firms that expand beyond their countries. Absorptive capacity, spillover, knowledge management and mode of innovation are prominent when examining the interactions in joint activities between foreign and domestic parties working on innovation in transition economies. Productivity, competitiveness, development and performance are considered to evaluate the benefits of joint activities.

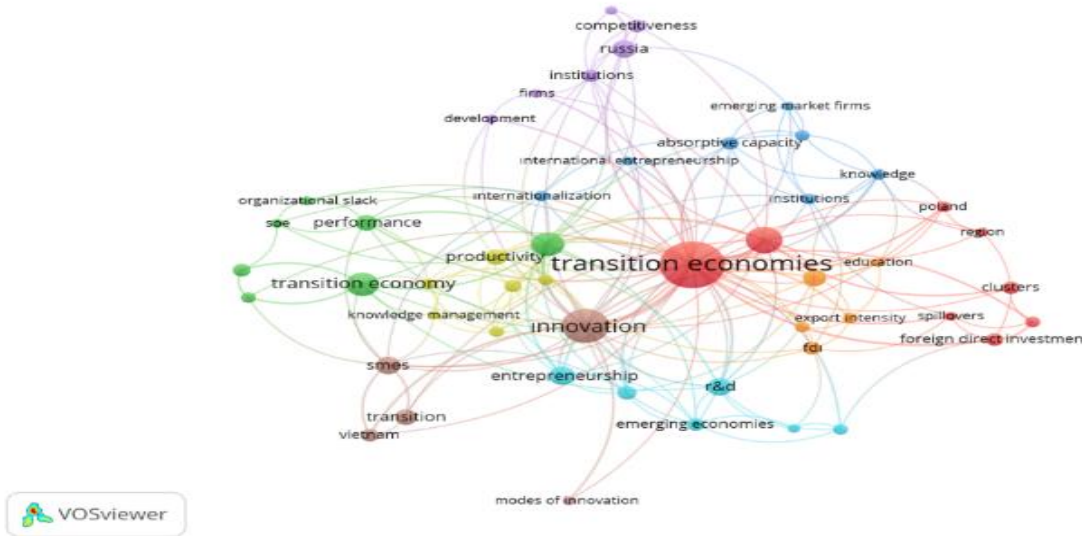


Figure 5. The bibliometric map of the top 50 research topics in transition economies and innovation studies

The related 46 countries are mapped in Figure 6. China, the US and England are at the heart of joint studies, while close collaboration is visible between Eastern European countries such as Serbia, Macedonia and Slovenia. The US has

unique joint efforts with Turkey and Australia, while China has close cooperation with Singapore and an interesting collaboration is visible between England and Greece.

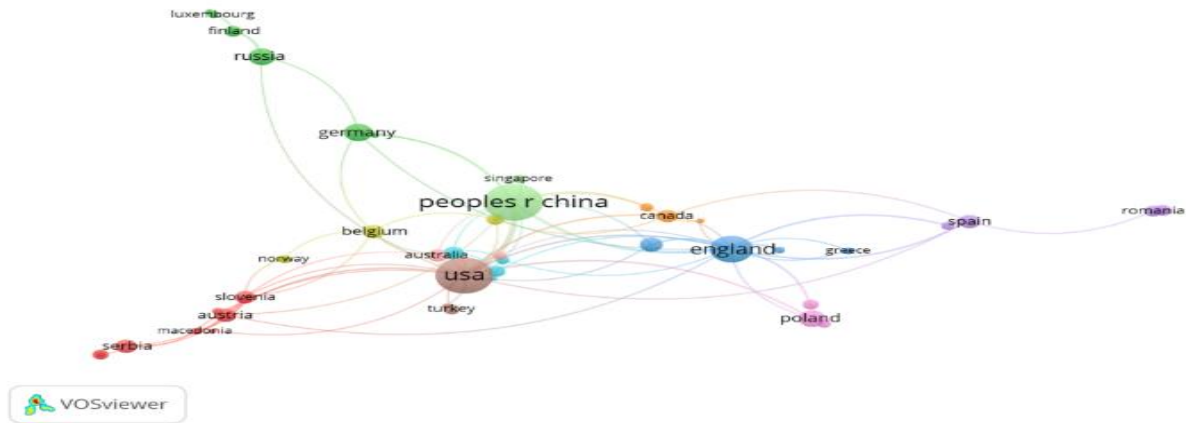


Figure 6. The bibliometric map of the 46 related author countries in cooperation and innovation studies

Critical Evaluation of the Underlying Dynamics

The works on innovation in the domain of cooperation and in the domain of transition economies, the limited number of works that cover both cooperation and transition economies are investigated. Table 1 presents the details of a number of prominent works, including their important findings.

Table 1. Prominent studies about cooperation and innovation in transition economies

Authors and Year	Focus of Interest	Methods	Sample	Findings
Apanasovich, et al., 2016	Innovations in post-Soviet transition economies (The case of Belarus)	Data analysis	1261 manufacturing and service firms	Combination of science and technology-based innovation (STI) and doing- using and interacting-based innovation (DUI) modes is more effective at technology innovation compared to their individual use. Preferring DUI mode individually is more effective at product innovation than STI mode. DUI mode has a strong and positive relationship with organization innovation.
Cyglar & Sroka, 2016	Cooperation in Polish Companies	Surveys	235 companies operating in the high-tech sector	Companies usually cooperate for sales, distribution and purchase operations. They prefer cooperation mainly for primary activities rather than support activities.
Jankowska, 2011	Internationalization of Polish firms	Interviews	57 companies in several industries	The firms that cooperate with their competitors increase has higher international competitiveness. Firms, especially SMEs that prefer cooperation increase their market share both in domestic and foreign markets.
Gërguri-Rashiti, et al., 2017	Information communication technologies, Innovation and Firm Performance in transition economies	Surveys and probit model (econometric technique)	9,354 firms in several industries	It is found that large companies in transition economies prefer innovation activities more, compared to small firms. In case they have competitive pressure from foreign firms, they tend to undertake more innovation activities. Private-owned firms (both domestic and foreign) with above 10% of ownership have more innovation activities compared to state-owned companies.
Ramadani, et. al., 2019	Product innovation and firm performance in transition economies	Data analysis and multistage equation modeling.	6246 companies in several industries.	Product innovation improves firm performance in transition economies, based on firm size, total labor cost, capital and other variables. On the other hand, age and informal sector competition have negative impact on performance.
W. Przychodzen & J. Przychodzen, 2020	Renewable energy production in transition economies	Data analysis	27 Transition economies	More economic growth, increasing unemployment and government debt increase renewable energy generation activities. Increasing CO2 emissions per capita, competition policy and reduced competitiveness in the energy market limits green energy generation from renewable sources. After 2007 financial crisis, reinforcement of competition in energy market and public subsidies increased deployment of renewable generation.

Hitt, et al., 2004	The Institutional Effects on Strategic Alliance Partner Selection in Transition Economies: China vs. Russia	Surveys	121 firms (63 firms based in China and 58 firms based in Russia)	Stable and supportive environment in China helps the domestic firms to employ a longer-term plan for alliances and partners considering their unique competences, technological and managerial capabilities. On the other hand, relatively less stable institutional environment in Russia, caused Russian managers to employ short term plans for alliances and partner selection, considering access to financial capital and complementary skills to cope better with the turbulent environment.
Vajjhala, 2013	Key Barriers to Knowledge Sharing in Medium-Sized Enterprises in Transition Economies (Albania)	Surveys	118 respondents working in 20 medium-sized enterprises	The main barriers to knowledge sharing for the SMEs in Albania are cultural problems, motivational challenges, lack of human resources, insufficient technological resources and lack of benefits.
Dolinska, 2015	Knowledge based coopetition in innovation networks (in Poland)	Surveys	64 companies	The study states that innovation networks allow effective knowledge-related development in innovative companies. The research showed that all the considered companies cooperate with others in their innovation processes. They dominantly (95.4%) cooperate in their home countries, while less (43.6%) have collaboration in both inside and outside their home countries and very few (4.6%) prefer cooperation only abroad.

Promising Areas of Research, Methods and Perspectives for Transition Economies

This section represents the core contributions of the study. The promising areas of research, methods and perspectives are determined, based on the identified aspects in section 2 and considering the analyses done in section 3, encompassing innovation through coopetition and innovation in transition economies.

Globalisation as a consequence of trade openness and foreign direct investment, causes foreign competitors to enter to a developing market (OECD, 2012a, 2012b). Many of these new actors may have financial advantages and valuable know-how compared to domestic firms. However, they will mostly need local support, driving them to form local alliances especially for reliable supply chain relationships. Therefore, vertical coopetition studies are of importance for transition economies. Vertical alliances mostly lead to relatively less efficient and slower innovation compared to horizontal alliances, due to different knowledge bases of partners. It is also a threat for companies to face their partner as a rival during coopetition. Especially buyers have the probability to use seller's knowledge and technology to make a lower cost agreement with another supplier or even start self-production of formerly imported components. According to the study of Bouncken, Clauß & Fredrich (2016), transactional governance (plans,

contracts and etc.) may have a negative impact on innovation performance especially at the early stages of coopetition, while relational governance (moral control, cooperative atmosphere) has rather positive impact.

Participation of foreign companies in local markets also has a negative impact on the national companies' market power. This usually leads to an increase in competition and innovation activities of the domestic firms. This can be fostered through coopetition among the companies. Hereby, horizontal coopetition networks formed by only local companies or a mixture of domestic and foreign firms that can be investigated. A number of critical success factors for horizontal coopetition networks are proposed in the study of Petter, Resende, De Andrade Júnior & Horst (2014). According to the study, trust and commitment among the partners have a major positive impact on the success of coopetition. Some other important factors are the synergy between the participants, organizational culture, exchange of experiences and learning, equity of rights and duties, management of conflicts and interdependences.

In the early stages of development in transition economies, R&D activities are mostly conducted by public laboratories funded by the government. However, most of the developed economies rely on R&D done by private companies in cooperation with universities, public institutions and the government. Therefore, it may be beneficial to

study the impacts and management of cooptation between government and universities with private companies. It is indicated in the paper of Eriksson & Pesamaa (2013) that, public clients can learn from private clients about valuable practices in project-based industries.

One of the frequent cooptation types in transition economies, from the perspective of firm size is SME-Large enterprise relationship. In the study of Krommendijk (2016), drivers, advantages and drawbacks according to this specific alliance type are discussed. The main drivers for SME-Large enterprise cooptation are described as access opportunity for the SME to value chains and development option of highly specialized products for the large enterprises. The advantages or positive outcomes of this kind of a cooptation for SMEs are increase in their legitimacy and credibility, and enlarged competencies and sources for large enterprises. Increase in acquisition power is a mutual benefit for both of the partners as a result of cooptation of SMEs with local expertise and customer portfolio with large enterprises with a broader and international market power. On the other hand, there are also drawbacks such as power asymmetry, risk of losing independence and slowed down decision making. Power asymmetry consideration and management is more crucial for SMEs, since large companies usually gain superior economic benefits from cooptation. Role flexibility is one of the possible ways of coping with power asymmetry, based on forming different alliances with different companies over a long term to develop innovative products to improve competency.

Transition economies are usually described as turbulent and dynamic environments, where firms may form several alliances over time and change their cooptation partners as a response to changing conditions. For this reason, performance analysis and case studies require consideration of numerous cooptation activities of the company with different partners. Longitudinal case studies, as a recently emerging approach in cooptation literature can be useful for analysis. In these studies, usually a single or a number of companies are focused on and their cooptation activities with

different allies over a long time period are analyzed. As indicated in the work of Chiambaretto & Fernandez (2016), market uncertainty is one of the main drivers of evolution of alliance portfolio. Diversity can provide access to new sources and markets; but can bring together management challenges. According to the findings of the study, firms tend to form horizontal and mixed alliances in the times of high market uncertainty. In the times of low uncertainty, they mostly exit cooptative alliances with tensions and prefer vertical alliances with rather smaller number of companies. It is also stated that the best partner of a firm to access specific resources and markets is its closest competitor.

A big percentage of the studies in the literature focus on specific industries in a country selected by the authors. Similar to this trend, there are specific sectors that includes top companies with successful innovation activities. In the report of OECD (2012a, 2012b), the top firms in emerging economies are from telecommunication, oil and gas, construction, electronics and automobile industries. Considering the majority of the works, there is lack of cooptation studies in the oil and gas industry. The majority of the industry based cooptation studies is based on data analysis of numerous firms to evaluate inter-firm cooptation outcomes.

Innovation is not only limited to high-tech and manufacturing industries. Especially in transition economies, sectors with advanced technology and manufacturing need high investments and comprehensive know-how. However, other sectors (such as service and food) also have a high potential for innovation, with rather less investment and know-how. There are studies in the literature on food, wine, sport and tourism, mostly based on case studies comprising small number of SMEs (Galdeano-Gómez, Céspedes-Lorente & Rodríguez-Rodríguez, 2006; Granata, Géraudel, Gundolf, Gast & Marques, 2016). Surveys are mostly preferred in these studies to investigate business model innovation, value creation and competitive advantage.

Inclusive innovation is one of the distinguished type of innovation in the countries with transition economies. These countries have more inequalities

in society, causing specific local needs by low- and middle income customers that drive inclusive innovation to improve social welfare. One type of inclusive innovation is on developing cheaper and simplified products for lower income groups to reduce the gap between rich and poor. Another type is mainly on business models to engage lower income groups in innovation activities and entrepreneurship. There is also lack of studies in the literature about inclusive innovation and coopetition. Coopetition between government, universities and private sector for providing solutions to local issues through innovation, represents a useful basis for case study formations.

One of the main challenges in transition economies is limited amount of investment in innovation activities. In specific cases, this may be a main barrier in front of new products and services. A promising low cost approach is crowdsourcing, where interested audiences from public can even contribute to innovation. The contribution can be either on a voluntarily basis or to gain individual output related social and/or monetary incentives. Crowdsourcing is mostly for idea creation and end-user product innovation. While idea creation represents one of the initial phases of innovation for the crowdsourcing companies, end-user product innovation allow them to design their new products according to customer desires. There are different focuses in crowdsourcing articles. While Zhao, Renard, Elmoukhli & Balague (2016) investigates the factors that influence creative performance, Wu, Li & Chang (2015) discusses the importance of social media in social learning process. Apart from these perspectives, Majchrzak & Malhotra (2013) studies information systems considering participation architectures. One of the important findings in the paper of Zhao et al (2016) is that coopetition is more fruitful regarding the number and creativity of ideas in crowdsourcing.

Understanding of coopetition outcomes is one of the efforts in many studies. Similarly, in transition economies, it would be crucial to examine the innovation performance of foreign company-domestic firm coopetition cases. In order to achieve it, an emerging approach in the

literature is patent analysis. As a basic example, in the report of OECD (2012a, 2012b), openness benefits are illustrated based on the number of patents with co-inventors. It is indicated in Chen & Chen (2011), that patent analysis provides more information than financial statements. The methods used in that study is to count the number of patents, categorize according to the technological fields and citation analysis. In the study of Park, Srivastava & Gnyawali (2014) patent analysis is used together with alliance data to identify the impact of cooperation and competition intensities on firm innovation performance.

Discussions and Conclusion

This study revealed a number of applicable ideas and approaches of innovation through coopetition in transition economies. The explored concepts in section 2 provided deep insights into the general framework, characteristic features and explicit study patterns. Detailed interpretation of the focuses areas in innovation through coopetition works and innovation in transition economies works in section 3 paved the way for identification of the suitable and promising study elements in "Promising Areas of Research, Methods and Perspectives for Transition Economies" subsection under "Findings".

According to the study findings, the prominent approaches are, vertical coopetition between the foreign newcomers and local competitors, horizontal coopetition networks formed by both foreign companies and domestic firms or only local companies, coopetition between government, universities and private sector, SME-Large enterprise coopetition activities and risks, longitudinal case studies to observe alliance evolutions, analysis of specific industries and companies that are

Successful at innovation and benefit from coopetition in transition economies, analysis of coopetition in sectors different from manufacturing and without high technology needs (such as food, tourism, sports and etc.), inclusive innovation opportunities through innovation, crowdsourcing with coopetition, patent analysis

for evaluating innovation performance. On the other hand, there is lack of studies that focus on sectors and case studies in these economies. Effective adoption of coopetition literature experiences for future studies in transition economies can open new doors for innovation, improve the understanding of coopetition challenges and foster research activities to increase innovation performance in accordance with firm competitiveness. The future work will be on coopetition case studies comprising government, universities and private companies in transition economies, development of scales for the analysis of detailed dynamics between coopetitors and investigation of effective strategies in the field of coopetition for innovation.

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Cyber-Physical Systems and Cyber Security: A Bibliometric Analysis

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Abstract

With the emergence of Industry 4.0, the use of advanced technologies has become widespread in both the manufacturing and service sectors. Among the most important of the advanced technologies used are cyber physical systems (CPS). Along with the use of technology, security has also become highly important. For this reason, along with CPSs, the issue of cyber security has also developed. For this purpose, in this study, bibliometric analysis of 827 studies published between 1999-2021 in the field of CPS and cyber security in journals scanned in Web of Science was performed. With the thematic evolution analysis, the change in the field has been revealed based on time. While the basic elements of cyber security issues were discussed in the period of 1999-2015, which was determined as the first period, issues such as smart grids and education were observed in the period of 2016-2019, which was determined as the second period. In the last period of 2020-2021, topics such as cloud computing, game theory and maritime cyber security have emerged. However, there are also CPSs and cyber security concepts that exist in all three periods. From this point of view, it can be concluded that the field of CPS and cyber security is not yet fully mature and more detailed studies are needed on basic issues, while interdisciplinary studies are expected to gain weight in the coming days, as it is a subject that has an impact on many different dimensions.

Key Words: Cyber-Physical Systems, Cybersecurity, Bibliometric Analysis.

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Öz

Endüstri 4.0'ın ortaya çıkması ile beraber gerek imalat gerekse hizmet sektöründe ileri teknolojilerin kullanımı yaygınlaşmıştır. Kullanılan ileri teknolojilerden en önemlileri arasında da siber fiziksel sistemler (CPS) yer almaktadır. Teknoloji kullanımı ile beraber güvenlik unsura da yüksek derecede önemli hale gelmiştir. Bu nedenle CPS'ler ile beraber siber güvenlik konusu da gelişim göstermiştir. Bu amaçla bu çalışmada Web of Science da taranan dergilerde CPS'ler ve siber güvenlik alanında 1999-2021 yılları arasında yayımlanan 827 çalışmanın bibliometrik analizi yapılmıştır. Tematik evrim analiziyle birlikte alanda yaşanan değişim zamana dayalı olarak ortaya konulmuştur. İlk dönem olarak belirlenen 1999-2015 aralığında siber güvenlik konularının temel unsurları ele alınırken ikinci dönem olarak belirlenen 2016-2019 dönemine gelindiğinde akıllı şebekeler ve eğitim gibi konular gözlenmiştir. Son dönem olarak belirlenen 2020-2021 aralığında ise bulut bilişim, oyun teorisi ve denizcilik siber güvenliği gibi konular ortaya çıkmıştır. Bununla birlikte her üç dönemde de varlığını sürdüren CPS'ler ve siber güvenlik kavramları da mevcuttur. Buradan hareketle CPS ve siber güvenlik alanının henüz tam olarak olgunluğa erişmediği ve temel konular üzerinde daha detaylı çalışmalara ihtiyaç duyulduğu sonucuna varılabilirken aynı zamanda çok farklı boyutlar üzerinde etkisi olan bir konu olması hasebiyle disiplinler arası çalışmaların önümüzdeki günlerde ağırlık kazanması beklenen bir durumdur.

Anahtar Kelimeler: Siber Fiziksel Sistemler, Siber Güvenlik, Bibliometrik Analiz

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Introduction

The effects of globalization have caused changes in the ways in which we obtain and process information and have helped to bring about new concepts like digitalization and innovation. The public has lost its interest in traditional industry practices, and Industry 4.0 has started to take effect. As a result of Industry 4.0, systems that include both digital and physical components have come into existence. A result of this is that cyber physical systems (CPS) are increasing in usage and applications can be found in a variety of different sectors including the airline industry, the infrastructure industry, and the manufacturing process (Brandman et al., 2020: 202). Complex systems include control, communication, and computing technologies, and CPSs are no exception. The term CPS is used to describe stem cells that have the ability to differentiate into multiple cell types, also known as "pluripotent stem cells" (Zhang et al., 2021; Tantawy et al., 2020). Security threats will inevitably increase for CPSs as they become more widely deployed. Attack of this kind can significantly degrade system performance and/or CPSs. Such attacks can cause considerable harm. Resistance to cyber attacks is therefore an important consideration when making CPSs (Kholidy, 2021, p.1). Although attacks against the manufacturing sector have been common in recent years, these attacks have mostly been the result of targeted phishing emails. An increase in the number of internet-connected devices creates new opportunities for cyberattacks via connected devices. Attacks are conducted with the aim of damaging critical infrastructure, affecting production, and stealing sensitive data about customers (Pandey et al., 2020, p.05).

Failure to detect cyber-physical attacks in production can result in significant damage. Poorly executed attacks may have a detrimental effect on the design, functionality, and quality of a product. In practice, this means errors in production systems are likely to occur. Due to this, it is possible that consumers are using faulty products, which could put human safety at risk. Use of the product can lead to premature

deterioration of the product. distortions at the beginning of the design process have the potential to be extremely costly, especially to critical product components such as brakes, jet engines, or turbine blades (Elhabashy et al., 2019, p.922). Malicious attacks can have dangerous, widespread, and potentially catastrophic consequences on human life, productivity, and national security. Due to these concerns, CPS security experts are increasingly concerned about the possibility of a cyberattack (Walker-Roberts et al., 2020, p.2645).

As tech advances, the evolution of the supply chain reflects and expands on those concepts from Industry 4.0 such as the Internet of Things (IoT), additive manufacturing, virtual reality, artificial intelligence, and blockchain, which help to link supply chain partners. Cybersecurity countermeasures, however, are lagging behind digitizing supply chains. It has been suggested that supply chains unwittingly expand their exposure by dealing with multiple different parties without regard for risk (Ghadge et al., 2020, p.224).

Even with continuous security and protection efforts, these critical infrastructure components remain vulnerable to cyber attacks. These recently intensified complex attacks reveal the significance of conducting an ongoing risk assessment and management process (Tantawy et al., 2020, p.1).

The use of advanced technology in the production processes of the enterprises and in the operational processes such as supply chain, logistics and financial systems has become very common today. Along with the use of advanced technology, it is also important to ensure the security of the data produced by these technologies. Emphasis has been made in the literature on the advantages of investing in technology for businesses. However, besides the advantages of technology, the security problems that may be experienced may turn these advantages into disadvantages. For this reason, it is necessary to take into account the issue of cyber security along with technology. For this purpose, in this study, CPS, one of the advanced technology applications, and cyber security were discussed and evaluated together.

Theoretical Framework

Cyber Physical Systems

CPSs are traditionally defined as computational integration with physical processes, where networks embedded in computing devices and integrated with feedback loops can monitor physical processes, intervene, control and support them when necessary. The most important paradigm of these defined processes is Industry 4.0 applications that take into account technologies such as big data analytics, decentralization, human-robot interactions, sensor and actuarial networks (Sreeram and Shimon, 2021, p.2-3). CPSs are complex and heterogeneous systems that include mechanical components, human activities and the surrounding environment, and have cyber components and physical processes such as sensors, computers, control centers and actuators that are seamlessly integrated (Pan et al., 2019). CPSs are physical systems and have features such as design, construction, and monitoring that are built into a central computing and communications core. To put it another way, CPSs allow us to interact with the physical world around us in ways we were not able to before the internet was created (Rajkumar et al., 2010, p.1).

CPSs are an important enabling factor for Industry 4.0, connecting various pieces of equipment, factories, products, suppliers, and customers. CPS technology has made physical devices with computers and networks that are used to expand functions more common in recent years (Zhang et al., 2021, p.1). As far as control systems go, CPS is complex networked systems with physical elements (like buildings and roads) mixed with computing elements (like computer networks). The fact that CPSs are everywhere affects nearly every aspect of our lives (Wu et al., 2016, p.2). Industrial sectors such as aerospace, defense, industrial automation, healthcare/medical equipment, and infrastructure have seen significant gains in competitiveness thanks to their innovations (Zhang et al., 2021, p.1). In order to manipulate a physical process, CPS utilizes various networking devices, hardware, and software components (Carter et al., 2019, p.1). It forms the basis for the development of a variety of

areas, such as smart manufacturing, medicine, and infrastructures, as well as smart cities, vehicles, and wearable devices (Alguliyev et al., 2018, p.212). Also, CPSs include various factors such as industrial control systems, the Internet of Things, smart home devices, and smart objects, among others (Zegzhda, 2016). Many CPSs have both cyber and physical components and operations. By integrating physical systems with intelligent objects and services, this enhancement enables those physical systems to become even more effective (Akhuseyinoglu and Joshi, 2020:1).

Additionally, CPS is a concept that is related to cloud manufacturing. Cloud technology is a critical part of a company's service offering because it allows for a dynamic response to environmental changes. A critical feature of the conceptual architecture is the CPS, which can process large amounts of data and execute real-time functions. The CPS is rapidly making significant evolutionary leaps, and it is moving toward an infrastructure that is more dependent on the world around us, with quicker data processing and quicker control implementation. These technologies are going to increase the security and reliability of future designs. The cloud makes it easier for manufacturers to expand the cyber protection part of CPS and install it on the device (Mourtzis and Vlachou, 2016, p.713).

Ports can also be defined as locations where data flows from supply chain technology to the terminals and where human-computer interfaces are in place. The change from flow-based Industry 1.0 to intelligent network-based Industry 4.0 has also caused a CPS to be formed at port locations (Gunes et al., 2021, p.1).

Cyber Security

With more attention on cybersecurity over the past few years, it has become easier to understand how to apply the concept of security to all internet-related issues. Although network security stresses the protection of internal systems, protecting the overall network environment is just as important in cybersecurity. Such measures include real-time monitoring of suspicious entities or objects outside the network, identifying attack sources, and

monitoring malicious applications (Chen et al., 2021, p.3).

Cyber-attacks have weaponized rapidly advancing technology by introducing undesired vulnerabilities because of complex integrated hardware, software, and firmware. Therefore, it becomes increasingly difficult for an organization to cope with the evolving threat environment (DiMase et al., 2015, p.292). Information systems consist of three parts as hardware, software and computer networks. Ensuring the security of these three components is a priority in the work against cyber attacks. A vulnerability that occurs in one of these three parts will affect all parts, as well as cause serious damage to companies that are attacked. For this reason, the needs of all parts should be evaluated separately when planning and working on cyber security (Ismail and Zainab, 2011).

We are currently living in the age of digitalization, where computer systems, networking hardware, and sensors are all in use together via networks. The desire to preserve safety is of utmost importance in this instance. A thorough attention to the requirements engineering process is essential for sound system development. In order to have a secure system, vulnerabilities must be taken into consideration (ur Rehman and Gruhn, 2018, p.1). Information leaks, denial-of-service (DoS) attacks, and sometimes other cyber actions related to national security or military matters are just some of the many ways that cyber attacks can be delivered. It is possible for cyber-physical attacks to lead to serious health and safety issues due to the damaging or deterioration of physical assets (Parn and Edwards, 2019, p.249). There are new technologies that are making an impact on cyber security, including autonomous technologies, the Internet of Things (IoT), artificial intelligence (AI), and blockchain (Raban and Hauptman, 2018).

Cyber attacks refer to organized attacks on the communication or information systems of government agencies, private companies or individual users for the purpose of attacking and decommissioning critical sectors, baiting, damaging with malicious software, social

engineering, data theft and modification, stealing, deleting or publishing confidential information within Information Systems (Çakmak and Demir, 2009, p.29-30). Cyber attacks are also attacks made with computer codes that are used and developed to prevent information technology systems from working by affecting them physically or systemically (Rid and McBurney, 2012, p.7).

An access attack is a type of attack in which access is granted to the host computer's machine even though the attacker does not have permission to use it for the purpose of manipulating information. Reconnaissance attacks are defined as attacks that match the targeted systems in order to scan for any vulnerabilities in the machine in order to gather information about the machine. Phishing attacks are the act of sending erroneous messages to users through a variety of means such as e-mail, text messages, and other similar methods that appear to come from a legitimate source in order to deceive users and obtain sensitive and confidential information such as login passwords, credit card numbers, and other similar information (Kaur and Ramkumar, 2021, p.2-3). After gaining access to a botnet, a common attack method is to launch a denial of service (DoS) attack. These attacks are aimed at compromising the usability of critical systems and causing service interruptions. In the past, DoS attempts were network-based, and they were used to overload active nodes with rogue traffic, causing them to stop serving or begin behaving abnormally until they were overwhelmed themselves. The service levels of the receivers are lowered as a result of such attacks, which overwhelm the targets with fraudulent requests that can cause excessive delays. An important aspect of such service interruptions is the ability to differentiate between active and aggressive attacks and legitimate requests, as well as the ability to respond equally to all incoming messages (Arnaboldi et al., 2020, p.42). In computer programming terms, a Trojan is a type of program in which destructive functionality has been added in order to associate it with an already existing program. Defining account hijacking as the process by which hackers gain access to a specific individual's computer or email account, as

well as other accounts associated with the service or computing device, and use them for their own purposes. In general, a virus can be defined as a piece of code that attaches itself to another program and runs alongside them when the program is activated by the user (Al-Mhiqani et al., 2018, p.2).

Cyber Security in Cyber Physical Systems

According to widely held belief, the CPS is considered to be an extremely well-isolated system that is invulnerable to outside attacks. Physical isolation has, however, been greatly reduced as a result of the Internet of Things and increased internet connectivity. A smarter control system that can protect itself from malicious attacks and establish multidisciplinary collaborations between information technology and process control is therefore required to supplement the CPS (Palleti et al., 2018, p.161).

The modern environment of digital manufacturing places a great emphasis on cyberphysical security. In this situation, a cyberattack can lead to faulty parts, IP theft, or infrastructure damage (Brandman et al., 2020, p.202). To date, the increase in IoT applications, such as smart cars and industrial control systems, has contributed to the prominence of CPSs such as these, and as a result, these systems have become a target for hackers (Geismann and Bodden, 2020, p.1). Although production systems are popular targets for cyberphysical attackers, there are many industries that make extensive use of them. Consider for example, the machined parts that are almost everywhere in the production business, all of which are vulnerable to attack (Brandman et al., 2020, p.203). It is possible that competitors may attack the cyber component of the CPS in an attempt to interfere with the physical processes. Because of this, it is essential to protect these systems from attempts to corrupt or subvert them, and to ensure that the integrity, functionality, and security of the systems are protected (Carter et al., 2019, p.1). CPS security is only partially addressed by current IT security approaches. To give another example, channel encryption may in some cases limit the ability of unauthorized users to access it, but can be completely useless to

malicious personnel and susceptible to decoding by a powerful attacker. Other issues with traditional IT security approaches include not accounting for physical devices' connections to cyber threats. When attempting to breach a cyber security system, an attacker is not only attacking the network, but also attacking the physical elements of the CPS (Wu et al., 2016, p.3). For a satisfactory level of protection, information security measures such as authentication, access control, and message integrity appear insufficient. To make matters worse, the security systems in place are neither reliant on underlying physical processes or control mechanisms, nor capable of protecting against insider attacks (Pasqualetti et al., 2013, p.1). In other words, the CPS device is vulnerable to various threats. Since heuristic attacks can hijack connected devices and turn them into email servers for mass spam, use them as botnets to execute DDoS (Distributed Denial of Service) attacks, or simply cause business process disruption (Walker-Roberts et al., 2020, p.2646), heuristic attacks can frequently hijack connected devices and turn them into email servers for mass spam, use them as botnets to execute DDoS (Distributed Denial of Service) attacks, or simply disrupt business processes (Walker-Roberts et al., 2020, p.2646).

An increase in the rate of cyberattacks targeting the CPS has occurred in recent years, with disastrous results. Code reuse attacks, malicious code injection attacks, and fake data injection attacks are extremely common in CPS, which are just a few of the myriad of potential attacks an attacker could be using. attacks on CPS industrial equipment can lead to a total blackout (Yaacoub et al., 2020, p.8).

Because system requirements are being translated into design, or during deployment and maintenance of cyber components, or when connecting any external USB device to workstations, it is possible for previously unknown vulnerabilities to be unintentionally incorporated into an attack vector. The tools attackers can use to launch attacks include sensors and communication networks, which means they can attack and compromise valuable targets (Tripathi et al., 2021, p.1).

Methodology

Articles on the subject have been compiled in the web of Science (WOS) database to perform bibliometric analysis of CPS and Cyber Security studies. Accordingly, articles in English language were searched by typing "TI= ("cyber*" AND "secur*")" and "TS= ("cyber physical system*")" in the search section of the WoS database. While the titles of the articles were evaluated with TI, studies on cyber-physical systems were identified in the studies with TS. With the use of an asterisk (*) at the end of the search terms, the plural forms or different conjugations of the related search terms are also included in the search. The reason for searching in the title section is that although the concepts in question are included in the abstracts of the studies, they are sometimes not directly related to the subject. After this preliminary screening, the data set was manually controlled by the researcher and studies that were not directly related to the subject were excluded from the data set.

As the reason for choosing WoS as the database, it can be suggested that it is accepted as the most effective platform where scientific knowledge is shared today. Articles are currently the most effective tools in structuring and disseminating scientific knowledge. That's the reason why articles are covered in the search criteria. The reason for choosing English as the research language is that most of the published works are produced in this language and there are many opportunities for analysis in this language. The findings obtained as a result of the search are given in Table 1.

Table 1. General Information

Timespan	1999:2021
Documents	827
Average years from publication	3,98
Average citations per documents	14,7
Average citations per year per doc	2,571
Author's Keywords (DE)	2529
AUTHORS	
Authors	2202
Authors of single-authored documents	112
Authors of multi-authored documents	2090
Collaboration Index	2,94

According to Table 1, as of March 17th 2021, a total of 827 works on cyber security were produced between 1999-2021. The number of keywords in the relevant data set is 2529. Keywords are the summary of an article and express the concepts examined in the research. In this respect, the contents of the articles can be understood by examining the keywords. Another striking aspect of the data set is the low number of single-authored articles, and the high collaboration index.

In the following part, there are some findings showing the quantitative characteristics of the data set, and then there are content analyzes that show the subjectivity of the research. The Biblioshiny package of the R program was used for these analyses.

Number of Articles by Years

The number of articles published in a field is an important indicator of the development of the field. The change in the amount of studies compiled on CPS and cyber security over time is given in Figure 1.

Annual Scientific Production

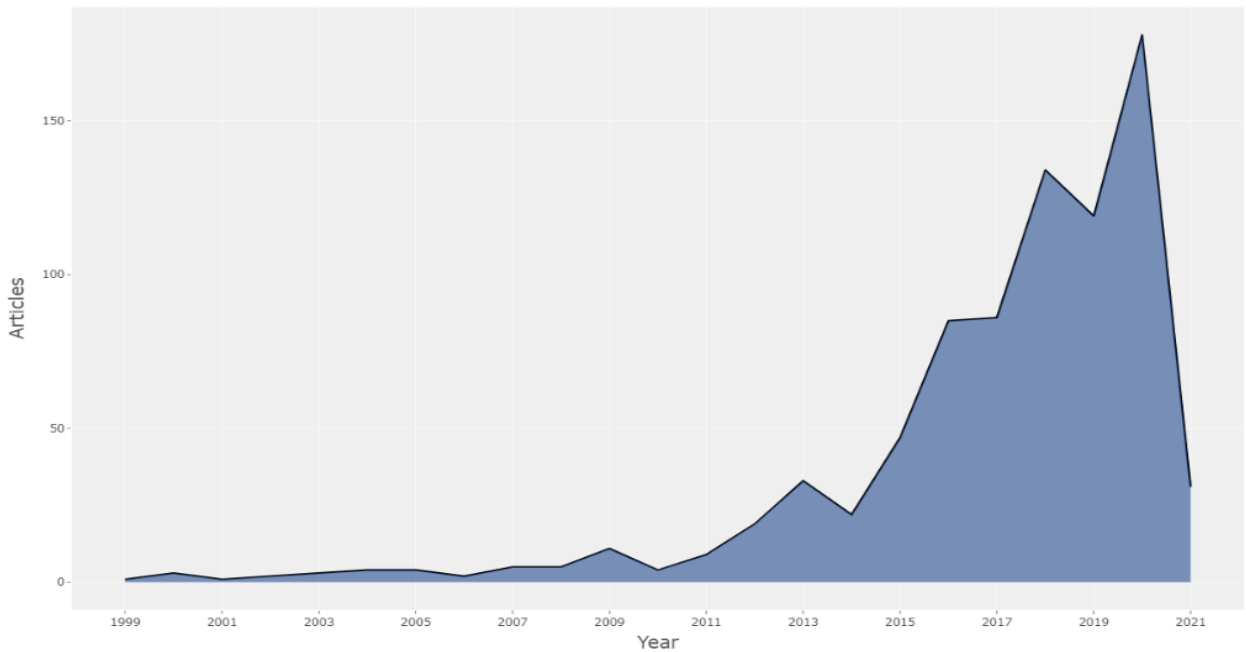


Figure 1. Distribution of Studies by Time

According to Figure 1, studies in the field of CPS and cyber security gained their first serious acceleration in 2009. In 2015 and after, it entered a serious upward trend. The number of studies on the subject between 1999 and 2009 is very few. It can be thought that the significant increase in the studies after 2015 is due to the fact that these years were the years when the use of technology started to become widespread with Industry 4.0. With the use of technology, ensuring the security of the technology used has also become important. Therefore, the increase in studies in which CPSs are evaluated together with cyber security has started to be seen after 2015.

Citation Numbers by Years

Figure 2 shows the levels of progress of citations to published works. The line around which the citation is shaped represents the normalization line. The reason why the number of citations made in some periods is below this line is that the citations made in these periods are at lower levels compared to the periods before and after them.

Average Article Citations per Year

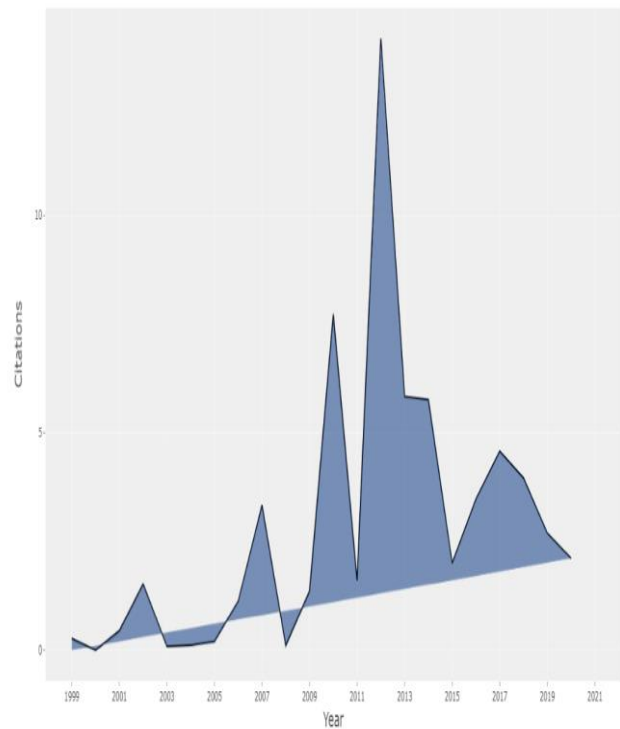


Figure 2. Citation Numbers by Years

Although the number of citations depends on the number of publications, they do not show complete linearity. Although the first period works reach a serious citation score with the increase in the number of publications, as the number of

publications continues to increase, the citation line will become concave as new citations are distributed among the works.

Cross-Country Collaboration

The findings on cross-country collaboration are given in Figure 3. When the origins of the

publications are examined, it is seen that China and the USA have the highest number of publications. In addition, in terms of the countries where the authors are located, it was observed that the most bilateral collaboration took place between China-Canada and China-USA.

Country Collaboration Map

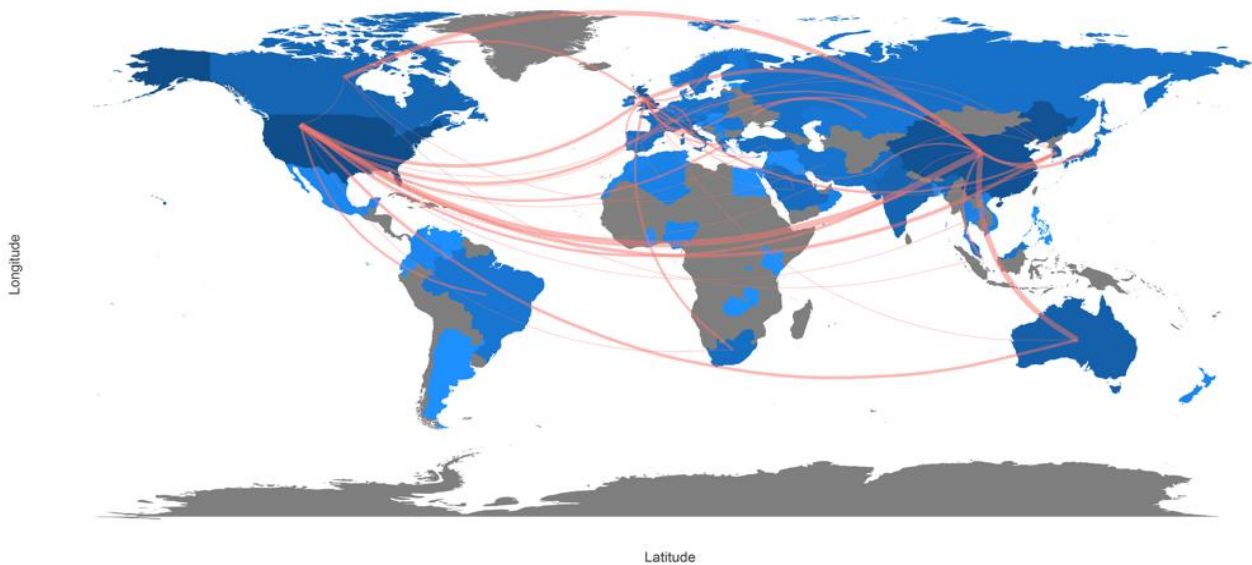


Figure 3. Cross-Country Collaboration

Although there exist studies on the subject in Turkey, it has been observed that there is a serious deficiency in international cooperation.

Universities by Number of Publications

The list of the top 20 universities in terms of their contributions to the field is given in Figure 4. According to this figure, the most active university in the field is Northeastern University in Massachusetts.

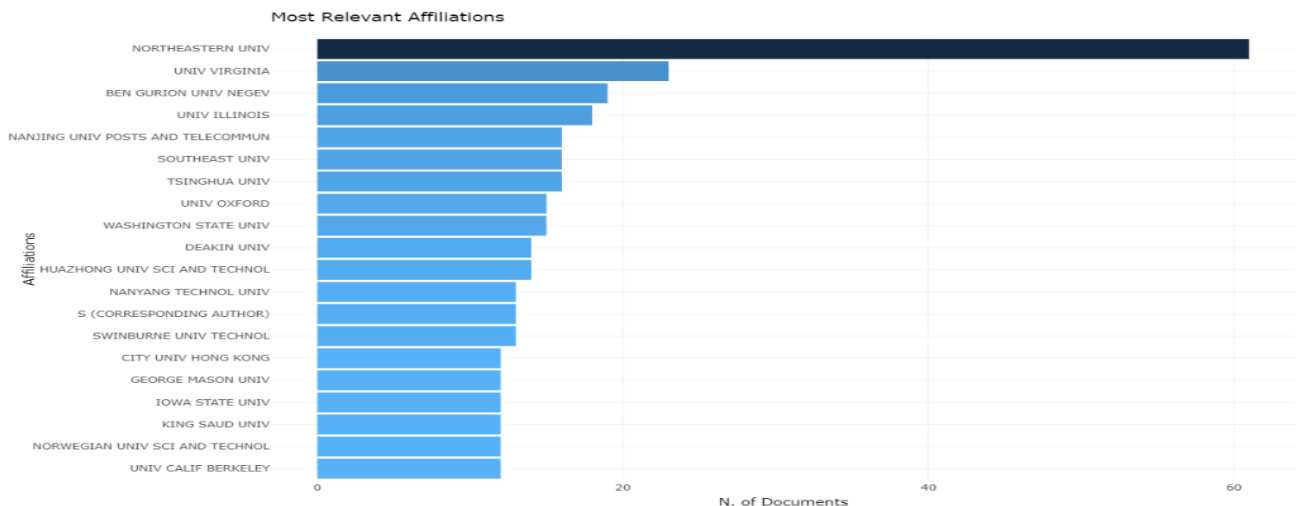


Figure 4. Universities by Number of Publications

The list includes universities of Chinese and US origin, as well as those from some European and Arab countries. However, it is noteworthy that there is no Turkish university among the top 20.

One of the most important issues to be examined about the development of a field is the activities of scientific journals related to the field. The ranking of the journals that include studies conducted in the context of CPSs and cyber security by their number of publications is given in Figure 5.

Journals by Number of Publications

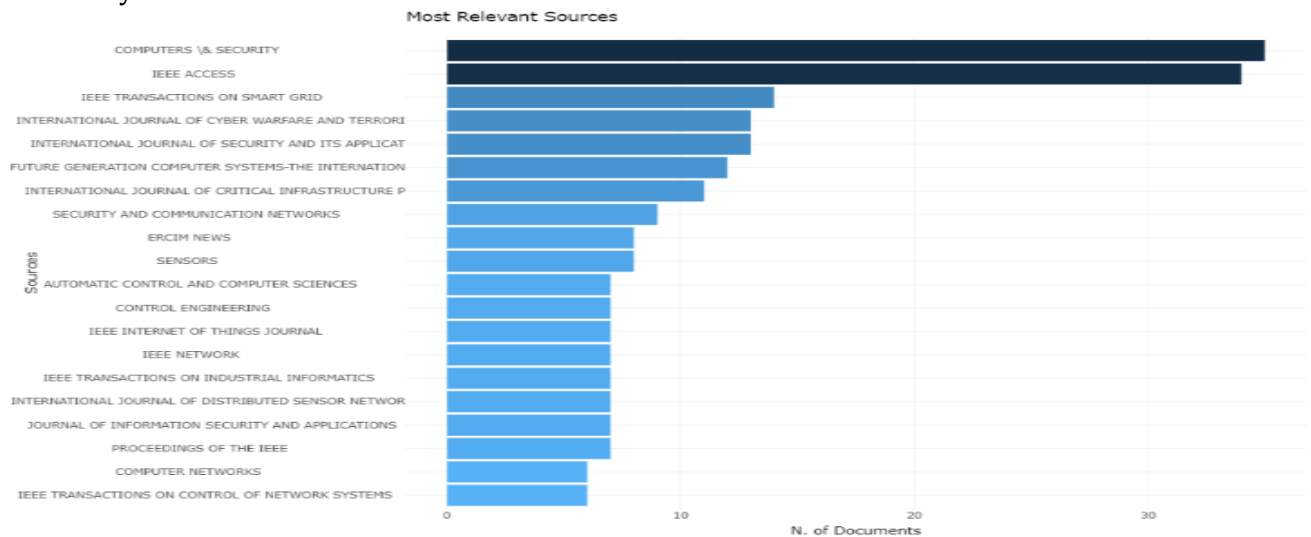


Figure 5. Journals by Number of Publications

According to Figure 5, Computers & Security is the journal with the highest number of publications in the field of CPS and cyber security, followed by IEEE Access. This is followed by IEEE Transactions on Smart Grid and International Journal of Cyber Warfare and Terrorism.

Journals by h-indexes

Apart from the number of publications, another issue that needs to be examined about the journals is how visible the published works are. As an indicator of this, it would be appropriate to examine the citations of the publications in the context of the journal. For this purpose, the h-indexes of the related data set on the basis of journals are given in Figure 6.

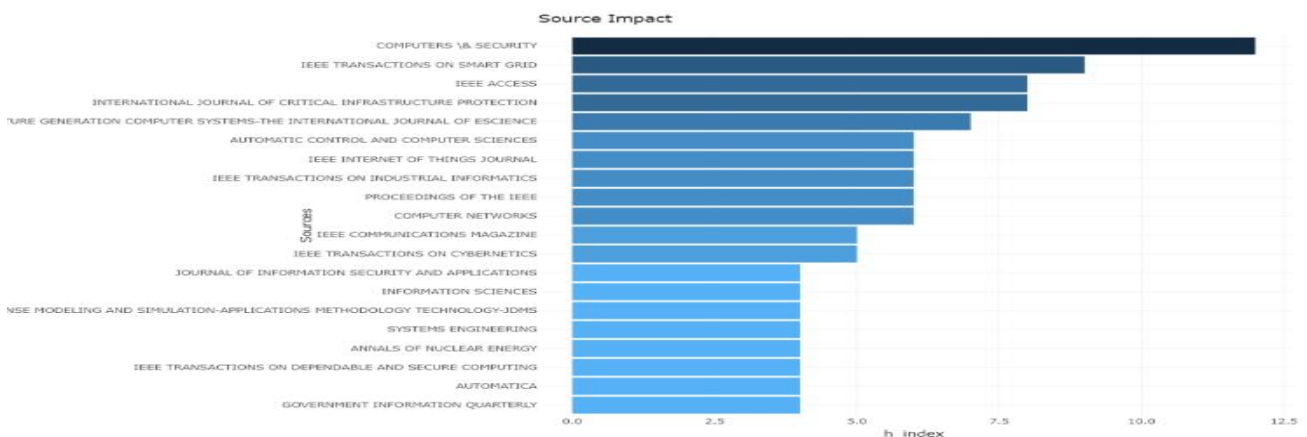


Figure 6. Journals by h-indexes

According to Figure 6, Computers & Security magazine ranks first in terms of h-index as well as in the number of publications. As of today, it can be said that it is the most influential journal in the related field. Except from the publication numbers, IEEE Transactions On Smart Grid magazine ranks second. In other words, it has more visibility with relatively less number of works.

Authors' Production Over The Time

Figure 7 lists authors who work in the field of CPS and cybersecurity by the number of works and intervals in which they produce. When the list is examined, it is seen that most of them consist of authors of Chinese origin. In terms of being a new field, the beginning years of the authors with the most studies do not go beyond 2011.

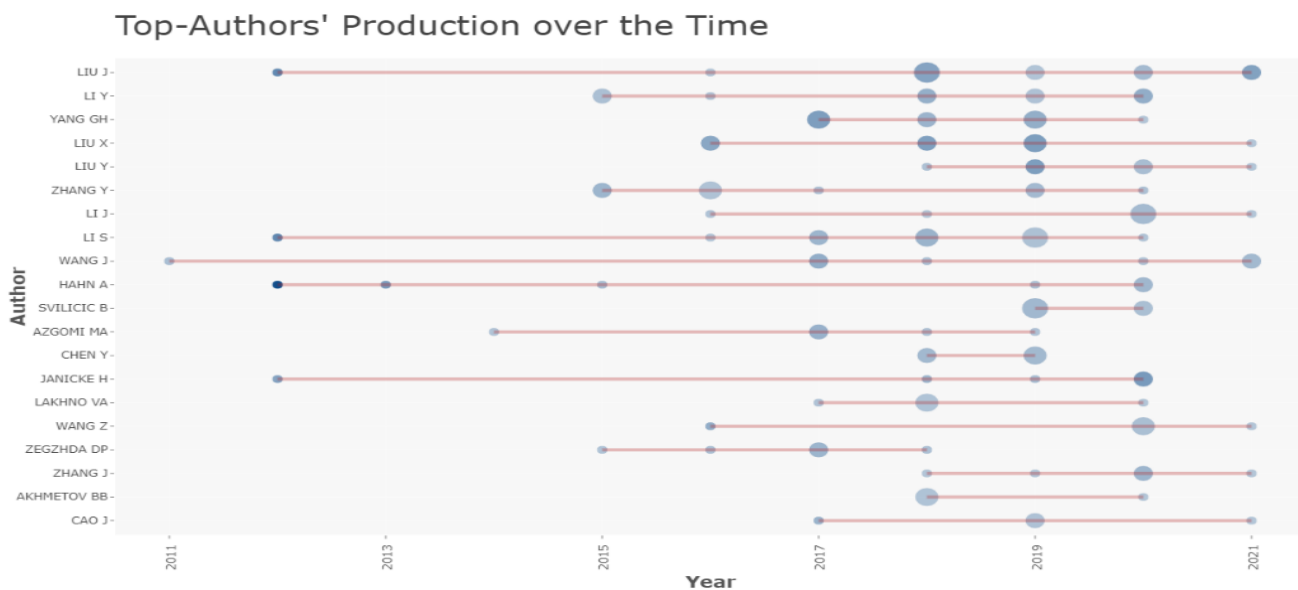


Figure 7. Authors' Production over the Time

Among the top twenty authors, Wang J. has the longest publication range. It is seen that the publication intervals became widespread in the related author set between the years 2017-2020.

implemented. Factor analysis findings are given in Figure 8.

Content Analysis

This section contains content analyzes applied to the keywords of works published in the field of CPS and cyber security between 1999-2021.

Factor Analysis

Factor analysis refers to the clustering of keywords in the dataset along the plane through multidimensional scaling. Since there has not been a similar study before, there is no prediction regarding the factors to be created. For this reason, the option of automatic creation of factors has been

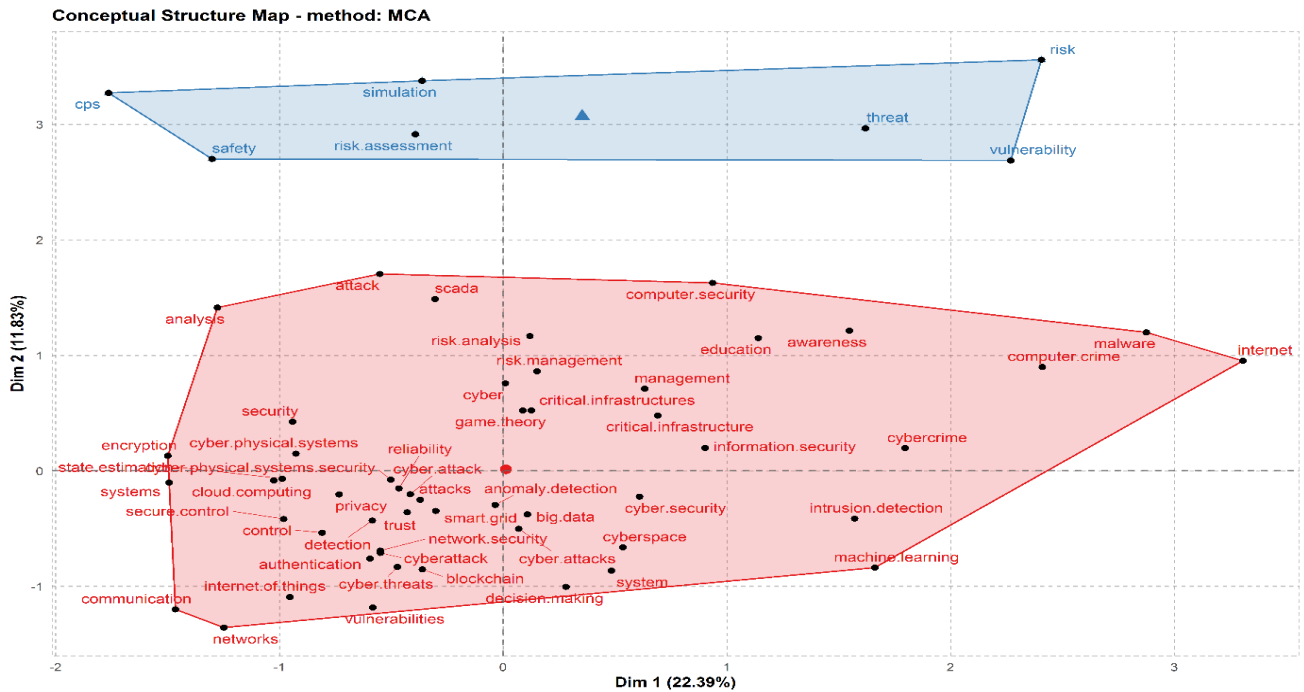


Figure 8. Results of the Factor Analysis

In the factor analysis, as the points representing the centers of the dimensions are approached, the centrality values of the related expressions in terms of area increase. "Cyber attack", "anomaly detection", "reliability" and "game theory" are the concepts closest to the center in the first dimension represented in red. In the second factor dimension given in blue, the most important concept was "risk assessment".

Thematic Evolution Analysis

Thematic evolution analysis is an analysis method used to examine the interactions of the concepts in the analyzed data set at specified time intervals. In this way, it is possible to visualize the degree to which concepts have an impact on which concepts

in ongoing periods. In the thematic evolution analysis in Figure 9, time intervals were adjusted to be as equal as possible according to the density of the number of publications, and the relevant periods were determined as 1999-2015, 2016-2019 and 2020-2021. The vertical sections of the concepts in Figure 9 show how frequently they were used in the relevant period, while the lines leading to the next period show which concepts they interacted with. The thickness of the lines represents the intensity of this interaction. In other words, the thicker a line is, the more intense a relationship exists between the two related concepts. The colors used in the lines are necessary for visual distinguishing.

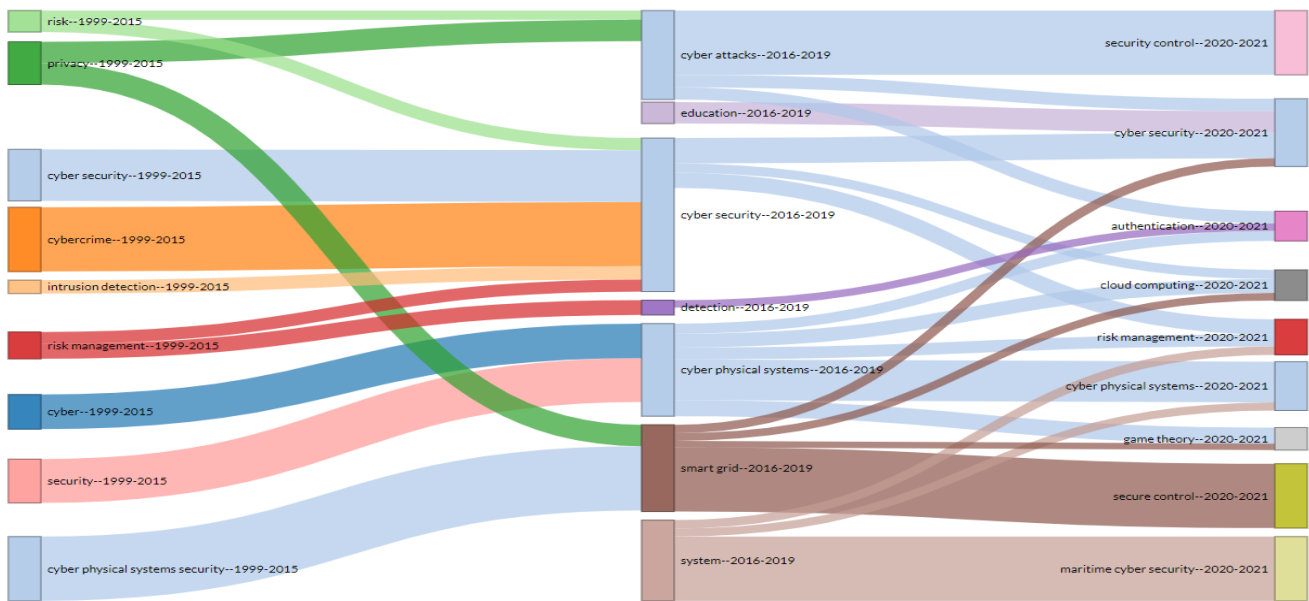


Figure 9. Thematic Evolution Analysis

According to Figure 9, where the change in cyber security is visualized, cyber physical systems maintain their importance in all three periods. While it is seen that the concepts examined in the first two periods mostly cover the subjects that will form the basis of the field, it has been observed that different disciplines such as "game theory", "maritime cyber security" and "cloud computing" have started to be examined gradually in the last period of 2020-2021.

Conclusion

With the increasing and facilitating use of electronic resources, CPS and cyber security have become much more important than ever before. The use of the internet environment in all kinds of activities has also brought risks that were not in question before. With the increasing use and possibilities, the issue of security has also become a separate problem. As a requirement of the nature of cyber activities, it is not possible to be aware of the problem before it arises. Therefore, in today's conditions, cyber security activities are always one step behind the problems. It does not seem possible to prevent this with only the activities to be carried out at the application level. Increasing the conceptual knowledge on the subject is a need in the field of CPSs and cyber security, as it is in

every scientific knowledge community. It is important to examine the academic studies conducted for this purpose and to reveal the situation of the field, as it can shed light on the expected developments in the future.

This study involves bibliometric analysis of 827 studies which were conducted between 1999 and 2021 in the field of CPS and cyber security. In addition, it is a first, as far as it is known, within the scope of the field studied in terms of providing content analysis in the context of time as well as providing the citation information that the usual bibliometric studies have.

When the findings are examined, it has been observed that there has been a significant increase in the number of publications in the related field, especially in the last few years. Accordingly, the increase in the number of citations gained a serious momentum compared to the previous period. However, depending on the increasing number of publications, the number of citations per publication decreasingly grows. It is seen that the most effective names in cooperation between countries are the USA, China, Canada and Australia. When universities are ranked according to the studies on the subject, it is seen that Northeastern University of the USA takes the first place. The fact that no institution from our country could be included in this ranking indicates that there is a great deficiency in the subject. In the

context of journals, *Computers & Security*, *IEEE Access* and *IEEE Transactions On Smart Grid* journals are decisive in the field, both in the number of publications and in terms of their h-index. Just like Universities, in terms of journals, there is no journal of Turkish origin that is among the top twenty. Considering the increasing importance of the subject, it would be beneficial for academic organizations that have serious effects on publication processes to examine and further understand the field in the context of Turkey, with activities such as special issues or call texts related to cyber security and CPSs. As a result of examining the studies in the field according to the authors, it was seen that the majority of the first twenty were of Chinese origin, as expected. It was observed that two basic categories were formed when automatic clustering was allowed in the factor analysis. While the larger category usually includes CPS infrastructure elements, the second and relatively small area includes the organizational reflections of cyber security applications. Finally, with the thematic evolution analysis, the change in the field was revealed based on time. While the basic elements of cyber security issues were discussed in the 1999-2015 period, which was determined as the first period, issues such as smart grids and education were observed in the second period. Recently, topics such as cloud computing, game theory and maritime cyber security have emerged. However, there are also CPSs and cyber security concepts that exist in all three periods. From this point of view, it can be concluded that the field of CPS and cyber security is not yet fully mature, and that more detailed studies are needed on basic issues, while interdisciplinary studies are expected to gain weight in the coming days, as it is a subject that has an impact on many different dimensions.

One of the findings observed in this research is the insufficiency of Turkish academics and institutions related to the field. Among the recommendations of the study is the inclusion of CPS and cyber security among the priority areas. Thus, by increasing the conceptual knowledge of both scientists and practitioners on cyber security, it will be possible to implement effective action plans in the face of possible problems, so they can establish CPSs in the most effective way and

eliminate possible cyber security threats with the least damage.

Among the limitations of the study is the fact that the articles examined are in English, and the reason for this is that it is the language that is closest to being a global language today, and accordingly the majority of academic works are written in this language. It can be suggested that the works written in Turkish in the following periods should be subjected to a similar analysis. The reason for the selection of articles as a research element was that they were at the center of scientific knowledge production. In today's conditions, articles are the fastest and most common means of disseminating a new knowledge throughout the scientific community. Finally, although it is considered that scanning the subject in the Web of Science database creates a limitation, it has been preferred in terms of having the most comprehensive publication archive among the existing databases.

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Idealized Family Types: Turkey 5th Grade Social Studies Textbooks from 1978 to 2018

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Abstract

The aim of this study is to investigate the family phenomenon included in the 5th-grade social studies textbooks published in Turkey between the years 1978-2018. This study was structured according to a qualitative research approach. The holistic multi-state pattern of this approach was preferred. The data sources of the study were chosen from the purposeful sampling methods in accordance with the critical case sampling. The data were collected according to the document analysis method. The analysis method of the research is content analysis. While the analysis was carried out, frequency and categorical analysis techniques, which are among the content analysis techniques, were employed. The following results were obtained in the study: In the interfamilial relations category, division of labour and responsibilities in the family, sharing, democracy, solidarity, special days, communication, discipline and control were included. Women were rather associated with shopping and children. In addition to these, women's motherhood and emotionality, feeding the family, and artistic spirit of women were also included. 1990 and 2010 textbooks focused on the legal status of the family. Islam and family relations were included only in 2000. The most abundant data on family functions were included in the 2018 textbook. Family types were not included in the textbooks of 1978, 1990 and 2000. In 2010 and 2018 textbooks, extended family was mentioned most.

Key Words: Family, Textbook, Content Analysis, Social Studies.

Öz

Bu çalışmanın amacı 1978-2018 seneleri arasında Türkiye'de basılmış olan sosyal bilgiler 5. sınıf ders kitaplarında yer alan aile olgusunu incelemektir. Bu çalışma, nitel araştırma yaklaşımına göre yapılandırılmıştır. Bu yaklaşımın bütüncül çoklu durum deseni tercih edilmiştir. Araştırmanın veri kaynakları amaçlı örnekleme yöntemlerinden kritik durum örneklemesine uygun olarak seçilmiştir. Araştırmanın verileri, doküman inceleme yöntemine göre toplanmıştır. Araştırmanın analiz yöntemi, içerik analizidir. Çözümleme yaparken içerik analizi tekniklerinden olan frekans ve kategorisel analiz teknikleri kullanılmıştır. Çalışmada şu sonuçlara ulaşılmıştır: Aile içi ilişkiler kategorisinde, ailede iş bölümü ve sorumluluklara, paylaşma, demokrasiye, yardımlaşmaya, özel günlere, iletişime, disipline ve kontrole yer verilmiştir. Kadın daha çok alışverişle ve çocukla ilişkilendirilmiştir. Bunların yanı sıra kadının analığına ve duygusallığına, ailesini beslemesine, sanatsal ruhuna da yer verilmiştir. Ailenin hukuksal durumu ile ilgili 1990'da ve 2010'da yoğunlaşma gözlenmiştir. İslamiyet ve aile ilişkisine sadece 2000 senesinde yer verilmiştir. Ailenin işlevlerine yönelik en çok veri 2018 kitabında yer almıştır. 1978, 1990 ve 2000 yılları ders kitaplarında aile türlerine yer verilmemiştir. 2010 ve 2018 ders kitaplarında en fazla geniş aile türüne yer verilmiştir.

Anahtar Kelimeler: Aile, Ders Kitabı, İçerik Analizi, Sosyal Bilgiler

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Introduction

The family is where human beings are born and raised, where they gain their first life skills, values such as love, respect, compassion, sharing and helping each other. It is a school where human beings develop their affective, cognitive and physical intelligence, the first institution of the earth, and the guarantee of generations. These features of the family are more than enough to make the family and its members more special than the other institutions and individuals (Bayırlı, 2018). Family, a social institution that coexists with humanity, is defined as mother-father and child-centered or only child-centered in some definitions. Family elders who have blood ties or people who are considered family elders with spiritual ties are also included in the definition (Keskin, 2017).

There are various theories about the family, which is accepted as both a group and an institution in sociology. According to the structural-functionalist approach among these theories, the family is one of the components that constitute the entire society. It consists of individuals who keep the social system alive and act in accordance with the network of roles and statuses (Koyuncu, 2013). According to Parsons, one of the leading names of the theory, the extended family model underwent a change with industrialization and modernization, the communication of the family with each other weakened, the relationship of social institutions with the extended family deteriorated, and the nuclear family model emerged. However, with the spread of communication technologies after 1980, pieces of the extended family separated from each other started to converge again. Thus, the dispersed extended family model emerged. In particular, the fact that children needed grandparents and grandmothers other than the mother-father relationship made this family structure visible (Parsons, 1965, as cited in Oktik, 2018). According to yet another theory, the confrontational approach, the family became more important in the modern period. According to the theorists of the approach, because capitalism creates endless needs and encourages people to

work and consume more, families became attracted with the goods fetishism. The family became a market where young people are drawn into a consumption frenzy, and since it became commodified, the capitalist system began to attach importance to family (Kasapoğlu, 2012). Besides, the division of labour within the family is interpreted as the first form of a human's dominance on another human being, the enslavement of mothers and children and the seizure of their labour power (Donovan, 2010, as cited in Güçlü, 2012). Accordingly, the nuclear family is a style desired by the authority in societies dominated by the capitalist mode of production. Another theory, symbolic interactionism, focused primarily on relational features regarding family. According to the theory, what determines the relationships is the role and expectations from the role represented and how they are perceived. What matters is if the relationships, roles and perceptions of family members in any family type are of good quality. The clearer the roles and perception of roles, the better communication will be (Canatan, 2016). According to this theory, communication within the family has changed in the modernization process. Modernity allowed family members to act subjectively. Thus, the intimate and collectivist relationships in the traditional family have now been replaced by subjective and individualized family relationships (Can, 2014). The feminist theory treats the family as a patriarchal institution. It argues that the woman is exploited within the family structure. For this reason, this theory does consider that the family institution is a favourable thing. Feminists believe that by changing gender roles, women will be released from family enslavement. With this change, household chores and raising children will also be the responsibility of men. They also oppose the idealization of a single type of family and argue that there may be different and marginal family forms. The important thing is not to be an extended family or a nuclear family because there is no change in the values defining the family in both family models. In addition, it is wrong to consider the family as an institution that encompasses only positive values in the construction of the social order. On the

contrary, the family has a role in developing security problems such as theft, extortion, murder, abuse and rape, patronage relationships, infraction of rules, corruption, anti-democratic attitudes, hate crimes, and lynch culture (Güneş, 2018). Thus, the feminist theory also approaches family differently.

While the sociological theories mentioned above deal with the family in various ways, family types have also differed. Today, there are diversified family models such as nuclear, extended, separated, single-parented, homosexual, childless, cohabitation. Within the changing and diversifying family models, the functions of the family, the duties and roles they undertake have changed equally (Ertan, 2018). These theoretical discussions and the differences in the family indicate that the family issue is one of the important agenda topics of the modern era. It is therefore important that this controversial topic is addressed in textbooks. In the literature, there are some studies related to women, family and gender. These studies, as far as is available, are elaborated below.

Sönmez (2020) examined the 2019-2020 life studies and social studies textbooks in terms of gender. It was concluded that in textbooks, women were mostly associated with services like household chores, doing shopping, cooking and offering treats and with compassion, love, and naive behaviour. Çimen & Bayhan (2019) concluded that in 2018 life studies and social studies textbooks, all members of the house do housework together, women are emphasized as mothers. Also, the Civil Code on family law was adopted as a result of the secularization process, and the nuclear and extended family are mentioned, but different family representations were not included. Bilgin (2019) concluded that women are associated with children and maternity more than men in the family descriptions in the textbooks. However, there is no purely sexist approach because women are not portrayed alone in the kitchen and are portrayed with men. Özer, Karataş, and Ergun (2019) examined Turkish textbooks in terms of sexism and determined that the division of labour for men and women is not reflected in the textbooks sufficiently. Öztürk and Özkan (2018) examined the Life Studies textbooks and affirmed that the value of love is mentioned in

the family, focusing on love for the mother. Taştekin (2019) examined Life Studies and Turkish textbooks for the years 2017-2018. He/She concluded that the family is mainly defined by the female bond in the texts of the books. Zhao, Zhang, and Liu (2017) examined the family unit in Social Studies textbooks. In their examinations, they found that only love of family is provided to students, and no information about family values is given, information on family safety and rules of etiquette is lacking, and mainly nuclear families are included. They also concluded that more diverse family types should be included in order for students to respect different families, and appropriate content should be presented to families in rural and urban areas. Çelik (2016) stated that in social studies textbooks, Turkish women are addressed according to various historical periods within the context of family, and different publishing houses have developed different discourses about women's position. Accordingly, it was stated that some discourses put forward that a restrictive understanding of women's rights developed in post-Islamic Turkish states, changes in lifestyles were observed despite the continuation of the dignity of women with the adoption of Islam, women started to be more interested in taking care of children, and even though women did not completely withdraw from social life, they were excluded from the society and work life. Nevertheless, these discourses were found to contradict each other. Republic era women, on the other hand, were examined within the scope of new rights gained. In their study on Turkish textbooks, Çeçen (2015) stated that the women and men, who are members of the family, cooperate at home and divide the labour, the mother and father have duties and responsibilities in the care and upbringing of children, and they make choices according to their interests. They also stated that texts sometimes show that women are afraid of their husbands, sometimes women have a say. Also, women's motherhood quality is included, and there are narrations about men and women following traditional discourses. Çayır (2014), in his work carried out within the scope of the human rights screening project in the textbooks, stated that the traditional patriarchal family understanding began to change, male

figures engaged in housework were included more in the issues of domestic solidarity and cooperation; on the other hand, representations that traditionally associate women with housework and men with outside work were also available. It was also found in the study that the Ottoman and the Republic periods were portrayed to be different as day and night, and it was aimed to provide the perspective that women were equated with the Civil Code, women began to perform all the professions men could do, the old was dark, and the new is bright, different family types were not included, and the children were not the entitled to rights.

Şeker (2013) examined family and women themes in 2011 Social Studies textbooks. In his review, he concluded that family and women themes were mostly discussed together, but women and family themes were discussed separately in some units. Helvacıoğlu Gümüšoğlu (1994) stated that, in the textbooks of the first years of the Republic, there were examples aiming to strengthen solidarity in the society and the family, women and men were presented as individuals acting in solidarity and constant cooperation with each other, the division of labour was not explained based on the distinction between "female job and male job," the duties of men and women in the family were not defined in strictly separated terms, but the opposite change was observed after the 1950s.

When the abovementioned literature related to the textbooks is examined, it is seen that the subject of the family has been a research topic in the contents of various textbooks. The literature has dealt with the family issue mostly from a gender equality perspective. In other words, the subject of the family has been investigated under certain specified categories in the literature. The focus of this study is to reveal all aspects of the family phenomenon reflected in the textbooks. In this study, the following research categories and the sub-problems of the study were determined by pre-reading the books, and a from-part-to-whole approach was pursued throughout the study. Thus, it was aimed to contribute to the literature to make up for the insufficiency of studies addressing all aspects of the family. In this context, the study

aims to determine the family phenomenon in the 5th-grade social studies textbooks used in Turkey in 1978, 1990, 2000, 2010 and 2018. The main problem of the study is to seek an answer to the question of "How is the family phenomenon included in social studies textbooks between 1978 and 2018?". In this context, the sub-problems of the study are as follows: According to the family phenomenon in social studies textbooks;

1. What is included regarding relationships between individuals within the family?
2. What is included about women in the family?
3. What is included about the families of famous people?
4. What is included regarding the legal status of the family?
5. What is included regarding the relationship between family and Islam?
6. What is included regarding the function of the family?
7. Which family types are included?

Method

Under this heading, the research design, data sources, data collection and analysis methods are included.

Research Design

This study's design, which was structured according to the qualitative research approach, is a multiple holistic case study design. The case study is an in-depth investigation method. In this analysis, one or more cases, settings, programs, social groups or interrelated systems are thoroughly evaluated. Evaluation is defined and customized depending on the place and time of an asset (Büyüköztürk et al., 2020). The case examined in this study is the family phenomenon included in social studies textbooks. A 40-year period was analysed regarding the family phenomenon. It was aimed to achieve an in-depth analysis by employing content analysis. Besides, following the multiple holistic case design, the 40-year period was divided into 10-year periods, and the books reflecting each period were evaluated under the

same theme, first individually and then by comparing them as a whole. As a matter of fact, in the multiple holistic case design, each unit is first examined within itself and then evaluated in comparison (Yıldırım & Şimşek, 2008).

Data Sources of the Study

The data sources of this study, which was conducted with the aim of determining the family phenomenon in social studies textbooks, were selected according to the critical case sampling, one of the purposeful sampling methods. The determinant of this sampling method is the cases that make a point important for some reason. The most important sign is the presence of the judgment that "if there is a case in one place, it is also present in other similar cases." Although examining a few critical cases does not allow for broad generalizations, logical generalizations can be made based on the evidence (Patton, 2018). In this study, the 10-year term interval was chosen as the critical value to understand the changes in textbooks. The action was taken based on the judgment that the changes found in the selected textbooks will also exist in other social studies textbooks in the same period. This is to say that even if a textbook curriculum does not change, the content of the book should be updated by experts within ten years under the influence of social changes. The statement that the period of suitability for textbooks is five years included in the Ministry of National Education's Regulation on Textbooks and Education Tools Section 1 Article 21 confirms this idea (Official Gazette, 2012). Therefore, it can be assumed that a 10-year period will make the change in the books more visible.

The sample of the study consists of 5th-grade social studies textbooks published in 1978, 1990, 2000, 2010 and 2018. 5th-grade textbooks were preferred in the study because primary school social studies lessons had continued to be published without any interruption since 1968, when they were first taught. Secondary school social studies course, on the other hand, was removed from secondary school curriculum between 1985-1998, and interruption in the process was observed. For this reason, secondary school textbooks were excluded from the study. Another

reason is that 5th-grade textbooks cover the same subjects more comprehensively than 4th-grade textbooks since the spiral programming approach is applied in social studies curricula.

The mentioned 1978, 1990 and 2010 textbooks were published by the Ministry of National Education (MoNE), the 2000 book was published by Serhat Publications, and the 2018 book was published by Anadol Publishing. 1978 book was prepared by Ferruh Sanır, Tarık Asal and Niyazi Akşit; 1990 textbook was prepared by the book commission, 2000 book was prepared by Kemal Kara, İbrahim Vural and Nurten Kaman; the 2010 book was prepared by Dr. Samettin Başol, Dr. Fatma Ünal, Hikmet Azer, Abdullah Yıldız and Ömer Faruk Evirgen and the 2018 book was prepared by Erhan Şahin.

This investigation should have started with the 1968 textbook because the social studies course was first offered in primary schools with this name, with the 1968 primary school curriculum. However, researchers could only access the 1978 social studies textbook as the oldest date. This situation shows the weakness of the study.

Data Collection Method of the Study

The data collection method of the study is document analysis. Document analysis can be a data collection method on its own in qualitative research (Yıldırım & Şimşek, 2008). Document analysis is a method used to collect, systematically review, and evaluate official or private records. This method enriches data collection (Ekiz, 2003). The document is a concept related to written, visual and physical materials (Merriam, 1998). In the qualitative research process, the researcher can present a holistic research scheme on the documents, carry out word analysis, and organize the study in its own environment (Creswell, 1998). The documents of this study are textbook texts. While collecting data, all texts in the book from the first unit, excluding the National Anthem, the contents, the textbook organizational chart, dictionary, bibliography and chronology sections, were determined as the field of study. The text of each textbook was from the beginning to the end. In the pre-reading of the textbook, it was decided that the recording unit for the text is the word and

the context unit is the sentence. During the second reading, every sentence related to the family was recorded under the code system, and a code list was created. Thus, the data were prepared for the analysis.

Analysis of Research Data

The data analysis method of the study is content analysis. This method is preferred because content analysis provides inferences from all kinds of verbal, pictorial, symbolic and communicative data and can be used in all kinds of text processing (Krippendorff, 2018). It also enables the texts to be examined in detail and systematically to identify patterns, themes, biases, and meanings (Berg & Lune, 2015). During this study's content analysis process, sentences in the textbooks were coded with concepts, and categories were created according to the relationships between the concepts. Later, categorical and frequency analysis techniques, which are among the content analysis techniques, were employed. The categorical analysis is the first division of a certain message into units and the grouping of these units into categories according to certain criteria. Frequency analysis is the expression of the units that can be counted in frequency type. Frequency analysis can be performed on categorical or thematic analysis (Bilgin, 2006).

The basis of content analysis is categorization and frequency determination (Demirci & Köseli, 2009). Quantitative findings are essential for content analysis. In the literature, the majority of content analysis definitions equate content analysis with frequency and numerical specifications. Therefore, content analysis should include quantitative and qualitative studies that will support each other. It is wrong to think that quantitative methods are only mechanical and numerical, and qualitative methods are only in-depth interpretive (Altunışık, Coşkun, Bayraktaroğlu, & Yıldırım 2005). Based on these explanations in the literature, in this study, the unweighted scores of code lists or categories are shown as frequency (f) and percentage (%). These quantitative statements provide an opportunity to compare both the answers and other sample

groups to be formed in the future (Yıldırım & Şimşek, 2008). After the coding was completed, the codes were categorized according to their relationship with each other because the categories are the basic structure of the analysis to be carried out (Gökçe, 2006).

Research Reliability

Reliability in content analysis depends on whether different coders understand the texts in the same way (İnal, 2004). This study was first conducted independently by two researchers. Internal consistency of coding was computed by the formula of the reliability coefficient = $\frac{\text{Consensus}}{\text{Consensus} + \text{Disagreement}} \times 100$. It is sufficient for the value of coding reliability among researchers to be higher than 80% (Miles & Huberman, 2019). The coding for this study is 89% and the reliability is high. The researchers came together to identify the codes that mismatch, discussed and re-coded according to the consensus result, and came up with the findings. As a result of the interviews, a consensus was achieved on all codes. In every inconsistent coding or decision change related to coding, the coding process was cancelled and it was started from scratch. One week after ensuring consistency in coding style, re-coding was carried out. There was no significant difference (4%) between the two codes.

Research Validity

Gökçe (2006) stated that in the content analysis in the textbooks, there is no validity measurement tool other than the definition of the categories. The validity of the research is ensured if it is thought that the definitions of the categories can be shared with everyone and thus the research scale actually measures what it wants to measure originally. The category definitions in the study are as follows:

Nuclear family: Type of family consisting of mother and father or mother, father, unmarried child, or children.

Extended family: The type of family that includes relatives or distant relatives in addition to mother, father and children.

Single-parent family: The type of family where the child whose parents have never been married or divorced lives with one parent.

Broken family: The type of family formed of divorced spouses.

Female: Adult, female individual.

Famous People: Personality who is known or found fame.

İnal (2004) stated that content analysis has two basic measures of content validity: The first is the suitability of the categories in terms of measurement. In this study, this validity was evaluated by the validity and consistency of the results. The second measure is whether the sampled texts contain sufficient scope and dimensions for the subject to be covered. In this study, all of the textbook unit texts were examined. This shows that validity is satisfied.

Findings

Under this heading of the study, findings about the personalities in the social studies book are included.

Findings Regarding the 1st Sub-Question of the Study: The State of Interfamilial Relationships

In the study, categories of the division of labour and responsibilities, sharing, democracy, helping each other, special days, communication, discipline and control categories in the family were formed from the coding performed regarding the interfamilial relationships. These categories are combined under the Interfamilial Relationships Category. The frequency and percentage distributions of the categories are presented in Table 1:

Table 1. Frequency and Percentage Distributions According to the Subcategories of the Interfamilial Relationships Category

Sub-categories	1978		1990		2000		2010		2018		Total	
	f	%	f	%	f	%	f	%	f	%	f	%
Division of labour and responsibilities	1	100	7	31.8	1	100	19	55.9	26	40.6	54	44.3
Sharing	-	-	-	-	-	-	-	-	23	35.9	23	18.9
Democracy	-	-	14	63.6	-	-	1	2.9	6	9.4	21	17.2
Helping each other	-	-	-	-	-	-	8	23.5	8	12.5	16	13.1
Special days	-	-	-	-	-	-	3	8.8	-	-	3	2.5
Communication-	-	-	-	-	-	-	2	5.9	-	-	2	1.6
Discipline	-	-	1	4.5	-	-	0	0	1	1.6	2	1.6
Control	-	-	-	-	-	-	1	2.9	-	-	1	0.8
Total	1	100	22	100	1	100	34	100	64	100	122	100

According to Table 1, a total of 122 codes were obtained in five textbooks. Of the codes, 54 (44.3%) consist of the division of labour and responsibilities in the family, 23 (18.9%) consist of sharing, 21 (17.2%) consist of democracy, 16 (13.1%) consist of solidarity, 3 (2.5%) consist of special days, 2 (1.6%) consist of communication, 2 (1.6%) consist of discipline, and 1 (0.8%) consist of control subcategories. These results show the general average of a forty-year period. Considering the periods, in 1978, the interfamilial relations category did not exist. Regarding 1990, it is seen that importance was attached to democracy and division of labour in the family. In 2000, a steep decrease occurred, and family relations were seldomly included. In 2010, there was a noticeable increase in interfamilial relationships. In the family, emphasis was placed on the division of labour, helping each other and communication. In 2018, the inclusion of interfamilial relationships reached the peak of all periods. While discipline and control within the family constituted the subcategory that remained weak in general, division of labour, responsibilities, sharing and democracy were the most intense subcategories. The years 1978 and 2000 were remarkably silent about family unity. The only sentence in the 1978 textbook in the subcategory of the Division of Labour and Responsibilities in the Family was as follows: "In order for an individual to be beneficial to himself/herself, his family and the society, he/she must have a job that he/she knows and can do, namely a profession" (Sanır, Asal, Akşit, 1978, p.144). In this sentence, it is stated that having a profession is a responsibility towards the family.

Example sentences selected from 1990 textbooks in the Division of Labour and Responsibilities in the Family sub-category are presented below:

You shared your opinion with your sister, and she agreed with you. You take this thought to your parents as a suggestion. We understand that the management in this family is achieved by joint decisions (p.280). To summarize, a need arises, a suggestion is made regarding the need. This proposal is presented to all members of the family. Everyone expresses their views on the subject, and the subject is discussed. A decision is made altogether, and the decision is implemented. We call such a family the democratic family. Like the democratic family in our example, our country's administration is based on democracy (p.303). Every Turkish citizen knows their duties and responsibilities towards their state as well as their family and society. We also have some responsibilities towards our elders, who do not spare any sacrifices in order to raise. It is like heeding their advice, looking after them when they get older. We know how beneficial it is to obey the rules in family, community and school life for people (p.304).

In the above text, it was pointed out that family members have responsibilities towards the family, parents put great effort into the family, obeying family rules and democratic attitudes in the family are important, and it is necessary to come up with ideas and make decisions together with family members on any issue, and pay attention to each other's opinions.

The only sentence found in the 2000 textbook under the sub-category of Division of Labour and Responsibilities in the Family is: "My family made me subscribe to a magazine as a report card gift." (p.116). In this sentence, the family's rewarding of success is included.

Example sentences selected from the 2010 textbooks under the Division of Labour and Responsibilities in the Family sub-category are presented below:

There is close cooperation, solidarity and understanding among our family members. We all help each other out. Everyone has a role in our family. Chores at home are shared and carried out

in accordance with these roles (p.14). My rights are that an environment suitable for my development as a healthy individual is provided, my educational needs are met, the necessary tools for playing games are supplied (p.22). I help set the table for dinner (p.23). In order for the child to be a good individual in the society, the child must be prepared for life in all aspects of the family. To this end, the child should be raised with a spirit of peace, tolerance, freedom, equality and solidarity (p.26). I also started by helping my father (p.40). In my spare time, I help my brother do his homework (p.184).

In the text above, the importance of cooperation, solidarity, understanding and helping in the family, the importance of paying attention to the opinions of all members of the family is pointed out. It is also mentioned that each family member has certain roles and the home works are shared in line with these roles, the children have the right to study; the parents should provide the necessary conditions for the healthy growth of children, and responsibilities such as taking part of the harmony in the family environment exist.

Example sentences selected from the 2018 textbooks in the Division of Labour and Responsibilities in the Family sub-category are presented below:

Aisha, who lives with her family in Ankara, loves helping family elders with housework. The biggest supporter of Hatice in her life is her family (p.18). We can say that our biggest supporters are our relatives after our family. We share our troubles with our relatives and seek help from them when needed (p.20). Since my grandfather cannot see well enough, I read him a book every evening (p.23). Family members greet each other on religious holidays, and relatives, neighbours and friends are visited (p.50). However, when her father goes to Istanbul, she both attends school and takes care of the animals (p.131). When making decisions in the family, it is important to create an environment where children can freely express their thoughts. Adults have a responsibility to listen to children's thoughts and take them seriously (p.171). Gökçe is able to express her

opinion with his family on issues that concern her own life (p.178).

In the above text, the importance of sharing in the family, helping each other, spending time with family members and relatives, caring about the opinions of family members in making a decision and providing a democratic environment are mentioned.

Findings Regarding the Second Sub-Problem of the Study: The State of Women in the Family

In the study, among the codes formed about women in the family, the categories of shopping, relationship with children, emotionality, food and artistic spirit were created. These categories are gathered under the category of Women in the Family. Findings are presented in Table 2:

Table 2. Frequency and Percentage Distributions of Codes Related to the Category of Women in the Family

Sub-categories	1978		1990		2000		2010		2018		Total	
	f	%	f	%	f	%	f	%	f	%	f	%
Shopping	-	-	-	-	-	-	30	88.2	30	60		
Relationship with children	-	-	-	-	14	-	-	-	14	28		
Emotionality	-	-	-	-	2	-	-	-	2	4		
Food	-	-	-	-	-	2	5.8	2	4			
Artistic Spirit	-	-	-	-	-	2	5.8	2	4			
Total	-	-	-	-	16	34	100	50	100			

According to Table 2, a total of 50 codes were created. Of the codes, 30 (60%) consist of mother and shopping, 14 (28%) consist of relationship with children, 2 (4%) consist of emotionality, and 2 (4%) consist of cooking, and 2 (4%) consist of artistic spirit. Until 2010, women and family relationships were not included. In 2010, the mother-child relationship and the emotionality of the mother were included. The mother and family relationship were the most intense of all times in 2018. This relationship is enacted in the form of family shopping, cooking and artistic activity.

Examples from 2010 textbooks in the category of Women in the Family are presented below:

You know, sometimes we complete our homework and ask permission from our mother to play outside, and our mother says: "Yes, you deserve to play because you did your homework (p.27). When the mother cries, she wants her child.

When the child cries, he/she wants his/her mother (p.75). When his mother came into the kitchen, instead of yelling at him or scolding or punishing him, she said, "Robert, what a nice mistake you made! I have never seen such a large milk lake before. Yes, it happened. Now do you want to play with the milk on the floor before we clean this place together?" (p.76). The painful mother Firdevs Akgul, who lost her daughter Tugba, who was caught in the rubble, cried by hugging her daughter's photo (p.112).

In the above text, it is seen that the relationship of women with children is more intense in the family than the father, the mother assumes great responsibilities in the education of the children and the emotional side of the woman is underlined.

Saying "good morning" to our family when we wake up in the morning, saying "health to your hand," and thanking our mother after breakfast, and seeing our family elders off with a smiling face are examples of socialization within the family (p.19). Dear Diary, I wrote to you earlier that my grandmother is interested in the art of marbling and asked her to teach me how to make a marbling painting, and finally yesterday I did a work of marbling with my grandmother (p.20). While my mother is cooking, I help set the table (p. 23). Mrs. Filiz: Son, I write on this list the products we consume constantly and the products we may run out of in our house soon. Thanks to the list I prepare, I shop faster and do not buy products we do not need (p.144). When Yasemin came home from school, she learned that her mother bought an iron from people who sell things coming to people's houses (p.148).

In the above text, the mother does shopping, teaches conscious consumer behaviour to her child, cooks and sets the table, and the grandmother performs artistic activities with her grandchild.

Findings Regarding the Third Sub-Question of the Study: The State of Including Families of Famous People

In the study, among the codes formed about famous people, the category of famous people whose names are listed in the table was created.

These are combined under the category of Families of Famous People. The frequency and percentage distributions of the categories are presented in Table 3:

Table 3. Frequency and Percentage Distributions of Coding Related to Families of Famous People Category

Sub-categories	1978		1990		2000		2010		2018		Total	
	f	%	f	%	f	%	f	%	f	%	f	%
Ataturk	3	15	11	52.3	7	50	-	-	-	-	21	36.2
Namik Kemal	8	40	5	23.8	-	-	-	-	-	-	13	22.4
Hadrat Muhammad	-	-	-	-	7	50	-	-	-	-	7	12.1
Mehmed the Conqueror	2	10	4	19	-	-	-	-	-	-	6	10.3
Gazhi Osman Pasha	4	20	-	-	-	-	-	-	-	-	4	6.9
Dragut	1	5	1	4.7	-	-	-	-	-	-	2	3.4
Barbarossa	2	10	-	-	-	-	-	-	-	-	2	3.4
Aziz Sancar	-	-	-	-	-	-	-	-	1	33.3	1	1.7
Cahit Arf	-	-	-	-	-	-	-	-	1	33.3	1	1.7
Newton	-	-	-	-	-	-	-	-	1	33.3	1	1.7
Total	20	100	21	100	14	100	12	100	3	100	58	100

According to Table 3, a total of 58 codes were created. Of the codes, 21 (36.2%) are about Ataturk, 13 (22.4%) are about Namık Kemal, 7 (12.1%) are about Hadrat Muhammad, 6 (10.3%) are about Mehmed the Conqueror, 4 (6.9%) are about Gazhi Osman Pasha, 2 (3.4%) are about Dragut, 2 (3.4%) are about Barbarossa, 1 (1.7%) each is about Aziz Sancar, Cahit Arf and Newton and his family. When examined according to periods, family and famous person relationships are rarely mentioned in 2010 and 2018. In 1978, Namık Kemal's relations with his family were mentioned more than Ataturk's. This situation reversed in 1990, and Namık Kemal was not included in the context of his relationship with the family after this period. The same situation was valid for Ataturk in 2010 and 2018. Hadrat Muhammad's relationship with family was mentioned only in 2000. Gazhi Osman Pasha, Dragut and Barbarossa have not been included since 2000. In 2018, only Aziz Sancar, Cahit Arf and Newton appeared in the books in their relationship with the family.

Example sentences from 1978 textbooks in the category of Families of Famous People are presented below:

His father, Murat II, wanted Mehmed to be raised as a very good Sultan candidate. To this end,

he left his education and training to one of the great scholars of the time and told him that he could beat his son when necessary (p.20). (Barbarossa) The four sons of a Turkish family who settled on the island of Lesbos, were interested in shipping and learned to row and use ships when they were young (p. 32). He (Dragut) was the son of a poor farmer (p. 34). (Gazi Osman Pasha) His father was poor. He had come to Istanbul to find a job and work. He brought his son Osman with him. Osman's uncle had come and settled in the capital before (p.77). (Namık Kemal) When he was only eight years old, his mother passed away. Until the age of 17-18, he grew up with Abd al-Latif Pasha. Together with his grandfather, he visited and learned many places in Anatolia and the Balkan peninsula. When he returned to Istanbul, he was reunited with his father and studied Ottoman history with him for a while. He started to write his first valuable poems while he was in Sofia with his grandfather (p.79). (Ataturk) Mustafa is the son of a customs officer Ali Rıza. He was born in Thessaloniki in 1881. Her mother is Zübeyde and Mustafa's father died when Mustafa was very young (p.97).

In the above text, the family relationships of the famous people in their childhood are included. It mostly includes their education and the difficulties they had experienced.

Example sentences selected from 1990 textbooks in the Famous People Category are presented below:

Mehmed the Conqueror, a knowledgeable ruler, Murat II had hired famous Turkish scholars so that he can raise his son well. In order to make sure that he learned the state affairs, he sent him to various provinces of Anatolia at a young age to work as a sanjakkbey (administrative commander of a district) (46). (Dragut) He was the son of a poor peasant from Menteşe (p.48). (Namık Kemal) He was the son of Mustafa Asım Bey. He was raised by his grandfather Abd al-Latif Pasha. Namık Kemal could not go to school regularly because of his grandfather's officer duty (p.150-151). (Ataturk) His father is Ali Rıza and his mother is Zubeyde. Mustafa Kemal's mother, Zubeyde, also did her best for the happiness of the family. Ali Rıza had a sophisticated and mature personality.

Zubeyde was a well-raised, strong-willed lady with a strong character (p.216-217).

In the above text, the education of the famous people, how they are affected by their family situations, and the characters of their parents are included.

Example sentences selected from the 2000 textbooks in the Famous People Category are presented below:

(Ataturk) His father is Ali Rıza and his mother is Zubeyde. Ali Rıza was formerly a customs officer; then, he went into trade. Zubeyde was a well-educated lady with a solid character. This happy family gave importance to their son's education, wanted him to grow up as a good person, and had a regular family life (p.70-71). (Hadrat Muhammad) His father's name was Abdullah, and his mother's name was Amine. When Hadrat Muhammad's father passed away, his grandfather Abd al-Muttalib took care of him. After the death of his grandfather, his uncle Abu Talib took Hadrat Muhammad and raised him. Hadrat Muhammad went to Syria and Yemen with his uncle, who traded caravans. He learned to trade (p.128).

It is seen that the above text includes information about the important people in the families of famous people and their upbringing.

Example sentences from the 2018 textbooks in the Famous People Category are presented below:

Prof. Dr. Aziz Sancar was born in 1946 as the seventh child of a middle-income family engaged in farming in the Savur district of Mardin (p.108). Realizing how smart Newton was, a relative persuaded his mother to send him to university (p.108). (Cahit Arf) He attracted the attention of his family and teachers thanks to his talent (p.111).

In the above text, the economic status of the families and their education are included.

Findings Regarding the 4th Sub-Problem of the Study: The Legal Status of the Family

In the study, only the Legality Category was formed from the codes created related to the legal status of the family. The frequency and percentage distributions of the category are presented in Table 4:

Table 4. Frequency and Percentage Distribution of the Codes Regarding the Legality Category

Category	19781990			2000		2010		2018		Total	
	f	f	%	f	%	f	%	f	%	f	%
Legality	0	13	39.4	7	21.2	10	30.3	3	9.1	33	100

According to Table 4, a total of 33 codes were created regarding the legal status of the family. No data was found in the 1978 book. 13 (39.4%) codes for 1990, 7 (21.2%) codes for 2000, 10 (30.3%) codes for 2010 and 3 (9.1%) codes for 2018 were created. A significant decrease was observed in 2018.

Example sentences selected from the textbooks of 1990 in the Legality Category are presented below:

In a society, the rights of individuals, their debts, establishing a family and their functioning are regulated by the Civil Code. The Civil Code also deals with marriage, divorce, inheritance, and relationships of individuals with each other. Before the Republic, there was not a complete civil law. Women were not given the right to have a say in marriage and divorce. They could not get the job they wanted or get an equal share of the inheritance. Since the family is the foundation of society, firstly, the legal rules regarding the establishment and functioning of the family were established. The Turkish Civil Code reorganized family life with modern rules. The method of official marriage and marriage with a single woman was introduced. The code ensured the equality of men and women in marriage, divorce and inheritance. The Civil Code ensured the equality of men and women in social and economic life (p.200).

In the above text, it is stated that the Civil Code, which regulates the family institution such as marriage, divorce, inheritance, was enacted with the Republic period and the legal status of the family differed from the previous periods.

Example sentences selected from textbooks in 2000 in the Legality Category are presented below:

The rights, debts, establishment of a family and the functioning of the family in the society are regulated by the Civil Code. Also, marriage, divorce, inheritance, and relations between individuals are within the Civil Code's scope. Family life was reorganized with the Turkish Civil Code. The official marriage procedure was

introduced. Marriage with a single woman was accepted. Equality between men and women was ensured in matters of marriage, divorce and inheritance (p.51). It was thanks to Ataturk that women gained their rights in family, society and political life. " (p.58).

In the above text, it is stated that a Civil Code regulating various family situations such as marriage, divorce, inheritance, official marriage, marriage with a single woman, equality of women and men is the effort of Ataturk.

Example sentences selected from the 2010 textbooks in the Legality Category are presented below:

Give examples of the rights you have in the family, school and society. Equality between men and women was achieved in family law with the Civil Code. The principle of official marriage and marriage with one woman was introduced. The woman was also given the right to divorce. An equal share of men and women in inheritance was ensured (p.26). Zaynab's father said: "Of course, we will send you to school. Going to school is your most fundamental right. It is one of their foremost duties of each parent to ensure that their children receive without discrimination between boys and girls. Those who do not fulfil this duty both steal the future of their children and violate the law. "(p.46). Evaluate the attitude of a family who sends their boys to school but not their girls "in terms of being fair or unfair" (p.146).

In the above text, it is stated that various regulations were introduced to the family with the Civil Code, such as official marriage, marriage with a single spouse, the right to divorce for a woman, equal shares from the inheritance, and that every child has the right to education without discrimination between boys and girls.

Example sentences selected from the 2018 book in the Legal Status of the Family category are presented below:

Article 16: No child shall be subjected to arbitrary or unlawful interference with his or her privacy, family, home or correspondence, nor to unlawful attacks on his or her honour and reputation. (p.27). Article 20: Everyone has the right to demand respect for his private and family

life. The privacy of private and family life cannot be touched (p.167).

In the above text, it is stated that based on the constitution the family's immunity and family life should be respected.

The Civil Code on family law in 1990, 2000 and 2010 was included in the textbooks. In 2018, the legal status of the family regarding constitutional rights was mentioned without including the Civil Code.

Findings Regarding the 5th Sub-Question of the Study: Family and Islam

In the study, only Islam and Family Category was created from the codes created related to Islam and family. The frequency and percentage distributions of the category are presented in Table 5:

Table 5. Frequency and Percentage Distributions of Codes Related to Islam and Family Category

Category	1978	1990	2000		2010	2018	Total	
	f	f	f	%	f	f	f	%
Islam and Family	-	-	6	100	0	0	6	100

According to Table 5, a total of 6 codes for Islam and family relations were created. All of the codes belong to the textbook of the year of 2000. No code is available for such a relationship in other years.

The sentences in the 2010 textbooks in the category of Islam and Family are presented below:

After the adoption of Islam, changes occurred in the social life of Turkish women. Many of the rights of women were lost. Differences emerged between men and women in terms of the rights they enjoyed. The main differences between men and women included that a man could marry more than one woman and divorce his wife whenever he wished; women received half a share of the inheritance (p.58). There was a harem (place reserved for women) and selamlık (a place reserved for men) in the houses. A man could marry four women and divorce whenever he wanted (p.134).

According to the above statements, it was stated that the acceptance of Islam caused Turkish women to lose their rights in many areas, the life

order in the houses changed, and women turned into weak-willed entities under the control of men.

Findings Regarding the 6th Sub-Problem of the Study: The Function of the Family

In the study, regarding the codes created about the function of the family, categories of meeting the needs, preparing children for society, raising, economic contribution, protection, socialisation and giving rights were established. These categories were combined under the Family Function Category. The frequency and percentage distributions of the categories are presented in Table 6:

Table 6. Frequency and Percentage Distributions of Codes Regarding Family Function Category

Sub-Categories	1978	1990	2000	2010		2018		Total	
	f	f	f	f	%	f	%	f	%
Meeting the Needs	-	-	-	1	11.1	9	45	10	38.5
Preparing children for society	-	-	-	2	22.2	3	15	5	19.2
Raising	-	-	-	5	55.6	-	-	5	19.2
Economic Contribution	-	-	-	-	-	3	15	3	11.5
Protection	-	-	-	1	11.1	2	10	3	11.5
Socialisation	-	-	-	-	-	2	10	2	7.7
Giving rights	-	-	-	-	-	1	5	1	3.8
Total	-	-	-	9	100	20	100	29	100

According to Table 6, a total of 29 codes were created in the Family Function Category. 10 (38.5%) of the codes are in meeting the needs of family members, 5 (19.2%) are in preparing children for society, and 5 (19.2%) are in raising children, 3 (11.5%) are in economic function of the family, 3 (11.5%) are in protecting children, 2 (7.7%) are in socialization, and 1(3.8%) is in giving rights category. No data was found in 1978, 1990 and 2000 books on the functions of the family. It is seen that the function of the family is mentioned most in 2018.

The sentences included in the 2010 textbooks in the Family Function Category are presented below:

Providing an environment suitable for my development as a healthy individual. Meeting my educational needs. Providing the necessary equipment for me to play games (p.22). The child receives the necessary assistance to fulfill the

responsibilities expected of them in the family and society. It creates a natural environment for the development and protection of all its members, especially children. In order for the child to develop, they must grow up in a happy, loving and understanding family. In order for the child to be a member of society as a good individual, the child must be prepared for life in the family in all aspects. To this end, the child must be raised with a spirit of peace, tolerance, freedom, equality and solidarity. Aydın, who said that they learned that their son had leukemia, moved to Ankara after the diagnosis and reached LÖSEV with their doctors' help (p.26).

In the above text, functions of families to prepare, raise, protect and meet their children's needs for the society are included.

Example sentences selected from the 2018 textbooks in the Family Function Category are presented below:

Since my sister went to school by school bus, my family was paying the service fee, and my sister was spending a lot of time and getting tired while commuting to school (p.14). The biggest supporter of Mrs. Hatice in her life is her family (p.18). Saying "Good morning" to our family when we wake up in the morning, saying "Good health to your hands," and thanking our mother when we finish our breakfast, seeing off our family older members with a smiling face while going to work are examples of socialization within the family. Our family takes care of us from the beginning of our infancy. Thanks to our family, we meet our physical needs such as nutrition and shelter and emotional needs such as love and respect. We live our sorrows and joys with them. Our family prepares us for life. It teaches us to be a part of society as an individual (p.19). You know that the first institution to protect us against the dangers of life is the family (p.26). We should keep in mind that our family will protect us in possible negative situations (p.105).

In the above text, it is stated that the family provides basic material and moral needs, prepares the child for life, and while doing this, family must give children the rights they are entitled to, and it functions to protect and develop children.

Findings Regarding the 7th Sub-Problem of the Study: Family Types

In the study, from among the codes created for family types; extended, fragmented, nuclear and single parent family categories were established. These were combined under the Family Types Category. The frequency and percentage distributions of the categories are presented in Table 7:

Table 7. Frequency and Percentage Distributions of Codes Related to Family Types Category

Sub-Categories	1978	1990	2000	2010		2018		Total	
				f	%	f	%	f	%
Extended	-	-	-	2	33.3	10	83.3	12	66.7
Fragmented-	-	-	-	2	33.3	-	-	2	11.1
Nuclear	-	-	-	1	16.7	1	8.3	2	11.1
Single-Parented	-	-	-	1	26.7	1	8.3	2	11.1
Total	-	-	-	6	100	12	100	18	100

According to Table 7, family types were mentioned 18 times. 12 (66.7%) extended family, 2 (11.1%) fragmented, nuclear and single parent family codes each were included. In 2010, extended and fragmented family types were included twice (33.3%) each and nuclear and single parent families were mentioned once (16.7%). In 2018, extended family was included 10 (83.3%) times, nuclear and single parent families each were mentioned once (11.1%).

Example sentences included in the 2010 textbook in the Family Types Category are presented below:

Here is my family: my mother, my father, my two brothers and I (p.14). Here is our big family, our family members. We have many more relatives and close associates (p.18). With the new project initiated by the Ministry of National Education, children who have been deprived of school due to reasons such as family breakdown, migration, and poverty are enrolled in makeup education. Ali, Hicran, Mahzun, Deniz. They are children who have dropped out of school or have never been able to go to school because of indifference, family breakdown, immigration, poverty (p. 29). Across Turkey, all elementary school 3rd-grade students whose fathers passed away may apply to

participate in entrance examinations until the 30th of May (p.137).

In the above text, nuclear, extended, fragmented and single parent families are mentioned.

Example sentences selected from the 2018 textbook in the Family Types category are presented below:

Today I realized once again that I am very lucky to live in the same house with my grandfather and grandmother because they are my biggest supporters, along with my mom and dad. You know, my grandfather loves to read newspapers and solve puzzles. Thanks to him, I started reading newspapers and solving puzzles (p.20). Uncle Ali lives in Kars with his wife and three children (p.131). Darüşşafaka Society was established to provide non-repaid education opportunities to talented students with insufficient financial opportunities and whose mothers or fathers are not alive (Şahin, 2018, p.160).

In the above text, extended family, nuclear family and single parent families are mentioned.

Conclusion and Discussion

In this study, the family phenomenon was examined in 5th grade Social Studies textbooks between 1978-2018. In the study, first of all, Interfamilial Relationships Category was created. Within the scope of this category, it is seen that division of labour and responsibilities in the family, sharing, democracy, helping each other, special days, communication, discipline and control are included in the textbooks in order of their intensity.

In 1978, there was almost no issue regarding interfamilial relationships. In 1990, it was seen that democracy and cooperation were emphasized in the family. Emphasis on democracy in the family and paying attention to everyone's opinion can be seen as a reflection of the desire to get rid of the military interventions of Turkey in the 1990s and attain a democratic structure. The early 1990s was a period when the impact of the September 12, 1980 coup started to lessen relatively, the need for democracy and liberal economic policies began to strengthen. Turkey opened up to the competition

and developments in the world, and civilian areas different from the state began a surge and develop (Torun, 2005, 498). In 2000, there was a steep fall in the theme of interfamilial relationships, and interfamilial relations were rarely included. This result can be explained by the parallelism of the political atmosphere in which the 1978 and 2000 textbooks were published. Coalition governments were in power in both periods. It might be thought that the educational policies adopted made this issue neglected. In 2010 a noticeable increase was observed in the theme of interfamilial relationships. In the family, emphasis was placed on division of labour, helping each other and communication. Helvacioğlu (Gümüšoğlu) (1994) found that there were examples aimed at strengthening solidarity in the society and the family in the textbooks of the first years of the Republic, but that this situation was invisible later, which is also valid for 1978 and 2000 textbooks. However, this situation is no longer seen in 2010 and afterwards. The inclusion of interfamilial relationships has reached its peak of all periods in all categories in 2018. While discipline and control within the family constituted the category that remained weak in general, division of labour, responsibilities, sharing, and the democratic family were the most mentioned issues. However, as a major deficiency, the issue of direct interfamilial communication was not addressed at all. However, communication skill is one of the first conditions of being successful and happy in social life. These skills must first be acquired in the family, which is the building block of society. Considering that the reason for the conflicts arising in society is the lack of communication (Karadağ, 2015), this deficiency becomes more evident. Society is a whole with cooperation, division of labour and solidarity among its members because society consists of individuals and groups with different characteristics. Just as the society forms successful integrity by making up for other's deficiencies thanks to the division of labour, the family institution, which is the foundation of the society, succeeds as a whole with the support of individuals with different characteristics, that is, cooperation, division of labour and solidarity, and raises healthy individuals for the society (Genç, 1991).

In the 1978 textbook, one's fulfillment of his/her responsibility towards his/her family was associated with having a profession. In 1990, it was pointed out that children have some responsibilities as a debt of gratitude to the family who put in a great effort, and the importance of obeying family rules, the importance of democratic attitudes in the family, producing collective ideas and making decisions together and paying attention to each other's ideas were mentioned. In 2000, the understanding that only the child should be successful in his/her lessons and that the family should reward him/her was included. In 2010, more emphasis was placed on the themes of family unity in the textbook of 1990. In addition to these, cooperation, solidarity, helping each other and understanding were included more. There is a role for each member of the house and a task to do as a requirement of the role. The family is where harmony exists, and acting in harmony is a responsibility. Studying and healthy life is a right. It is the duty of parents to fulfil these responsibilities. This result of the study shows that the result of Çayır (2014) regarding children not being entitled subjects is not valid for the 2010 social studies textbooks. In 2018, in addition to all these, spending time with relatives and strengthening ties with relatives were found as important responsibilities.

In the textbooks of 1978 and 2000, when democracy weakened, the responsibilities and rights of family members were avoided. In times of democratic society, the subject of responsibility and rights in the textbooks are included more intensely as a reflection of growing democracy.

The fact that categories such as harmony, cooperation, and solidarity in the family are included in the textbooks shows that the state has adopted a structural-functionalist social organization approach. According to this approach, any concrete structural unit of an organization consists of the composition created by the role, value, norm and unity. There is no role that is not an element of unity, or there can be no unity that can be achieved without individual roles (Baltacı, 2019).

In the textbooks as a whole, women were more associated with shopping and children. In addition to these, the motherhood and emotionality of the

woman, feeding her family and artistic aesthetic spirit are also included. Between 1978 and 2010, the relationship between women and family was not included in the textbooks. Women were more associated with children in 2010 and were addressed in terms of her compassion and role as an educator in the division of labour. By 2018, the relationship between women and family reached its peak level of all time. Women go shopping as conscious consumers and manage the family budget. They are the nourisher and organisers of the family. They are also associated with the fine arts. These results of the study are parallel with the results of Sönmez (2020), Bilgin (2019), Çimen, Bayhan (2019), Taştekin (2019) as well as Çeçen's (2015) study associating women with motherhood and shopping.

Among the famous people, the relations of Atatürk, Namık Kemal and Hadrat Muhammad with their families were mostly mentioned. Apart from these, relations of Mehmed the Conqueror, Gazhi Osman Pasha, Dragut, Barbarossa, Aziz Sancar, Cahit Arf and Newton with their families were mentioned. The relationship between family and famous people is almost absent in 2010 and 2018 and seems outdated. In 1978, Namık Kemal's relations with his family were mentioned more than Atatürk's. This situation reversed in 1990, and after this period, Namık Kemal was not included in the context of his relationship with his family. The same situation was valid for Atatürk in 2010 and 2018. Atatürk narratives continued but were dealt with outside the context of the family. The relationship of Hadrat Muhammad with his family was mentioned only in 2000. Gazhi Osman Pasha, Dragut and Barbarossa have not been included since 2000. This can be explained by the fact that the textbook writers began to move away from the tradition of structuring their work in the center of charismatic political figures. In 2018, it was seen that only Aziz Sancar, Cahit Arf and Newton were mentioned in the books in the context of their relations with the family. It is important that these figures are scientists, not statesmen and political figures. Overall, it has been determined that the family relations of the famous people in their childhood and their education and the difficulties they experienced were mostly mentioned. While

the roles of their families were included in the upbringing of famous people, it was emphasized that many children were people who went through difficult conditions and became recognized. Thus, it is understood that it is aimed to help children who may be exposed to various difficulties in their lives gain resistance in their struggle for life.

No data was found in the 1978 book regarding the legal status of the family. In this regard, although there was a concentration in 1990, a decrease in 2000, an increase in 2010 and a significant decrease in 2018 was observed concerning this subject. There does not seem to be any particular consistency in this regard. In 1990, it was stated that a Civil Code regulating various family situations such as marriage, divorce, inheritance, official marriage, marriage with a single woman, equality of women and men was the effort of Atatürk. In 2000 and 2010, the themes of 1990 continued to be covered. In addition to these, children's education was included as a right. These results of the study are consistent with the results of Çimen and Bayhan (2019). Simultaneously, it is parallel with Çelik's (2016) conclusion that the Republican era women are mentioned in the context of more acquired rights. In 2018, without emphasizing the Civil Code, the immunity of the family and respect for family life were included based on the constitution.

Islam and family relations were included only in 2000. Accordingly, it was stated that the acceptance of Islam caused Turkish women to lose their rights in many areas, the life order in the houses changed, and women became a weak-willed entity under the control of men, and Islam was addressed negatively. This result of the research is similar to Çelik (2016). This situation is also compatible with the political atmosphere of the period. In this period, the concern of the official administration to protect secularism increased, and the inclusion of religious symbols and behaviours in the public sphere became a matter of debate.

No data was found in 1978, 1990 and 2000 books on the functions of the family. The most frequent data is included in the 2018 textbook. Accordingly, the function of the family is to meet the needs of family members and prepare children for society.

In addition, it has financial, protection, socialization functions and functions of protecting the rights of children. It was seen that that among biological function, one of the functions specified by Kır (2011), is not included.

Family types were not included in the textbooks of 1978, 1990 and 2000. While family types were included in the 2010 and 2018 textbooks, the extended family was seen the most. In 2018, the extended family stood out significantly compared to other family types. Nuclear, fragmented and single-parent families are also included as one-sixth of the extended family. According to Ünal (2013), extended families represent traditional values while nuclear family represents modern values. The nuclear family is deprived of the opportunities to benefit from the experiences of the older generations and has differentiated values. While the extended family strives to be self-sufficient, the nuclear family is open to the outside world. As a result, the rate of divorce increases, extramarital relationships are reflected as normal relationships, the care of children in institutions becomes widespread, the family turns into complete consumers and is stimulated for the luxury consumption. In this context, it can be thought that the author of the 2018 textbook included the extended family with the concern of preserving the traditional family structure.

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Analysis of Some Nutrition Habits of Children with Moderate and Severe Intellectual Disability

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Abstract

As a case study, the paper was planned and applied in order to identify nutrition characteristics of children with moderate and severe intellectual disability, some nutrition habits, and food consumption frequencies and treatments of families towards their nutrition. The sample of this research is included by 82 children and their parents at the age of 5-18 with moderate and severe intellectual disability who continue their education at Aksaray. Data of the research were collected between January-February 2018 from mothers by using questionnaires in face to face interview and some of the questionnaires were distributed and collected after making necessary explanations to some of them. Descriptive statistical analyzes such as percentage (%) and frequency (n) were made by SPSS package program. Chi-square (χ^2) significance test was used for the statistical evaluation of the data collected of this search. In evaluating the food consumption frequency, a scoring system was used, using the formula $T = 5T1 + 4T2 + 3T3 + 2T4 + 1T5$. In order to compare foods with each other in terms of frequency of consumption, the percentage is calculated between the total score set for each food item and the highest total score that if this food consume every day. 73.2% of the participants were male and 26.8% were female. Age of the children ranged from 4 to 18, with an average of 10.71 ± 0.52 years. In the study, 46.3% of mothers stated that they can eat their own meal when they were asked "how does your child consume their meals?" 46.3% of them pointed that they sometimes eat with support of someone else, 7.4% stressed that they eat sometimes themselves and sometimes with the support of others. Mothers of 44 children who were unable to feed themselves stated that they can't reach the independent nutrition stage. 39.1% of them told that they polluted the environment, 37.0% indicated that they cannot keep the spoon, and 23.9% complained that it took too much time for them.

Key Words: Moderate and Severe Intellectual Disability, Nutrition, Nutrition Habits, Food Consumption Frequency.

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Öz

Bir durum saptaması olan bu çalışma, orta ve ağır düzeyde zihinsel yetersizliği olan çocuk ve ergenlerin beslenme özellikleri, bazı beslenme alışkanlıkları ve besin tüketim sıklıkları ile ailelerin çocuklarının beslenme konusundaki davranışlarını belirlemek amacıyla planlanıp yürütülmüştür. Bu araştırmanın çalışma grubunu, Aksaray’da eğitim görmekte olan 5-18 yaş grubunda yer alan ağır ve orta düzeyde zihinsel yetersizlik tanısı almış 82 çocuk ile anneleri oluşturmuştur. Araştırma verileri anket formu kullanılarak, Ocak- Şubat 2018 tarihleri arasında karşılıklı görüşme tekniği kullanılarak Aksaray’da bulunan orta ve ağır düzeyde yetersizliği olan bireylerin eğitim aldığı okullarda velilerin bir kısmına yüz yüze uygulanmış, bir kısmına ise gerekli açıklamalar yapıldıktan sonra dağıtılmış ve toplanmıştır. Verilerin istatistiksel değerlendirmesinde SPSS paket programı ile gerekli istatistiksel analizler yapılmıştır. Besin tüketim sıklığı $T=5T1+4T2+3T3+2T4+1T5$ formülünden yararlanılarak puanlanmıştır. Araştırma sonuçlarına göre, çalışma kapsamındakilerin %73.2’si erkek, %26.8’i de kızdır. Çocukların yaşları 5 ile 18 arasında değişmekte olup, ortalama 10.71 ± 0.52 yıldır. Çalışmada, annelerin %46.3’ü çocuklarının kendi başına yemeğini yiyebildiğini belirtirken, yine aynı oranda %46.3’ü bazen başkasının desteğiyle, %7.4’ü de bazen kendisi bazen de başkasının desteğiyle yediklerini ifade etmişlerdir. Kendi başına beslenemeyen 44 çocuğun annesine bunun nedeni sorulduğunda, %39.1’i etrafı kirlettiği, %37.0’ı kaşığı tutamadığı ve %23.9’u da fazla zaman aldığı için bağımsız beslenme aşamasına ulaşamadığını belirtmiştir.

Anahtar Kelimeler: Ağır ve Orta Düzeyde Zihinsel Yetersizlik, Beslenme, Beslenme Alışkanlıkları, Besin Tüketim Sıklığı.-

Introduction

Growth and development are under the effects of factors such as nutrition, gender, genetic structure, environmental factors, socio-economic status, traditions and culture. The most important of these is undoubtedly nutrition (Vançelik et al., 2007). Nutrition (Baysal, 2007), defined as getting and using nutrients that will provide enough of each of the energy and nutrients necessary for long-term growth, development, healthy and productive life in the most economical way without losing nutritional value which has great importance in childhood and adolescence period in which physiological, psychological, social development and growth rate is very high (Köksal, 2007). Daily nutrients not only meet all the necessary nutrients to support growth and development throughout life, but also provide a balanced energy intake with energy expenditure. Adequate and balanced nutrition can protect and improve health and reduce the risk of chronic diseases (Ergün, 2003), adequate and balanced nutrition is providing exact and complete energy and nutrients which are necessary for the normal life and work of the body according to the age, gender and special condition of the individual (Aykut, 2011). Adequate and balanced nutrition is important for the development of infants, child and maternal health, the establishment of a strong immune system, reduction of the risk of non-communicable disease, and healthy aging. Malnutrition coupled with weakness in the immune system, increased susceptibility to diseases, impaired physical and intellectual disability, and reduced productivity is a serious threat to human health (WHO, 2013a; WHO, 2013b). Taking energy and nutrients to meet body needs in the recommended quantities is very important especially during the youth period. Inadequate and unbalanced feeding of young people during this period may cause malnutrition, obesity, cardiovascular diseases, anemia, vitamins and mineral deficiencies, growth and development deficiencies (Casey et al., 1992, Kapi and Bhavna, 2002). Nutrition is essential to support the quality of life of children with impaired intellectual disability, but it is often negatively affected by eating problems seen in these children (Gal et al.,

2011). Despite the fact that the life expectancy of individuals with intellectual disability has increased in recent years, the mortality rates are quite high compared to the general population. Among the causes of premature death in intellectual disability individuals there are; the severity of inadequacy, the decrease of ability to move, the difficulties in nutrition, and the presence of epilepsy (Scheepers, 2005). Nutrition related problems, which are among early causes of death, are common in individuals with intellectual disability (Jansen, 2004).

Intellectual disability was defined by the American Association of Mental Strain (AAMR) as "an inadequacy that begins before the age of 18, characterized by meaningful limitations seen in both mental functions, concepts, and adaptive behaviors manifested in social and practical skills" (American Psychiatric Association, 2013). Defining the intellectual disability situation plays an important role in determining the individuals with inadequacy and in providing special education opportunities in line with their needs. However, individuals with intellectual disabilities are not a homogeneous group. Since they have significant differences between each other, definition of intellectual disability does not adequately reflect these differences. For this reason, individuals with intellectual disability need to be classified according to their common characteristics (Eripek, 1996). According to the IQ levels resulting from the psychometric evaluations of the degree of intellectual disability of the World Health Organization (WHO); (IQ:52-69) is mild, (IQ:36-51) is medium and (IQ: 20-35) is deep intellectual disability (WHO, 1980). There is another classification of the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5) published in 2013. According to this, the individuals with intellectual disability are classified according to their intelligence parts and they were grouped as light (IP: 50 / 55-70), middle (IP: 35 / 40-50 / 55) and severe (IP: those below 20/25) (American Psychiatric Association, 2013).

There are many risk factors that can cause health problems in the lifestyles of people with intellectual disabilities. One of them is nutrition

and eating disorders. Nutrition is essential to support the quality of life of children with intellectual disability and nutrition and eating disorders of children with intellectual disability, can cause malnutrition or obesity (Ünal and Özenoğlu, 2016). Particularly these individuals are at high risk for developing malnutrition (AbdAllah, 2007). The most influential factors in malnutrition are eating problems or lack of information on nutrition (Suzuki, 1991). Factors that negatively affect nutrition of children who have intellectual disability are usually related to impaired motor function. In general, the weight of malnutrition is directly proportional to the neuro developmental state (Vargün et al., 2004). Feeding, an essential adaptive function that affects quality of life of persons with the intellectual disability, is a complex sensori motor process that involves integration between the nervous system and the muscles and is affected by environmental factors. Any deficit in structure and/or function can lead to difficulties in performing feeding activities such as chewing, drinking and swallowing. These feeding problems have been linked to various disorders, including intellectual disability, and shown to affect mental, physical, social and educational development (Rezaei, 2011). Due to the motor disorder seen in children with intellectual disabilities, they cannot reach food on foot or take their food to their mouths and oral hygiene procedures such as tooth brushing, which requires skill, cannot be done adequately. For this reason, they are dependent on another person in nutrition activities. The inability of children with intellectual disabilities to use large and small muscles can have difficulties in maintaining hand-eye coordination. In addition, children with intellectual disabilities also have difficulty expressing hunger or food preferences due to speech problems. For this reason, the fact that the person who helped the child in feeding has incomplete knowledge about adequate and balanced nutrition, or lack of proper care about nutrition, causes the child to over or under nutrition (Özgülven, 2015). The impaired oral motor function seen in individuals with advanced intellectual disability and weakened muscles will also cause chewing problems. These patients are often fed with puree-like, semi-solid foods, which lead to constipation (Kömerik et al.,

2012). Constipation has also been reported as a common problem related to poor dietary fibre intake, inadequate fluid intake, and other factors that often accompany physical disabilities such as reduced mobility, low musculature. Chronic constipation and poor bowel function is well documented as common among people with severe intellectual disability (Stewart, 2003). One of the major malnutrition problems in children with intellectual disabilities are dysphagia (difficulty swallowing) (Ünal and Özenoğlu, 2016), masticatory weakness and esophageal reflux. A study in Finland (Simila & Niskanen, 1991) found that 64% of children with severe disabilities were under weight, due to feeding and dietary difficulties. In a study of 128 children with intellectual disability in the northwestern part of Spain, serum biochemical values of children (albumin, transferrin, ferritin, iron, calcium, phosphorus, cholesterol, HDL cholesterol, LDL cholesterol, triglyceride, alkaline phosphatase, transaminase and carnitine) were examined and malnutrition was found in the majority of children with intellectual disabilities according to the results (Sa'nchez-Castres et al., 2003). In addition to malnutrition, obesity seemed to be frequently observed in individuals with intellectual disability. Unhealthy eating habits and inadequate physical activity are the most important factors in the development of obesity (Adachi-Mejia et al., 2007). Interest in seriousness of the problem increases year by year due to incomplete or inadequate nutritional practices and inadequate physical activity made in early life caused by persistent obesity in the adult and many chronic diseases (Haynos and O'Donohue, 2012). A sufficient and well-balanced diet is one of the basic conditions not only for the vital activity of the individuals, but also for the improvement of a whole community. Child are the most critical periods which lifelong habits are acquired. Unhealthy diet habit is one of the risky behaviors seen during this period. Unhealthy diets in child may cause growth failure and obesity (Eker, 2018). It is stated that obesity is seen in 71.7% of individuals with intellectual disability (Köşgeroğlu, 2011). There are many risk factors that can lead to health problems in the lifestyles of intellectual disability individuals. Intellectual disability children are physically less

active than healthy children. In these children, the level of physical activity does not reach the recommended physical activity which is at least 3 times 30 minutes per week. Therefore, the incidence of obesity is higher and the risk of comorbidities is increased due to visceral fat tissue. Obesity in intellectually disabled children and adolescents should be considered as an important public health problem that needs to be emphasized much more (Ünal and Özenoğlu, 2016). Nutritional interventions must be considered to protect against malnutrition and obesity. Nutrition tubes should be used if oral feeding is not available. Energy, protein and micronutrient intake should be routinely monitored and should be avoid from inadequate or overfeeding (Ünal and Özenoğlu, 2016). Oral nutrition (various flavor products, dietary supplements), nutrition with gastrostomy tubes and accordingly enteral nutritional products, are recommended for patients with esophageal reflux disease. Standard polymeric and concentrated polymeric enteral products can be used in these patients. These products are rich in energy, protein, vitamins, minerals and trace elements. It contains nutritional items that support the central nervous system such as carnitine, biotin, choline, inositol and taurine. Carbohydrate and protein modules from modular products can also be used with these patients. The carbohydrate modules contain malto dextrin and are easily soluble and digested by polysaccharides. They are used as an energy source in unbalanced nutrition consumption, general muscle weakness, fluid nutrition, chronic nutritional disorders and frequent infectious diseases. Protein modules are milk proteins in powder form which have high biological value. They contain high amounts of calcium and low amounts of fat. It is used to meet the increased protein requirement in growth retardation and anorexia cases in cases of general nutritional deficiencies, decreased nutrient consumption, frequent infection and decreased muscle strength (Köksal, 2008). Timimi et al., (1997) reported children with selective eating ate a largely carbohydrate-based diet. This finding was replicated by Nicholls et al., (2001), who stated the children in their study "live on carbohydrates". Another study also found starches to be far more

prevalent food group accepted, with children in all group seating twice as much starches as foods from other groups (Williams et al., 2005). In a study conducted on 17 children with refractory epilepsy, the calcium, iron, zinc, vitamin B1- B2 and niacin intakes of the children were ported to be below there commended values (Bertoli et al., 2006). In a study evaluating the nutritional statuses of 50 children with intellectual disability, the protein and vitamin B1 consumption of the children were found to be higher than there commended values in all age groups (Maity and Gupta, 2010). The findings of the study indicated that all subjects were somehow involved with feeding problems. The results also show that mean score of problem in feeding skills (2.41) are most prevalent and aspiration risks (0.37) are of less prevalence among the subjects. Analyses revealed the gender and level of intellectual disability severity are effective factors in feeding problems (Rezaei et a., 2011). This finding was replicated by Hinckson et al., (2013), the nutrition and physical activity questionnaires showed healthy habits at baseline with little room for substantial improvements in most variables. The latter can be due to the limitation of self-reporting where participants report desirable answers. However, some changes in eating behaviors were maintained after 24 weeks. The most notable change was the marked reduction in the consumption of confectionary and chocolates. It seems that the program had a positive impact in changing this particular behavior (Hinckson et al., 2013). Another study, in the 10-13 age group, the folic acid and calcium intakes of girls and boys were below their commended values. In the 14-18 age group, the vitamin C and calcium intakes of girls and the calcium intakes of boys were below their commended values (Nogay, 2013). The studies show that, sensory processing disorders are prevalent among children with intellectual ability and negatively impact their daily routines. Eating, which is a major part of daily routines, is known to be frequently impaired among children with intellectual abilities (Engel-Eger et al., 2016). In a Swedish study describing health concerns in persons with intellectual disability, higher incidence of several nutrition-related health

problems was reported; iron deficiency twice as prevalent, fluid and electrolyte disturbances twice as prevalent and functional digestive problems were five times more prevalent (Sandberg et al., 2017). This study was planned and applied in order to identify nutrition characteristics of children with moderate and severe intellectual disability, some nutrition habits and food consumption frequencies (questions like food consumption patterns, whether they eat by themselves, if not the reasons why they do not, eating patterns, selective eating, the frequency of main meals and snacks, favorite meal, appetite, development, regular vitamin and mineral intake, whether they have eating disorders, if so the reasons why they have disorders, satisfaction from nutrition before they start school) and behaviors of families towards their nutrition (questions like letting children eat whatever they want, urging children to eat even if they are not hungry, letting children eat junk food whenever they want, limiting the amount of food in next meal when they see their children over eat during a meal, how they react when their children do not finish their meal, types of rewards they resort) and a general screening model was used to investigate. For this purpose answers were search within the framework of four main titles to the questions aiming to reveal the general information about the introductory characteristics of the families, the general information about the introductory characteristics of the children, the nutritional characteristics of the children and some nutritional habits, and the effects of the mothers on the nutritional behaviors of their children.

Methodology

Research Model

As a case study, the paper was planned and applied in order to identify nutrition characteristics of children with moderate and severe intellectual disability, some nutrition habits, and food consumption frequencies and treatments of families towards their nutrition and a general screening model was used to investigate. General screening models; "in a universe consisting of a large number of elements, a screening of all or part

of the universe in order to arrive at a general judgment about the universe" (Karasar, 2011).

Universe and Sample

Schools in study group include 1st and 2nd level Aksaray Special Education Application Centre and Turkish Football Federation Special Education Pre-School in which children with moderate and severe intellectual disability in the centre of Aksaray continue their education. Study was carried on the children between 5-18 because the schools in which the study was applied are state schools. Since the youngest boy in these schools is 5, it is identified as the lowest limit. The sample of this research is included by 82 children and their parents at the age of 5-18 with moderate and severe intellectual disability who continue their education at Aksaray Special Education Application Centre 1st and 2nd Grade, Aksaray Special Education Practise Centre and Turkey Football Federation Special Education Preschool. 73% of the participants (n=60) were male and 26.8% (n=22) were female.

Data Collection Tools

Data of the research were collected between January- February 2018 from mothers whose children with moderate and severe intellectual disability take education at schools in Aksaray by using questionnaires in face to face interview and some of the questionnaires were distributed and collected after making necessary explanations to some of them. Before questionnaire form was created, related literature (thesis, essay, notice, scientific research, etc.) was reviewed and the form was prepared by researchers based on previous research and resources (Oğuz and Önay, 2011; Oğuz and Önay Derin, 2013; Turgut et al., 2014; Yıldırım 2015). Questionnaire was prepared by a PhD student who is also an experienced teacher in a school of National Education Ministry and have various studies in the field. Then, it was sent to experts for review and the experts are among teachers working in schools of National Education Ministry and academicians from different universities. The questionnaire form information about familys' identifying characteristics (14

questions), information related to children's identifying characteristics (8 questions), nutrition characteristics and some nutrition habits of children (16 questions) and some practices by mothers on nutrition habits their children (6 questions). In total the form consists of 4 sections and 44 questions. The questionnaire form was formed by open and closed ended questions to present some information about families' identifying characteristics (age, education, marital status, occupation, family type, monthly income, kitchen expenditures, number of children, whether there is a kinship between parents, whether there are any intellectually disabled members in the family, the age of mother when she got pregnant, whether she used folic acid before and during pregnancy, whether she smoked during pregnancy, delivery method), information related to children's identifying characteristics (gender, age, weight, height, birth order among siblings, birth weight, how long they were breastfed and how often they got sick), nutrition characteristics and some nutrition habits of children (food consumption patterns, whether they eat by themselves, if not the reasons why they do not, eating patterns, selective eating, the frequency of main meals and snacks, favourite meal, appetite, development, regular vitamin and mineral intake, whether they have eating disorders, if so the reasons why they have disorders, satisfaction from nutrition before they start school) and some practices by mothers on nutrition habits their children (letting children eat whatever they want, urging children to eat even if they are not hungry, letting children eat junk food whenever they want, limiting the amount of food in next meal when they see their children over eat during a meal, how they react when their children do not finish their meal, types of rewards they resort).

Data Analysis

The results of the study were evaluated by researchers themselves. Descriptive statistical analyzes such as percentage (%) and frequency (n) were made by statistical package for social sciences (SPSS) package program and chi-square (χ^2) significance test was used for the statistical

evaluation of the data gathered from the results of the research. Age was taken as a variable, and a p value of less than 0.05 was considered statistically significant. In evaluating the food consumption frequency, a scoring system was used, using the formula $T = 5T1 + 4T2 + 3T3 + 2T4 + 1T5$. The total scores for each food are collected by multiplying the frequency of food consumed every day by 5, consumed every other day by 4, consumed per week by 3, consumed every 15 days by 2 and consumed per month by 1. In order to compare foods with each other in terms of frequency of consumption, the percentage is calculated between the total score set for each food item and the highest total score that if this food consume every day (Aktaş, 1979).

Findings and Discussion

In this section, there are discussion and findings related to the identification characteristics of families and children, the nutritional characteristics and habits of children and the frequency of food consumption.

Findings About Families Identifying Characteristics

%65.9 of mothers, %75.6 of fathers of 82 children with moderate and severe intellectual disability included in the study were either 35 or older. It was determined that more than half (59.8%) of the children's mothers and nearly half (43.9%) of the fathers were primary school graduates. Majority (91.4%) of the mothers are housewives and nearly half (43.9%) of the fathers are self-employed. A large number of the families (96.3%) participated in the survey are married. 81.7% of the children have a nuclear family, 14.6% extended and 3.7% fragmented family structure. The highest number of children in the 46.3% of the families is 3 and it is followed by 2 (36.6%) then 4 (6.1%). 6.1% of families have 5 children and 4.9% of them have 1 child.

In the study, it was determined that 24.4% of the participants in the study had members with other intellectual disabilities in their families and relatives. It was determined that 29.3% of mothers

and fathers included in the survey had kinship. Considering health consequences of consanguineous marriages, it has been reported that the risk of having a disabled child is higher in this type of societies than normal marriages. The incidence of severe intellectual disability, blindness, hearing impairment and deafness increases in the children of parents made a marriage of consanguineous (İnandı et al., 2016). One of the important factors affecting the child's nutrition is the socio-economic status of the family. Sufficient and balanced nutrition of the child is affected by the factors such as lack of economic power, lack of education and high number of children in the family (Demirel et al., 2001). 52.4% of the families think that their monthly income is not enough and 47.6% are glad with it. It has been determined that families mostly (31.7%) spend 251-500 TL of their income per month for kitchen. Most of the families (70.7%) think that their food expenditure is regular, while 29.3% do not agree.

Table1. Distribution of mothers' according to pregnancy information.

	Number	%
Age of gestational		
18-25	38	46.3
26-30	27	32.9
31-35	12	14.6
36-40	5	6.1
Before pregnancy folic acid supplementation status		
Taken	17	20.7
Not Taken	37	45.1
Does not Remember	28	34.1
During pregnancy folic acid supplementation status		
Taken	21	25.6
Not Taken	29	35.4
Does not Remember	32	39.0
Smoking during pregnancy		
Used	3	3.7
Not Used	79	96.3
Late, force or vacuum birth Experience		
Experience	16	19.5
Not experience	66	80.5

When gestational ages of mothers within the study were asked, it was determined that 46.3% of them were between 18 and 25, 32.9% of them were between 26-30, 14.6% of them were between 31-35 and 6.1% were between 36-40 (Table 1). Due to inequalities in food consumption, education, health and other social benefits, problems of both developed and developing countries coexist in our country. Effect of social inequalities on nutrition begins in prenatal period. Brain, the most important organ of man, develops in the mother's

womb in 2-3 years following birth. The main nutrients affecting brain development in the prenatal period are iodine, iron, zinc, folic acid, B12, B6, E and A vitamins and essential fatty acids. The fact that women do not get enough of these food items before and during pregnancy increases the risk of having a child with brain impairment (Baysal, 1997). In the study, when the parents of children with moderate and severe intellectual disability were asked "did you take folic acid supplementation before and during pregnancy?" few women stated that they received (20.7%, 25.6% respectively), while others stated that they did not take or did not remember whether they took or not. A considerable number of women (96.3%) did not smoke during pregnancy (Table 1).

In Özgüven's study (2015), it was stated that the proportion of children who know the reason why they are different is 16.9%, and 82.5% are because of difficult birth or birth without oxygen rising from other reasons. According to Turkish Statistical Institute (TUIK)(2010) data, the rate of those with intellectual disability due to the problems experienced during childbirth is 16.3%. In this study, it was found that 19.5% of the mothers' experience late, force or vacuum birth.

Findings Related to Childrens 'Identification Characteristics

73.2% of the participants were male and 26.8% were female. Age of the children ranged from 5 to 18, with an average of 10.71 ± 0.52 years. 39.0% of the children were second child of the family, 31.7% were the first, 17.1% were the third, 7.3% were the fourth and 4.9% were the fifth. Considering birth weight of the children 42.7% of them were born between 3001 and 3500 grams. Cognitive development in children is influenced by genetic and environmental factors. It has been determined that the potential of cognitive development in children is genetic, but adequate nutrition and rich stimuli has positive effects on cognitive development. Every year in the world, 1.4 million babies are born with a severe illness that will cause life-long negative consequences for the development of the nervous system. The causes of these diseases are largely unknown. However, due to the low birth weight, it is important to find a link

between intelligence, visual impairment, cerebral palsy, retinopathy, blindness and autism. The incidence of these diseases is 0.6-0.8% in infants weighing between 3.5-4.5 kilograms, while it is 20.0% in infants whose birth weight is less than 1.5 kilograms. Although they seem different diseases, their common point is that they occur in the development stage of the brain. The most important responsibility for the development of the fetus brain belongs to the mother because, about 70.0% of brain cell divisions is completed before birth. Embryo's feeding depends entirely on the health and nutrition of the mother since the placenta is not developed yet at this stage (Demircioğlu and Yabancı, 2003).

Breast milk affects brain development due to both content and effect of breastfeeding experience. Breast milk contains nutrients, growth factors, and hormones that increase brain development and at the same time it promotes cognitive and socio-emotional development of the baby by providing mother-infant interaction (Noğay, 2012). Since breast milk is rich of polyunsaturated fatty acids, it affects brain development, myelinization, retinal functions, and cell proliferation of infants. It is also important for the development of the baby's brain because it contains enough essential fatty acids (Samur, 2008). With the superiority of the quantity and especially the bioavailability of the vitamins, minerals, proteins, carbohydrates and lipids it contains, breast milk is a wonderful food which can meet all the requirements of infants alone for the first six months (Çınar et al., 2012). It is observed that psychomotor development and academic achievement of babies whose breastfeeding duration is 6 months or more are better than the ones whose breastfeeding time is 6 months and less (Oddy, 2011). In the study, it was determined that 12.2% of the children did not take any breast milk while 40.22% of the children took 13 months and more, 25.6% of the children received breast milk for the first 6 months and 22.0% of the children between 7-12 months. Evaluating the frequency of children's illnesses, it is seen that nearly half of them (43.9%) frequently, 37.8% of the children once a month, and 18.3% of them get sick 2-3 times in a year. Individuals with

intellectual disabilities experience more health problems than individuals without inadequacy. However, they do not need too much medical care except for those with severe and very severe intellectual disabilities. The physical appearance and health status of children with intellectual disabilities vary according to the degree of disability. The appearance and motor skills of children with mild intellectual disabilities are generally not different from their peers. This may be slightly different in children with moderate / severe intellectual disabilities. There are distinctive features such as ear, head, eye, and finger structure and weakness of muscles. Children with intellectual disabilities become more often ill than their peers. They do not know how to protect themselves as normal children do (Yılmaz, 2011).

Findings About Nutrition Habits of Children

In the study, 46.3% of mothers (n=38) stated that they can eat their own meal when they were asked "how does your child consume their meals?", 46.3% of them (n=38) pointed that they sometimes eat with support of someone else, 7.4% of them (n=6) stressed that they eat sometimes themselves and sometimes with the support of others. Mothers of 44 children who were unable to feed themselves stated that they can't reach the independent nutrition stage. 39.1 % of them told that they polluted the environment, 37.0 % indicated that they cannot keep the spoon, and 23.9% complained that it took too much time for them. In a study in which eating habits of 117 intellectual disability children in a public school where 7-18 age group children with disabilities continue were compared to nondisabled ones, conducted by Mathur et al. (2007) in India, it is noticed that 60% of intellectually disability children cannot eat themselves. In a study conducted by İspiroğlu et al. (2012) to evaluate malnutrition, anemia and related iron, folic acid and vitamin B12 deficiency in children who can not eat on their own due to neurological disease, it is stated that their feeding is dependent on mothers since 96% of them have severe intellectual disability and nutrition of them is really a serious problem. In his study, Özgüven (2015) stated that 27.4% of children can not eat on

their own. Factors that make food intake difficult for children with disabilities; difficulty in food chewing, difficulty in swallowing food, eating back and sequeezing teeth, hard chewing, constipation due to continuous intake of water, not being able to eat food on his own, insufficiency in feeding and food consumption. Nutritional support is needed because of these problems (Köksal, 2012).

In the study, more than half of the children (58.5%) eat their meals at the meal table, 23.9% in front of the TV, 8.5% eat when they are looked after and 3,7% eat while playing game. In a study conducted on autistic children, it was determined that 68.8% of the children eat at table, 18.7% eat while roaming, 10.0% eat at the floor table and 2.5% eat standing (Girli et al., 2016) and results of study were similar. According to the results of the study, 62.2% of the children and adolescents select meals and 37.8% of them do not. Klein and Nowak (1999) found that 53% of the participants were reported to be reluctant to try new foods. Whiteley et al. (2000) found that eighty-three percent (83%) of parents reported that their child ate a restricted repertoire of foods as their corediet. In an other study, individuals with autism spectrum disorder (ASD) and intellectual disability (ID) engaged in more food refusal behaviors (i.e., problem behavior increasing during mealtime, pushes food away, or attempt to leave area) than those with ID only. In addition, these individuals were found to have more food selectivity (i.e., food type) which has proven to be a diagnostic criterion for ASD (Matson 2007); however, the overall selectivity subscale was not significantly different between groups. Both diagnostic groups (ASD and ID or ID only) evinced feeding and meal time difficulties. Individuals with ASD and ID, on average, exhibited more feeding difficulties than those with ID only, which is consistent with research showing that ASD and ID in combination evince more problem behaviors which have, at least with children with ASD and ID, been proven to be more treatment resistant than ASD alone (Ben-Itzhak and Zachor 2007). It is a study determined that participants in this study were 60 adults with ASD and ID (group 1) or ID only (group 2). Individuals with ASD and ID evinced more behaviorally-based feeding problems, such as food selectivity and

refusal related difficulties relative to their peers with ID alone as assessed with the Screening Tool of feeding Problems (STEP). Those with ID only had more feeding skill difficulties than persons with ASD and ID. Overall, the ASD and ID group evinced more, and more severe feeding and meal time problems (Fodstad and Matson, 2008). Engel-Yeger et al, (2016), found that significant correlations between sensory processing disorders and eating problems were found in each intellectual disability level ($r = .40$, $p < .05$ to $r = .57$, $p < .001$), but most correlations were found among children with moderate and severe/profound level. Energy level significantly predicted aspiration frequency; smell/taste sensitivity significantly predicted food selectivity and food refusal frequency (Engel-Yeger et al., 2016).

Majority of children (91.5%) consume 3 meals a day. 82.9% of the children consumed snacks and 41.2% of those who consumed snacks consumed twice a day. It is seen that 45.1% of the children and adolescents in the study are in favor of all meals, because most of them consume 3 meals a day. One of the issues that should be emphasized about eating habits is the concept of meal. Meals are a concept of daily consumption times. They are divided into two groups as main and snacks. The main meals are breakfast, lunch and dinner, while the refreshments are mid-morning, afternoon and night. While some people only consume at main meals, some people can consume some or all of the main meals and refreshments (Işkın and Sarıuşık, 2017). The most appropriate diet is to consume foods in six main meals, three main meals and three refreshments (Baban, 2010) and the most important point is to distribute the nutrients to be taken daily in three meals in a balanced manner (Baysal, 2006). There are evidences that healthy nutritional pattern behavior is associated with high academic achievement in children. Children who regularly eat 3 meals have higher academic achievement (Ogunsile et al., 2012; Kim et al., 2016). In a study conducted by Turgut and his colleagues on handicapped individuals (2014), it is found that 81 of the participants (66.4%) ate three meals a day, 68 (55.7%) skipped lunches and 47 (38.5%) said that they do not find time for every meal. As much as the number of meals, content of

the meal also affects academic achievement. Sufficient and various feeding, sufficient fruit and vegetable, micronutrient (protein, folate, iron, B vitamins, omega 3, polyunsaturated fatty acids) and fish consumption were associated with better academic outcomes; it has been reported that IQ and memory ability is better in children who consume more fruits, vegetables and home-cooked meals. However, excessive consumption of low-quality foods in children (for example, sugary foods, salty snacks, fast-foods); unhealthy nutrition patterns such as inadequate consumption of dairy products and high nutritional value foods (vegetables, fruits, meat, fish, eggs) were found to be associated with negative overall performance (Meydanlioğlu, 2016). When mothers are asked how they evaluate their childrens' appetite, half of the mothers (51.2%) respond normally. According to the results of a study to determine the nutritional status of intellectually disabled children and adolescents, 6.6% of the children eat lunch at institutions, 73.8% frequently, 21.2% occasionally eat refreshments. When parents were asked about the problems they experienced while eating, in the same study, it was stated that 44.4% of the children chose to eat, 33.2% refused to eat, and 24.9% showed aggressive behaviors during meals. It is determined that 10.0% of children can swallow nutrients in liquid or mash style. While

91.7% of the children frequently stated that they were hungry, 19.1% of them did not express that they are full. According to the parents' evaluation, 18.3% of the children eat less than usual and 14.5% eat more than usual (Özgülven, 2015).

When mothers are asked "how do you evaluate your child's development", more than half (58.5%) gave the answer "normal". It is also observed that 39.0% of the children in the study take regularly vitamins or minerals. In a recent study to examine nutritional intake between children with ASD and typically developing children, Herndon et al. (2009) used a 3-day diet record and found that a large number of both children with ASDs and typically developing children consumed less than the recommended dietary intakes for several nutrients, including calcium, iron, vitamins D and E, and fiber. Children with ASDs were also found to have higher intakes of vitamins B-6 and E and lower intakes of calcium than typically developing children (Herndon et al., 2009). Nutrition support may be needed in the form of vitamin and mineral supplementation. The dietitian or another nutrition professional can also suggest ways to enrich the diet so that every bite contributes to nutritional adequacy in the child's diet. While working on increasing the acceptable foods, nutrition counseling is critical (Cermak et al, 2010).

Table 2. Distribution of children according to their nutrition habits.

	Everyday		Every other day		Once a week		Once in every 15 days		Once in a month		Never		TP	YTP
	n	%	n	%	N	%	n	%	n	%	n	%		
Milk, yogurt and ayran	48	58.5	14	17.1	14	17.1	4	4.9	0	0	2	2.4	346	84.39
Cheese	44	53.7	11	13.4	15	18.3	0	0	2	2.4	10	12.2	319	77.80
Egg	36	43.9	18	22.0	20	24.4	1	1.2	0	0	7	8.5	314	76.59
Honey, pekmez, Jam	23	28.0	12	14.6	22	26.8	1	1.2	5	6.1	19	23.2	236	57.56
Redmeat	9	11.0	5	6.1	39	47.6	14	17.1	10	12.2	5	6.1	220	53.66
Fish meat	1	1.2	1	1.2	30	36.6	20	24.4	14	17.1	16	19.5	153	37.32
Chicken meat	6	7.3	6	7.3	43	52.4	13	15.9	7	8.5	7	8.5	226	55.12
Legume	4	4.9	12	14.6	45	54.9	12	14.6	1	1.2	8	9.8	228	55.61
Vegetable	17	20.7	13	15.9	28	34.1	9	11.0	5	6.1	10	12.2	244	59.51
Fruit	60	73.2	12	14.6	7	8.5	0	0	0	0	3	3.7	369	90.00
Cereals	11	13.4	11	13.4	31	37.8	16	19.5	6	7.3	7	8.5	230	56.10
Soup	34	41.5	26	31.7	15	18.3	2	2.4	1	1.2	4	4.9	324	79.02
Salad	34	41.5	16	19.5	18	22.0	2	2.4	2	2.4	10	12.2	294	71.71
Bologna, salami, sausages	13	15.9	9	11.0	34	41.5	10	12.2	4	4.9	12	14.6	227	55.37
Prepared Fruit Juice	31	37.8	10	12.2	20	24.4	5	6.1	3	3.7	13	15.9	268	65.37
Fizzy drinks	3	3.7	5	6.1	15	18.3	19	23.2	7	8.5	33	40.2	125	30.49
Fries	13	15.9	9	11.0	35	42.7	14	17.1	4	4.9	7	8.5	238	58.05
Tea	39	47.6	9	11.0	9	11.0	2	2.4	1	1.2	22	26.8	263	64.15
Chocolate, sweets	22	26.8	15	18.3	28	34.1	7	8.5	4	4.9	6	7.3	272	66.34

When the mothers were asked the question "are you satisfied with the nutrition of your children before they start education", 59.8% said yes, 40.2% said no. More than half of them (59.8%) indicated that there were positive changes in their children's eating habits after they started school. 53.7% of the mothers responded "yes" when they were asked "Do you think your child has nutrition problems?" 25.0% of the mothers who thought that their child has a nutrition problem stated that their children eat too much, 25.0% of them had said that they eat only few meals, 18.2% pointed that they were reluctant to eat, 15.9% told that they were slow to nourish and % 15.9 stated that they could not chew the food. In literature it is stated that eating disorders are seen among the handicapped individuals such as malnutrition, obesity, chewing and swallowing difficulty, dental problems, gastroesophageal reflux, pica problem (eating and requesting chalk, soil), eating secret food, wanting to eat excessively, eating and distributing food (Marshall et al 2003, Hakverdioğlu 2006). Similar problems have been identified in a study conducted in India (Mathur et al., 2007); 23.9% of children with intellectual disabilities are choosy in eating, 82.9% do not consume solid food, 1.7% could not express their hunger, and 9.4% cannot say that they are full.

It was determined in the Girli and his colleagues study (2016) that (37.8 %) mothers had more than one problem during feeding. In the study, When the mothers were asked the question "Do your children know which foods are healthier for them?" 75% of them stated that their children are now aware which food is healthy for them. Even though children (64.7%) do not like some foods, they sometimes consume since they are healthy.

Percentage of consumptions consumed by children according to their daily consumption is as follows: fruit 90.00 (369 points), milk, yoghurt and ayran 84.39 (346 points), soups 79.02 (324 points), cheese 77.80 (319 point), egg 76.59 (314 points) and salad 71.71 (294 points) (Table 2). As seen in Table 2, yoghurt and ayran (58.5%), cheese (53.7%), tea (47.6%), egg (43.9%), soup (41.5%) and salad (41.5%) were eaten every day by the children and adolescents, legume 54.7%, chicken meat (52.4%), red meat (47.6%), fried food (42.7%) and bologna,

salami and sausage (40.2%) were consumed once a week, and they did not consume fizzy drinks (42.5%) at all. It was determined that 40.4% of the students prefer to use tea as a drink every day. When tea is consumed during meals, iron in the digestive tract combines with polyphenols or tannins in the tea to form a complex that does not dissolve, thus it reduced iron absorption. It is recommended that tea should not be consumed during and after meals especially when consuming animal nutrients (Işıksoluğu, 2001), but 47.6% of the participants drink tea every day (Table 2).

In every part of life, it is necessary to be healthy physically and mentally and to maintain health with enough and balanced nutrition (Baysal, 2007). Adequate and balanced nutrition is perhaps one of the basic conditions and maybe the most important for healthy life of individuals and societies, economic and social development of the world, and promotion of welfare (Turan et al., 2009). Eating habits acquired during childhood and adolescence periods, the most important periods in which habits are acquired and settled, are carried to adulthood and can be transformed into lifelong behaviors. Incorrect eating habits such as inadequate and unbalanced nutrition, skipping meals, one-sided nutrition, frequent and excessive consumption of fast food, and eating behavior disorders affect the health of children and adolescents negatively (Gümüş et al., 2015). Family has great responsibilities to maintain a healthy life. It should also be well known that more attention needs to be given to the nutritional levels of our disabled children with limited activity space because as parents and individuals, it is everyone's duty not to allow health barrier to become another obstacle for them. It is necessary that they should be feed more carefully and they should consume foods that are high in nutritional value (Turgut et al., 2014). Milk and its products (yoghurt, cheese, etc.) are the nutrient groups to be consumed in terms of being the main source of vitamins, minerals, carbohydrates and especially calcium due to the amount of protein and quality for individuals in preadolescent-adolescence period and other age groups which are growth and development periods (Önay, 2002). In this study, daily consumption of milk, yoghurt and ayran was determined as 58.5% (Table 2). In the other study

on children with autism (2016), it was determined that 6.1% of children do not consume milk and dairy products, 8.4% meat products, 13.6% egg, 12.2% legume, 12.2% vegetables, 4.9% fruit, 3.7% bread cereal group and 6% do not consume butter. In the same study, milk and dairy products are the most consumed foods (85.4%). Some of the basic food groups such as eggs, meat, vegetables, fruit, legume are not consumed by children every day (Girli et al., 2016). Inadequate and low quality nutrition in children can disrupt rapidly developing brain and cognitive functions and affect the academic achievement of children. Sufficient and various nutrition, sufficient fruit and vegetable, micronutrient (protein, folate, iron, B vitamins, omega 3, polyunsaturated fatty acids) and fish consumption are associated with better academic outcomes; it has been reported that IQ and memory ability are better in children who consume more fruits, vegetables and home-made meals. However, excessive consumption of low-quality foods in children (for example, sugary foods, salty snacks, fast-food foods); unhealthy nutrition patterns such as inadequate consumption of dairy products and high nutritional value foods (eg vegetables, fruits, meat, fish, eggs) were found to be associated with negative overall performance (Meydanlıoğlu, 2016). In our study, it is determined that percentage of chocolate and sweets consumptions consumed by children is 66.34 (272 points) (Table 2). In intellectual disability children, particularly sugary food consumption can lead to inability to meet the elements required for healthy growth and development, and to excessive weakness or obesity (Özbaş et al., 2018).

It is recommended to consume 4-5 portions of vegetables and fruits a day for adequately and balanced diet (Duyff, 2003). In this study, it was determined that more than half of the students consumed fresh fruits and vegetables every day (73.2%, 20.7% respectively) (Table 2). One of the easiest ways to consume fruit is to consume it as fruit juice (Pisoschi et al, 2009). In the study, it is good that most of the children (73.2%) consume fruit every day and ready fruit juice consumption is 37.8%. Noğay (2013) found that folic acid and calcium intake in children with intellectual disability is below the recommended value.

Özgülven (2015) indicated in his study that, according to the information given by the parents of the children participated in the study, 81.3% of the children eat eggs and fruit willingly and 77.2% of the children eat sugary foods. In the same study, 22.0% of the foods that children refuse to eat are cheese, followed by vegetables with 17.8%. In a conducted study, it is determined that 71.0% of the children do not consume bread daily, 58.1% legume, 48.4% yoghurt, 45.2% egg, 35.5% ayran, 32.3% milk and 48.4% crisps, 29.0% of lahmacun, pide, pizza, hamburger and 22.62% of them do not consume fizzy drinks (Kaleli et al., 2017).

Findings About the Behaviors of Mothers Towards Their Children's Nutrition

Majority of mothers (92.7%) allow children to eat whatever they want. A little more than half of the mothers (53.7%) insisted that children eat food even if they are not hungry, and 81.7% of them allowed children to eat junk food when they want. In their study, Kaleli et al. (2017) found that 45.2% of mothers said yes, 54.8% said no when they were asked "Do you allow your child to eat whenever they want? In our study 70.7% of mothers try to limit amount of food that child would eat in the next meal when they find that their children eat more than usual. Other studies also show that parents have control over their children's eating habits by restricting food access, increasing the pressure on eating, or keeping a close eye to their nutrition type (Birch and Davison, 2001, Birc, 2006). Özbaş et al., (2018) found that 43.8% of the children had problems with nutrition, and 28.1% of the children had missed their meal. 90.6% of the children consumed snacksexcept in their main meals, and children received 1004±435 kcal more energy than the average energy needed perday. Nearly half of the mothers (43.9%) said that they try to make them eat again when they were asked "what do you do when your child does not finish eating the food on the table", 28.8% said that they remove the food, 18.3% told that if children eat the food they are given, they reward them and 9.8% responded that they recommend another type of food. It was determined that mothers use various reward methods. For instance, 53.3% of the

mothers use take them out, 33.3% give sugar, chocolate, chips and 13.4% do what they want. In an another study, it was seen that 40.7% of the families use food to attract the attention of the child to another direction and 65.8% use food to reward the child (Girli et al., 2016)." In their study, Kaleli et al. (2017) found that 41.9% said yes, 54.8% said no when they were asked "Do you prepare food when your child is hungry?", 32.3% answered yes, 67.7% answered no when they were asked "Does your child have dinner regularly every day?", and 3.2% answered yes, 96.8% answered no when they were asked "Do you need to learn about healthy nutrition?".

Results

Age of mothers' of 82 children with moderate and severe intellectual disability within the study were 35 or older (65.9%). It was determined that more than half (59.8%) of the children's mothers were primary school graduates. Majority (91.4%) of the mothers are housewives. 81.7% of the children have a nuclear family. 73.2% of the children were male and 26.8% were female. Age of the children ranged from 4 to 18, with an average of 10.71 ±0.52 years. In the study, 46.3% of mothers stated that they can eat their own meal when they were asked "how does your child consume their meals?", 46.3% of them pointed that they sometimes eat with support of someone else, 7.4% stressed that they eat sometimes themselves and sometimes with the support of others. Mothers of 44 children who were unable to feed themselves stated that they can't reach the independent nutrition stage. 39.1 % of them told that they polluted the environment, 37.0 % indicated that they cannot keep the spoon, and 23.9% complained that it took too much time for them. This study, majority of mothers (92.7%) allows children to eat whatever they want. A little more than half of the mothers (53.7%) insisted that children eat food even if they are not hungry, and 81.7% of them allowed children to eat junk food when they want. It is also observed that 39.0% of the children in the study take regularly vitamins or minerals. There are evidences that healthy eating pattern behavior is related with high academic achievement in children. Children who eat regularly 3 meals are

more likely to have academic achievement, and it is observed in the study that the vast majority of children consume 3 meals a day. Percentage of consumption of food and drink consumed by children and adolescents, according to their daily consumption were found as; fruit 90.00, milk, yoghurt and ayran 84.39, soups 79.02, cheese 77.80, egg 76.59, salad 71.71. In the light of these results, it was determined that 3 meals especially in children and adolescents, regular and highquality meal consumption habit and sufficient micro nutrients, vegetables, fruits, milk and fish consumption, has a positive effect on cognitive performance and school success. Therefore, family, parents, teachers, schools and society have important tasks especially for the consumption of food items that support the development of children's cognitive functions, including gestation and early childhood. Some research has shown that the appearance and motor skills of children with mild intellectual disabilities do not differ significantly from their peers who normal development, and that there are significant differences in children with severe and moderate intellectual disabilities. Although this is the case for the general physical appearance, children with intellectual disabilities are known to be at a lower level than the children with normal development due to the few movements and many other factors in terms of physical fitness parameters. And this is a common point that research in this field is combined (İlhan & Esentürk, 2015). Children with moderate disability in these groups are often noticed in the pre-school period. Physical disability and problem behaviors are more common than those with mildly inadequate disabilities. Academic studies are usually limited to reading skills and teaching of basic concepts. Individuals with severe disability are often noticed at birth or immediately after birth. There are significant damages in their central nervous system. They have difficulty in meeting many personal needs and they need adult support. Their training focuses on communication skills and self-care skills such as toilet, dressing, eating and drinking (Ataman, 2003). Also, studies show that children of intellectual disability are more disadvantaged over weight, obesity, diet, eating, drinking and inactive life style compared to

children who normal development (Curtin et al., 2005; Curtin et al., 2010). In order to place adequate and balanced eating habits, it is necessary for children to acquire eating skills first. Children with intellectual disabilities are more likely to develop eating habits later than children with normal development. Factors that affect the ability of children with intellectual disabilities to give them eating abilities can be physical, sensory, behavioral, and environmental. Deficiencies in the development of small muscle skills, inadequacies in the nervous system, and disorders of the mouth and muscle structures (rabbit lip, half-palate, etc.) and situations requiring dieting can lead not gaining or late gaining of eating skills. Inefficiencies in sight or hearing and inadequate learning environments can adversely affect the acquisition of eating habits. At the same time, some behavioral problems related with eating such as refusing food and withdrawing may negatively impact eating behavior (Varol, 2004). In this context, it will be useful for the people who are responsible for the nutrition of the inadequate individuals to be aware of nutritional problems and possible causes, to be informed about the measures that must be taken to eliminate these problems. Inadequate individuals who are highly dependent on their caregivers particularly those with moderate and severe disability are particularly affected by the dietary habits of their families. Family's eating habits, number of meals, features and quantities of foods they consume and attitudes and behaviors they exhibit towards their children in the feeding influence the nutritional characteristics of their children. Parents should be educated about regular nutrition. They should be informed about the number of daily meals, amount of portions to be consumed at meals and benefits of the foods given, and also they get children gain habit of having regular breakfast. Parents should be trained about nutrition and its importance as well as their children's development. It is also believed that families should be supported by doctors, nurses and dietitians in Family Health Center to monitor their children's development. In-service training of staff in Family Health Centers to understand intellectual disability and to provide more functional care and services will both ease

the work of the staff and make the individual who are inadequate and his / her family take higher quality services. The nutritional statuses of intellectual disability children should be monitored closely, and sufficient nutritional support should be provided in order to ascertain a normal body weight, linear growth, and a higher quality of life.

As the child's intellectual disability leveled up; the physical, emotional, economic, social burden and time requirement of the family increased. The care, treatment and rehabilitation of a child with intellectual disability require more human strength, cost and time for a healthy child. The support of health and psychosocial professionals to care for children who are dependent on self-care needs and who have special education or have severe intellectual disability is of utmost importance both for mother and family health. Training on intellectual disability children and family care and coping requires a multidisciplinary approach (Turan Gürhopur and İşler Dalgıç, 2017). Systematic and effective identification of feeding problems and problematic meal time behaviors is essential in order to inform the physicians and therapists who can be involved with evaluation and treatment (Matson, 1997). Also it is crucial for families to solve nutrition problems, have healthy nutrition habits and adopt suitable nutrition methods for their intellectually disabled children that they can lead a quality life. Nutritional disorders in intellectually disabled children do not only affect themselves, but the whole family is affected by the situation as well and leads to stress in family members. Healthy nutrition is important for the quality of life of intellectually disabled people and their families as much as normally developed children and their families. However, there are few empirically valid studies on nutrition disorders and their solutions. It is very necessary to present scientific based solutions to deal with nutrition disorders for intellectually disabled children, families, educators, experts and related service providers (Meral, 2017). When there is a problem of eating, check whether there is any genetic condition before starting the treatment studies and if there is not eating habits should be emphasized. When habits

are the subject, the most important factor is the family. The processes of care, choice of food, preparation and feeding, amount and frequency of meals, preference of foods in meals carried out by the families apart from the attainment of nutritional habits in children with moderate and severe disability show us how important knowledge level of families in the nutritional status of the individual is. In addition, when it is thought that many of the problems that can be experienced in addition to the inadequacy, which can be achieved by using the existing capacities of the individuals at the highest level with the placement of healthy eating habits, we think that the duties and responsibilities of the families of those with moderate and severe disability will be more. In this regard, family education is important. During the education; It will be useful to focus on gains such as nutritional problems and their possible causes, solution suggestions for the reduce of the problems, determining the nutritional goals suitable for the rate and degree of disability of children, effective reinforcement in gaining the right nutrition habits, in order for children to develop their independent nutrition skills.

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Mathematical Reasoning: Bibliometric Analysis of the Literature

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Abstract

The aim of this study is to examine the literature on mathematical reasoning. In the WoS (Web of Science) database, 545 publications published in different journals until January 2021 were analyzed by using the bibliometric analysis method. The most used keywords by the authors, bibliographic couplings, and common citations were analyzed and visualized through the Vosviewer software. As a result of the analyses, the most common keywords used by the authors in publications related to the field were found to be "mathematical reasoning", "problem solving", and "mathematical thinking". The prominent universities in the publications in the field of mathematical reasoning were determined as "Brigham Young University", "Michigan University", and "Alicante University". In addition, the most influential journals in the field were "Journal for Research in Mathematics Education", "Educational Studies in Mathematics", and "Journal of Educational Psychology". The most influential authors in the field were "Schoenfeld, A. H.", "Carpenter T. P.", and "Geary, D. C.". Finally, when the publications in the field were analyzed, the prominent countries were found to be the USA, Turkey, and Sweden ; and Indonesia and People's Republic of China stand out as the origin of publications that have contributed to the field in recent years.

Key Words: Bibliometric Analysis, Mathematical Reasoning, Bibliometric Mapping.

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Öz

Bu çalışmanın amacı matematiksel muhakeme ile ilgili literatürdeki yayımları incelemektir. WoS (Web of Science) veri tabanında Ocak 2021'e kadar farklı dergilerde yayımlanmış olan 545 yayım bibliyometrik analiz yöntemi ile analiz edilmiştir. Yazarlar tarafından ortak olarak en çok kullanılan anahtar kelimeler, bibliyografik eşleşmeler ve ortak atıflar Vosviewer yazılımı aracılığıyla analiz edilerek görselleştirilmiştir. Yapılan analizler neticesinde yazarların alana ilişkin yayımlarda en çok kullandıkları anahtar kelimelerin "mathematical reasoning", "problem solving" ve "mathematical thinking" olduğu belirlenmiştir. Matematiksel muhakeme alanında yapılan yayımlarda öne çıkan üniversiteler "Brigham Young University", "Michigan University" ve "Alicante University" olarak belirlenmiştir. Ayrıca alana ilişkin yayımların yer aldığı etkili dergilerin "Journal for Research in Mathematics Education", "Educational Studies in Mathematics" ve "Journal of Educational Psychology" olduğu görülmüştür. Alanda en etkili yazarlar Schoenfeld, A.H., Carpenter T.P. ve Geary, D.C. olarak tespit edilmiştir. Ayrıca alanda yapılan yayımlar analiz edildiğinde öne çıkan ülkelerin ABD, Türkiye ve İsviçre olduğu son yıllarda alana katkı sağlayan yayımların menşei olarak Endonezya ve Çin Halk Cumhuriyeti ülkelerin öne çıktığı görülmektedir.

Anahtar Kelimeler: Bibliyometrik Analiz, Matematiksel Muhakeme, Matematiksel Akıl Yürütme, Bibliyometrik Haritalama.

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Introduction

The reasoning skill, which is one of the basic mathematical competencies, is considered extremely important both in teaching mathematics and making sense of mathematics (Sukirwan, Darhim, & Herman, 2018). The NCTM defines the purpose of learning mathematics as learning to communicate, learning to reason, and learning to solve problems (NCTM, 2000). Reasoning skill that is among the purposes of learning mathematics includes many mathematical skills such as making mathematical predictions, presenting mathematical information in different ways, developing mathematical discussions, and making generalizations (MEB, 2015; NCTM, 2000). From this perspective, mathematical reasoning exists in every aspect of mathematics and is very vital in the teaching and learning process of mathematics. However, it should not be forgotten that the development of mathematical reasoning skills cannot be independent of mathematics learning (Bragg, Herbert, Loong, Vale & Widjaja, 2016; Lestari & Jailani, 2018).

Different definitions of mathematical reasoning can be encountered in the literature. One of the most used definitions sees mathematical reasoning as a mathematical ability that students need to understand mathematics (Ball & Bass, 2003), while another definition is expressed as thinking adopted until reaching a conclusion by generating hypotheses in problem solving (Lithner, 2008). As can be deduced from these definitions, mathematical reasoning is one of the important factors affecting mathematics achievement (Ball & Bass, 2003; Umay, 2003). Individuals with mathematical reasoning skills are expected to make logical inferences, use mathematical relations and models, justify solutions while solving a problem, and generalize the solution to new situations (Kadarisma, Nurjaman, Sari & Amelia, 2019; Kurnaz, 2018). The increasing interest in mathematical reasoning in recent years is closely related to the understanding of the importance of mathematical reasoning in teaching and learning mathematics (Lestari & Jailani, 2018).

This study aimed to examine the publications related to mathematical reasoning according to their specific characteristics. For this purpose, the bibliometric analysis method was used in the research, which allows to follow the historical trends of the publications, to follow the developments in the field, and to reveal the specific features of the field (Cobo, López-Herrera, Herrera-Viedma & Herrera, 2011). Thanks to bibliometric research, the publications can be analyzed with statistical and mathematical methods, and the results related to the quality of the publications can be revealed with the findings (Al, Soydal & Yalçın, 2010). Bibliometric methods are used for two purposes: performance analysis and scientific mapping (Noyons, Moed & Van Raan, 1999). Performance analysis aims to evaluate the activities of countries, universities, faculties and departments and the impact of their activities (Cobo et al., 2011). In performance analysis, the effectiveness, the impact, and the joint effectiveness of publications are determined. The effectiveness of the publications is revealed by the number of publications in a certain period, the impact of the publications is revealed by calculating the number of times the publication is cited by others, and the joint effectiveness is revealed by calculating the number of publications jointly published with other people (Noyons et al., 1999). Scientific mapping is aimed at revealing the structure, change, and subdomains of the field (Cobo et al., 2011). Scientific mapping is clusters of cognitively related keywords that emerge as a result of the analysis of synonyms (Noyons et al., 1999). These revealed keyword clusters form the subdomains of the field, and the changes that occur in these subdomains reveal the trends of the field (Noyons et al., 1999).

The database from which bibliographic data is obtained in this study is Web of Science (WoS). The WoS database, especially in the field of social sciences, contains a large number of journals with high impact factors and provides conveniences for researchers when analyzing.

Method

The Purpose and the Importance of the Research

The aim of this study is to examine the publications in the field of mathematical reasoning by considering certain features and criteria and to reveal the dynamics of the field and the performances of scientific actors (countries, universities, institutions, etc.). The study is important in that it is the first in the national literature in this field.

The Process of the Research

In the search made in the WoS database, the studies carried out until January 2021 were examined. While searching, the advanced search feature was used, and the keywords “mathematical reasoning” and “mathematical thinking” were searched in the titles without time restrictions. As a result of the search, 580 publications were reached, filtered according to the types of publications, and 545 publications formed the analysis unit. The distribution of the publications examined in the research by genres is given in Table 1 and the distribution by years is given in Table 2.

Table 1. Distribution of Publications by Types

Publication types	Number of Publications	Percentage
Journal articles	298	55
Proceedings and abstracts	205	38
Books and book chapters	42	7

In Table 1, the distribution of the publications that make up the analysis unit according to their types is given. Accordingly, 55% of the publications that make up the analysis unit consist of journal articles, 38% of proceedings, and 7% of books and book chapters.

Table 2. Distribution of Publications by Years

Publication Years	Number of Publications	Percentage
1980-1985	17	3
1986-1990	24	4
1991-1995	21	4
1996-2000	34	6
2001-2005	41	7
2006-2010	86	15
2011-2015	134	23
2016-2021	223	38

In Table 2, the distribution of the publications in the field of mathematical reasoning by years is given. The publications in the last 5 years constitute 38% of all publications. This can be considered as an indication that publications on mathematical reasoning and mathematical thinking have gained importance in recent years.

Data Analysis

In the study, the publications that make up the data set were analyzed in terms of their specific characteristics (publication year, author, subject, source, references, etc.) with the bibliometric analysis method based on mathematics and statistics (Hoffman & Holbrook, 1993). The threshold value was used to ensure that the data have a regular appearance and facilitate interpretation (White & McCain, 1998). The VOSviewer software was used to analyze and visualize the relationships between authors, sources, countries, keywords, and citations. Analyses of the keywords used by the authors, bibliographic couplings (countries, universities, authors), and common citations (authors, journals, references) were made using the data set via the VOSviewer software. Bibliographic coupling occurs as a result of citing the same publication from two different sources (Garfield, 1988). Co-citation occurs when two different publications are cited in one source (Garfield, 1988). In this case, while bibliographic coupling power does not change over time, common citation power can change over time as the number of publications will increase. The concept of bibliographic coupling and co-citation is shown in Figure 1.

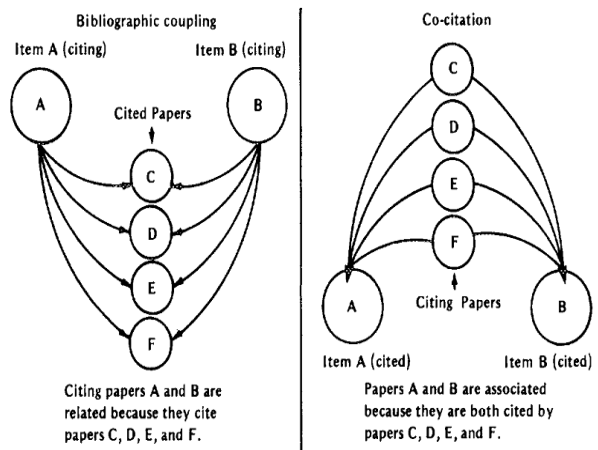


Figure 1. Bibliographic coupling and co-citation (Garfield, 1988).

Attention was paid to some features that should be considered while interpreting the images that appear in the VOSviewer software. The similarity of colors and the formation of lines in the image of the citation link is an indication that the interconnected powers are more intense than the others. In the density image, the colors reveal the most connected items among the analyzed items. As the color of links goes towards red, their connection with others increases. In addition, the closeness of the circles to each other is directly proportional to the strength of the

connection powers. Each color formed is an indication that a different set has emerged.

Findings

Common Occurrences of Keywords

Common occurrences of keywords used in publications are shown in Figure 2. Words used in at least 5 publications as a threshold value were included in the analysis. Of the 933, 20 words met this threshold value. The total weight of links between all keywords was calculated. Accordingly, “mathematical reasoning” was determined as the most used common keyword in the field with a total weight (TLS) value of 23 of 54 occurrences and links. After the keyword “mathematical reasoning”, the words with the highest TLS value were determined as “problem solving (13; 15)” and “mathematical thinking (49; 14)”, with the first number in parentheses being the number of occurrences and the second number being the TLS value. The common occurrences of the keywords used by the authors are shown in Figure 2.

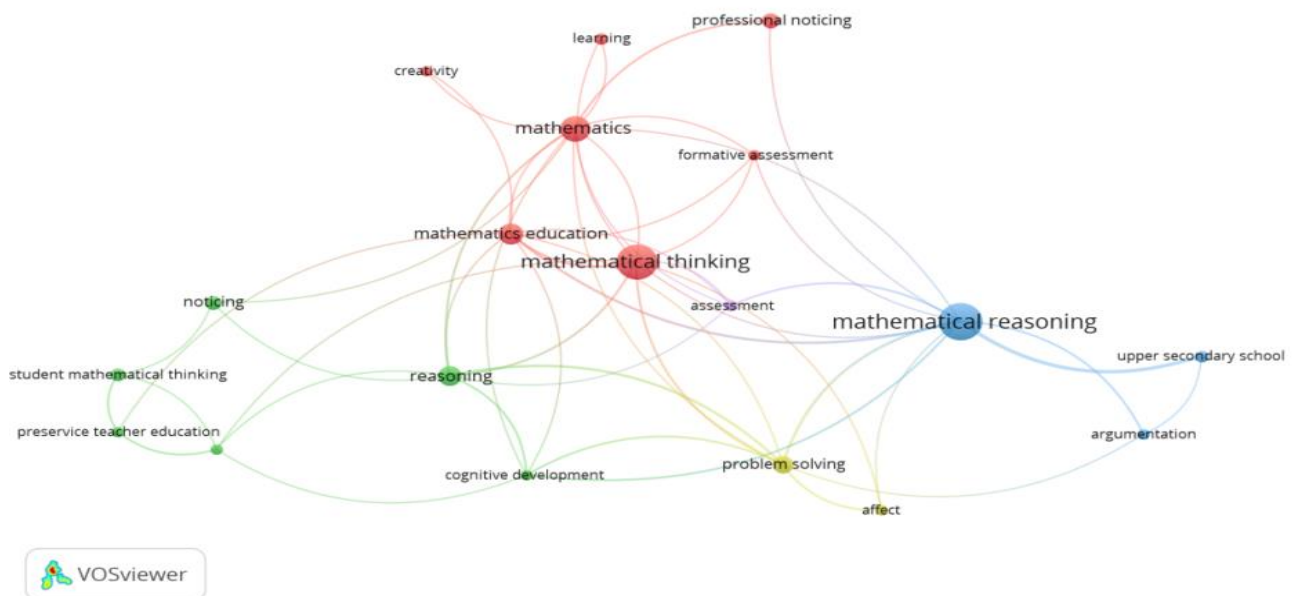


Figure 2. Common occurrences of keywords.

As seen in Figure 2, the size of the circles and the number of common occurrences of keywords are directly proportional to each other. In addition, the keywords related to each other are represented by different colors. The words “Mathematical reasoning”, “Mathematical thinking” and “mathematics” can be expressed as the words that have the most connections with other words. The formation of clusters is shown in Figure 3.

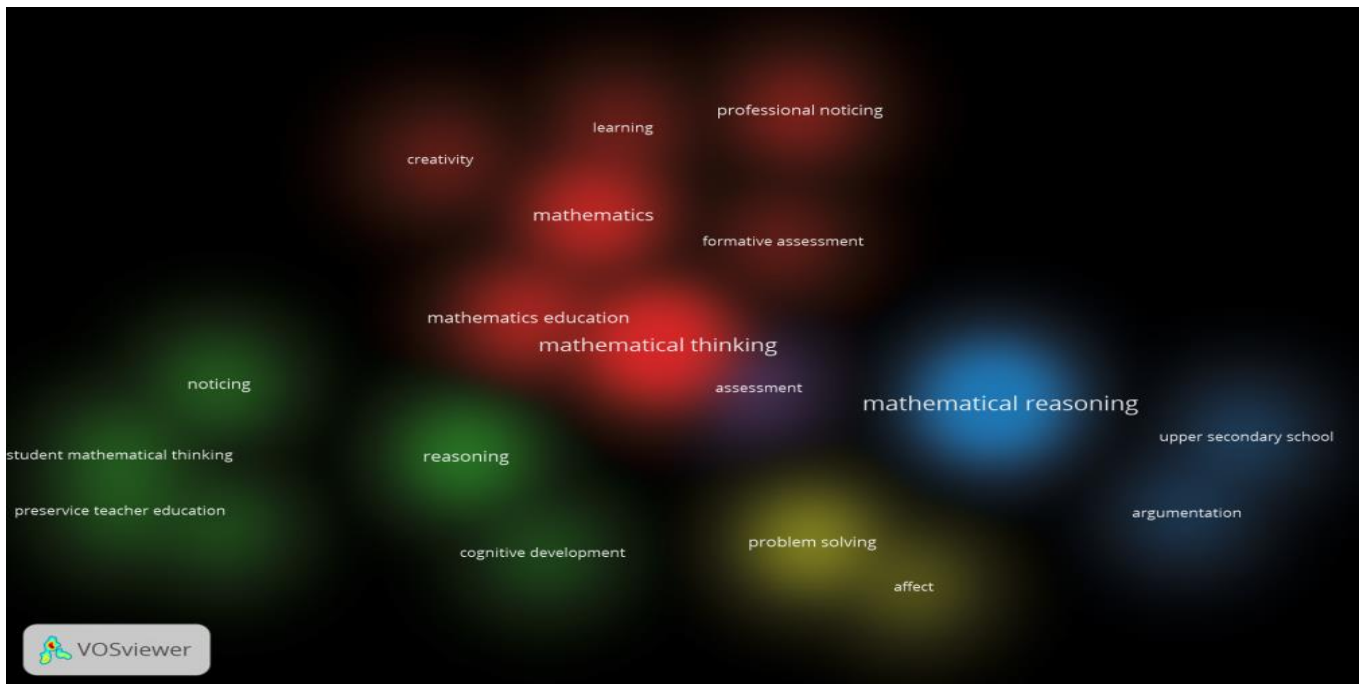


Figure 3. Clusters of keywords.

In Figure 3, 5 different clusters are represented by 5 different colors and the keywords are grouped. On one hand, one of the clusters is composed of the words “mathematical reasoning (54; 23)”, “argumentation (5; 4)” and “upper secondary school (6; 7)” with the first number to show the number of occurrences and the second to show TLS value. On the other hand, another cluster is composed of the words “mathematical thinking (49; 14)”, “mathematics education (18; 14)”, “mathematics (25; 14)”, “formative assessment (5; 4)”, “creativity (5; 2)”, “learning (6; 2)” and “professional noticing (9; 3)”.

Co-citation analysis of authors

When the number of co-citations of the authors was examined, the threshold value was determined as those who were co-cited at least 30 times out of 8327 authors. 28 of the authors provided this threshold value. As a result of the co-citation analysis, the first three of the most influential authors in the field are ranked according to TLS value, with the first number in parentheses being the number of citations and the second number being the TLS value, Schoenfeld, A. H. (83; 1046), Carpenter T. P. (75; 1042), and Geary, D. C. (36; 1002). The values that emerged as a result of the co-citation analysis of the

authors and their maps related to each other are given in Figure 4 and Figure 5.

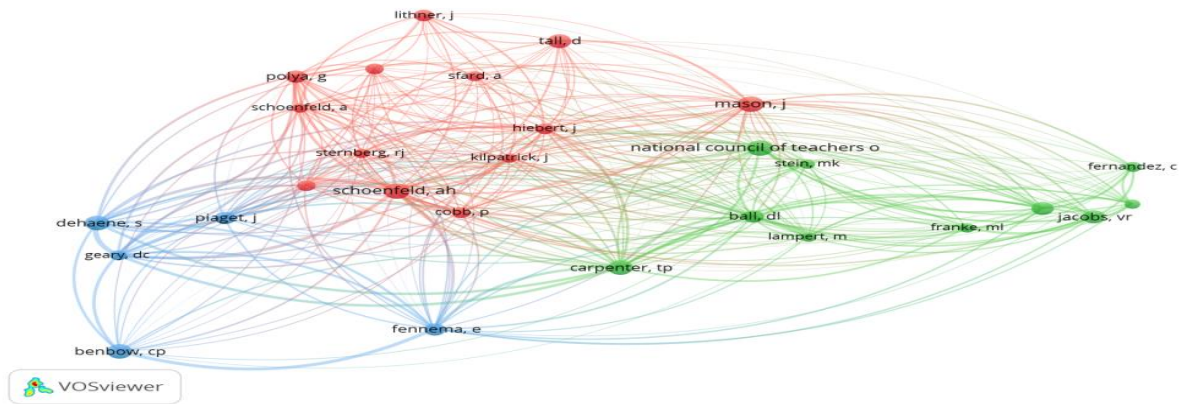


Figure 4. Co-citation links of authors.

In Figure 4, the authors who are most related to each other are shown in 3 different groups and in 3 different colors.

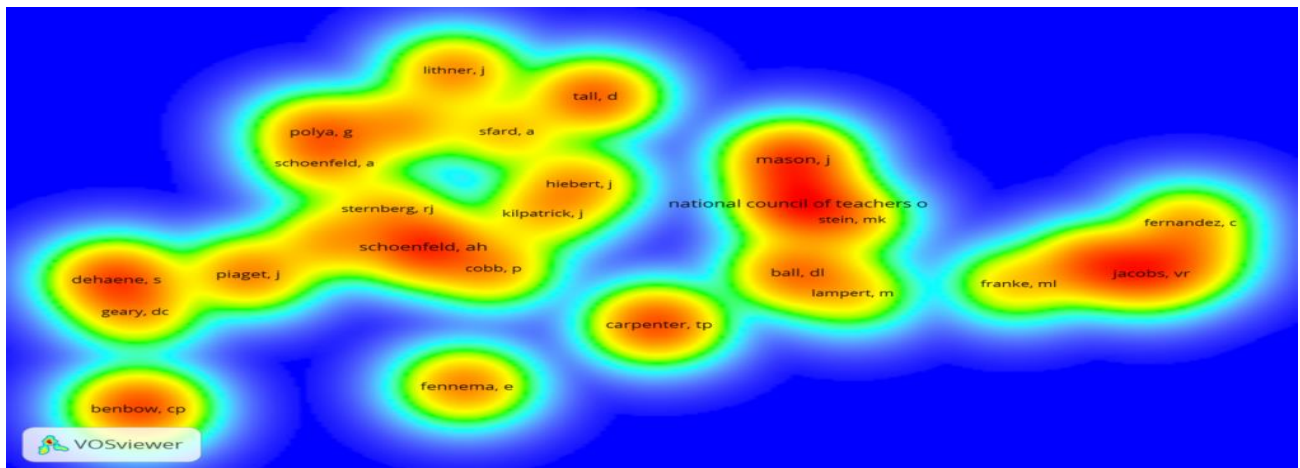


Figure 5. Authors' co-citation review.

As seen in Figure 5, the colors that the authors have are in a transition towards red as the number of their common citations increases. Accordingly, the authors of NCTM (88), Schoenfeld (83), Mason (81), Benbow (77), Carpenter (75), Dehaene (73) stand out as the authors with the highest number of co-citations.

Co-citation analysis of journals

When the co-citation numbers of the sources published in the field are examined, those with at least 50 citations out of 6924 co-cited sources were included in the analysis. From these sources, 28

sources providing the threshold value were determined. The total weight (TLS) of each source's citations and links to other sources was calculated. Accordingly, as a result of the common citation analysis, the first three of the most influential sources in the field, the first number in parentheses to give the number of citations and the second number to give the TLS value, respectively, were designated as "Journal for Research in Mathematics Education (453; 16904)", "Educational Studies in Mathematics (469; 9130)", and "Journal of Educational Psychology (164; 9028)". The values that emerged as a result of the co-citation analysis of the sources and the

maps related to their relations with each other are given in Figure 6 and Figure 7.

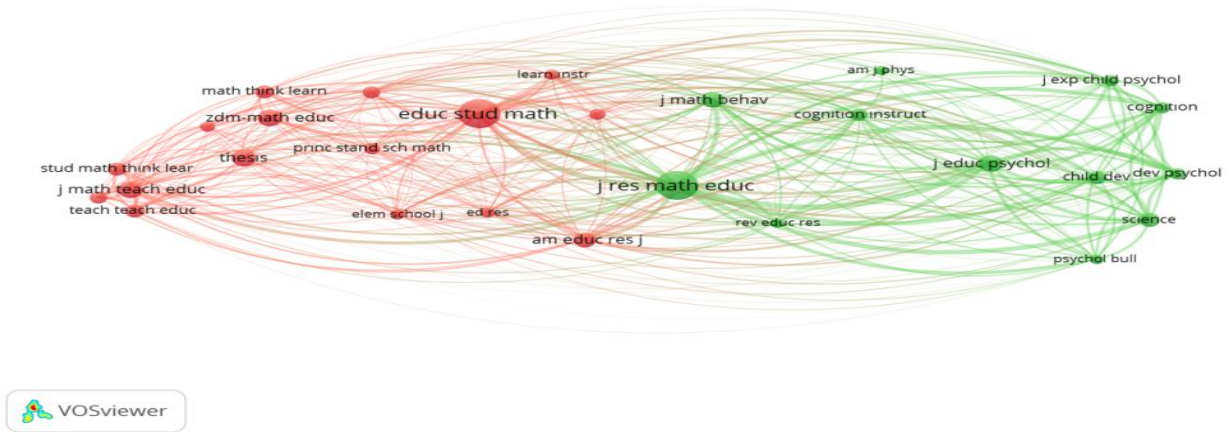


Figure 6. Co-citation review of sources.

When Figure 6 is examined, the sources that are connected with each other are represented by two different colors in two different clusters.

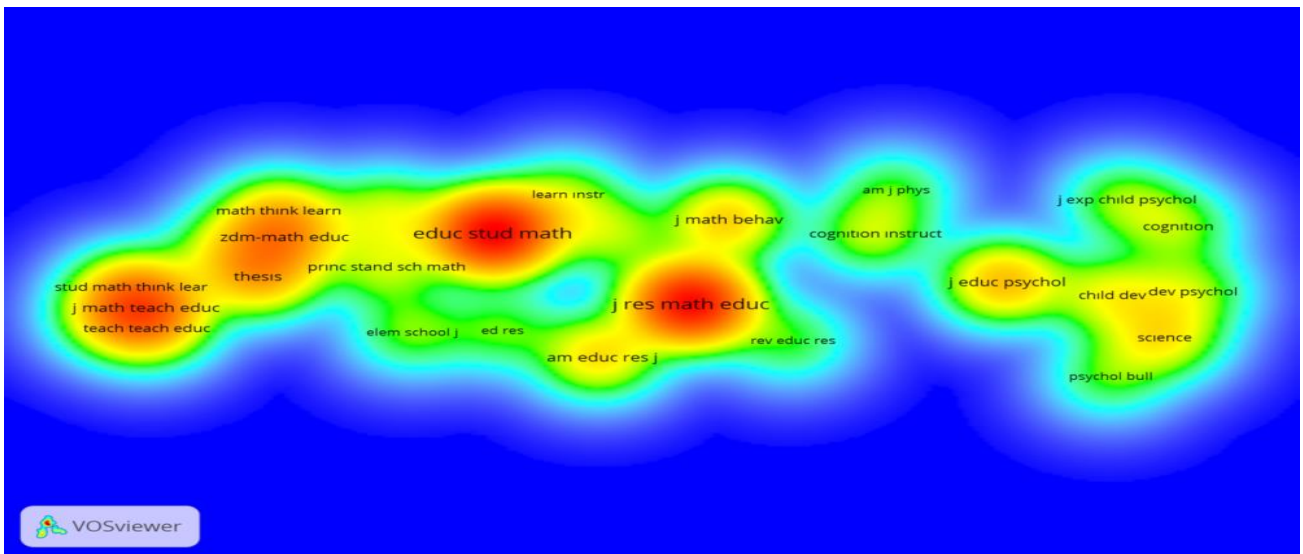


Figure 7. Co-citation review of sources.

As seen in Figure 7, the colors of the sources have different colors from green to red. The colors of the sources with the most common references are close to red. Accordingly, the prominent sources in the field are "Educational Studies in Mathematics (469)", "Journal for Research in

Mathematics Education (453)", and "Journal of Mathematics Teacher Education (167)".

Co-citation analysis of references

When the co-citation numbers of the references were examined, those with at least 10 co-citations out of 13521 co-cited references were included in

the analysis. From these references, 33 publications providing the threshold value were identified. The total weight (TLS) of citations for each publication and its links to other sources was calculated. Accordingly, as a result of the common citation analysis, the first three of the most influential publications in the field, the first number in parentheses to give the publication year, the second to give the number of citations,

and the third number to give the TLS value, respectively, were “Jacobs, Lamb, & Phillip (2010; 41; 142)”, “NCTM (2000; 36; 103)”, and “Fennema, Carpenter, Franke, Levi, Jacobs, & Empson (1996; 16; 78)”. The values that emerged as a result of the co-citation analysis of the references and the maps related to their relations with each other are given in Figure 8 and Figure 9

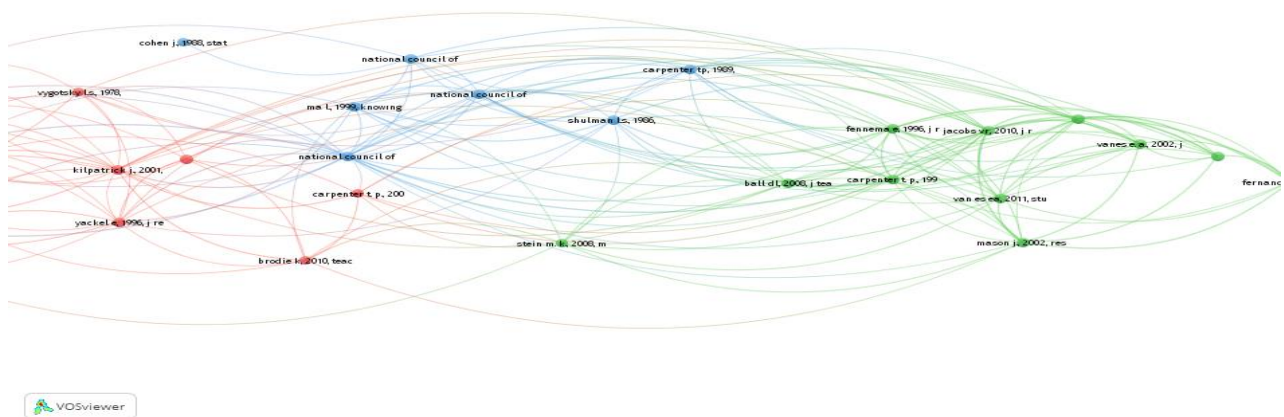


Figure 8. Co-citation analysis of references.

In Figure 8, the references that are related to each other are represented by three different colors in three different clusters. The publications of the authors of Jacobs et al. (2010) and NCTM

(2000) come to the fore and there is a dense network of relations with other authors.

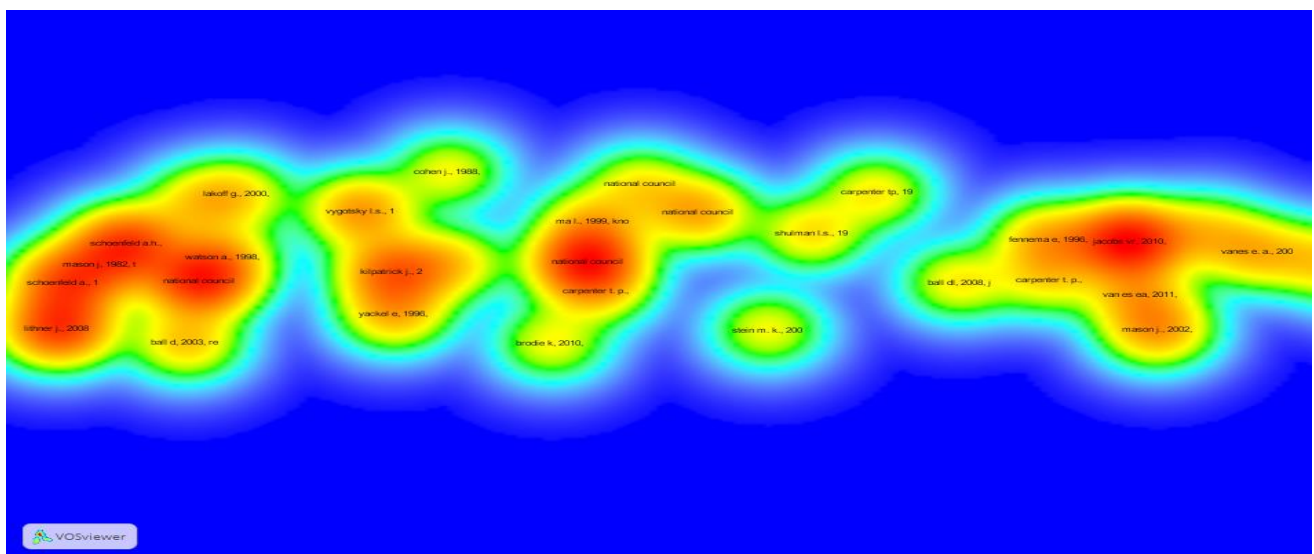


Figure 9. Co-citation analysis of references.

As seen in the cluster density image given in Figure 9, the references with intense redness are the publications with the most common citations. Accordingly, among the prominent publications in the field, the ones with the highest number of common citations were publications that belong to the authors as "Jacobs et al. (2010; 41)", "NCTM (2000; 34)", "Lithner (2008; 32)", and "Schoenfeld (1992; 28)" the first number in parentheses being the year of publication and the second number being the number of joint citations.

Bibliographic couplings of countries

The bibliographic couplings of the countries are shown in Figure 10 and Figure 11. Countries with at least 10 publications were included in the analysis. Of the 54 countries, 14 met the threshold

value. The TLS value, which is the result of the connections of each country with other countries, was calculated. USA ranked first with 143 publications, 3856 citations, and 3008 TLS values. The number of publications, number of citations, and TLS value of the first 5 countries that are bibliographically coupled are given in Table 3.

Table 3. Bibliographic Couplings of Countries

Countries	Number of publications	Number of citations	TLS
ABD	143	3856	3008
Turkey	27	73	1206
Sweden	20	104	963
Spain	25	66	890
Australia	21	198	859

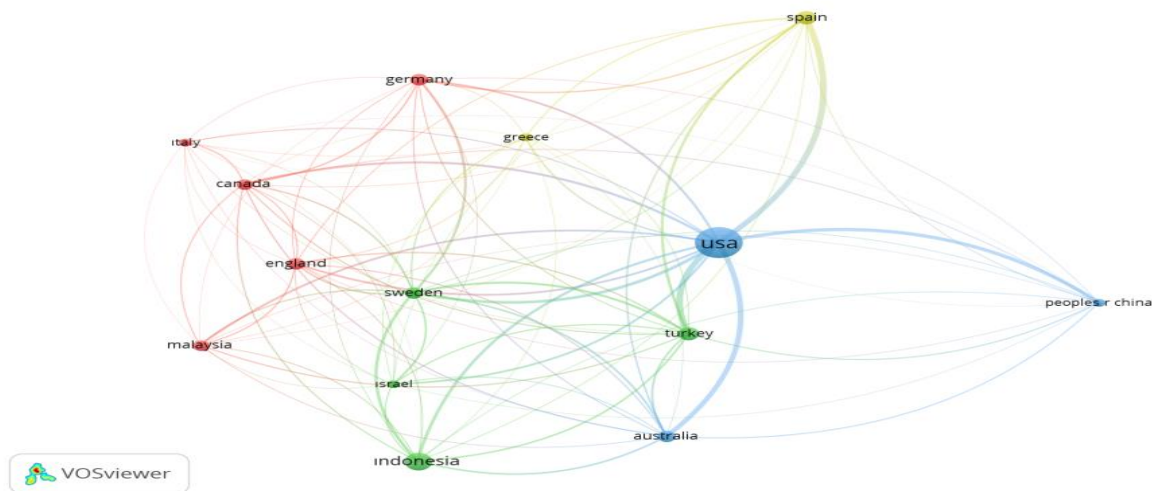


Figure 10. Bibliographic couplings of countries.

In Figure 10, bibliographically coupled and related countries are gathered in 4 different clusters and represented by 4 different colors. The USA is at the forefront as the country with the most connectivity.

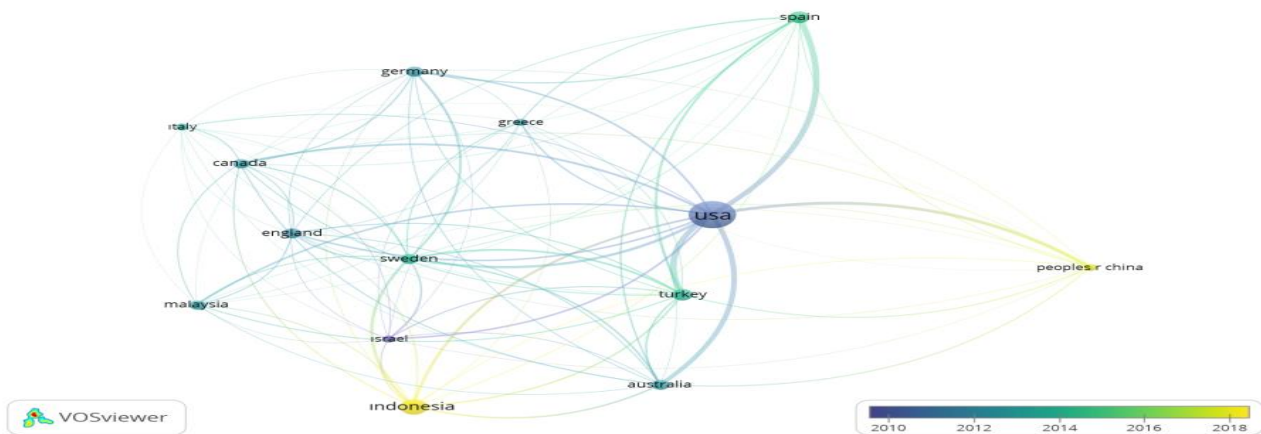


Figure 11. Examination of the publications according to the years that the countries published.

In Figure 11, the relations of the countries that publish in the field and coupled bibliographically with the years of publication are represented by different colors. Accordingly, Indonesia and the People's Republic of China are the countries that have published most in the field in recent years.

Bibliographic couplings of institutions

The results of the bibliographic coupling analysis regarding the institutions of the authors publishing in the field are visualized in Figure 12 and Figure 13. Institutions with at least 5 publications out of 471 were selected as the threshold value and 17 institutions that passed this threshold were included in the analysis. Accordingly, "Brigham Young University", one of

the universities in the USA, took the first place with 7 publications, 22 citations, and 669 TLS value. The top five universities are presented in Table 4 with their publication numbers, citation numbers and TLS values.

Table 4. Information on Bibliographic Couplings of Institutions

Institutions	Number of publications	Number of citations	TLS
Brigham Young Univ.	7	22	669
Michigan Technol. Univ.	5	31	667
Alicante Univ.	10	43	616
Seville Univ.	6	15	455
Michigan State Univ.	7	91	363

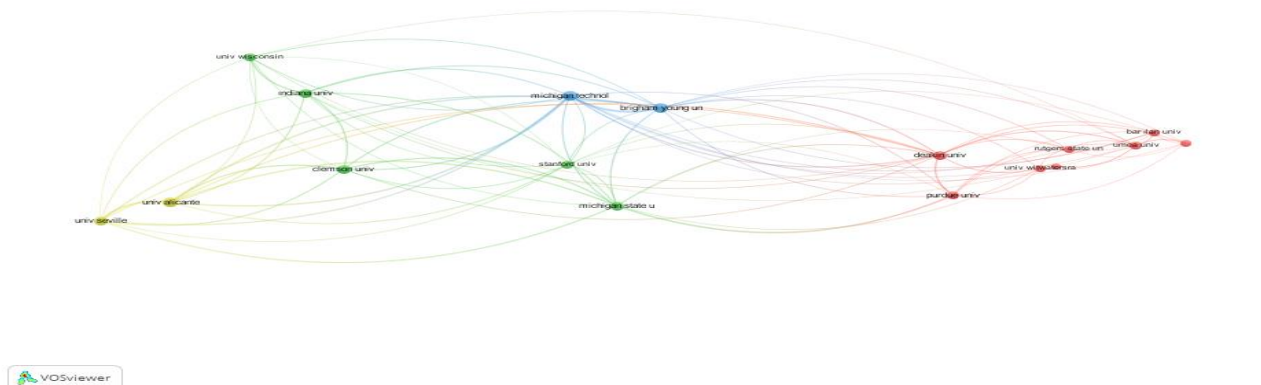


Figure 12. Bibliographic couplings of institutions.

As seen in Figure 12, the publications made in the field are in 4 different clusters according to their bibliographically coupled institutions and they are represented by 4 different colors.

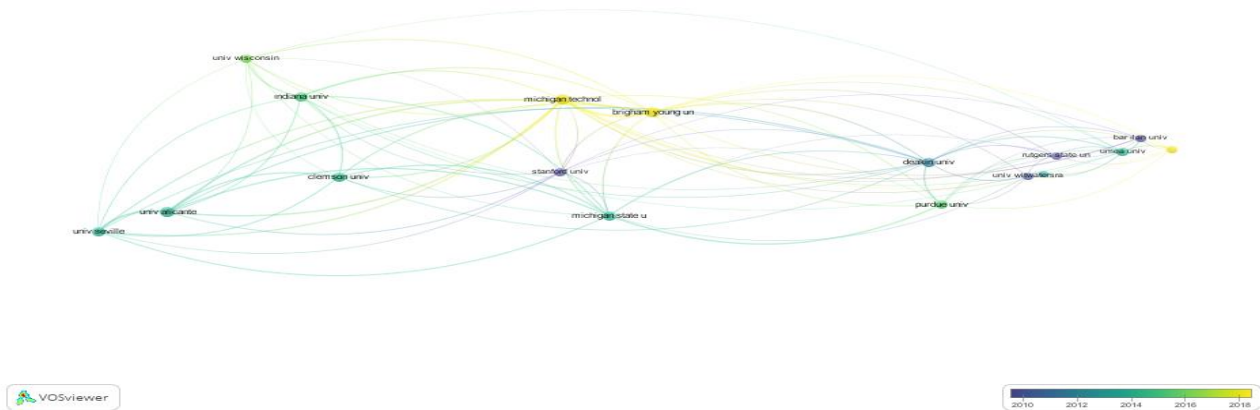


Figure 13. Examination of publications according to institutions and years

As seen in Figure 13, the distribution of publications from bibliographically coupled institutions in the field by years is represented by different colors. According to this, "Universitas Pendidikan Indonesia", "Brigham Young University", and "Michigan Technological University" have come to the fore among the universities that have published in the field in recent years.

Bibliographic couplings of authors

The bibliographic coupling analysis results of the authors publishing in the field are visualized in Figure 14 and Figure 15. Authors with at least 5 publications out of 1068 bibliographically coupled authors were selected as the threshold value and

20 authors who reached this threshold were included in the analysis. Accordingly, the three strongest authors in the bibliographic coupling were determined as Kashefi H., Yusof Y. M., İsmail Z., who had the same TLS value (786). According to the bibliographic coupling analysis, the authors ranked in the top five are presented in Table 5 with their publication numbers, citation numbers, and TLS values.

Table 5. Bibliographic Couplings of Authors

Authors	Number of publications	Number of citations	TLS
Kashefi, Hamidreza	5	21	786
Yusof, Yudariah M.	6	21	786
Ismail, Zaleha	5	21	786
Leatham, Keith R.	7	39	776
Peterson, Blake E.	7	39	776

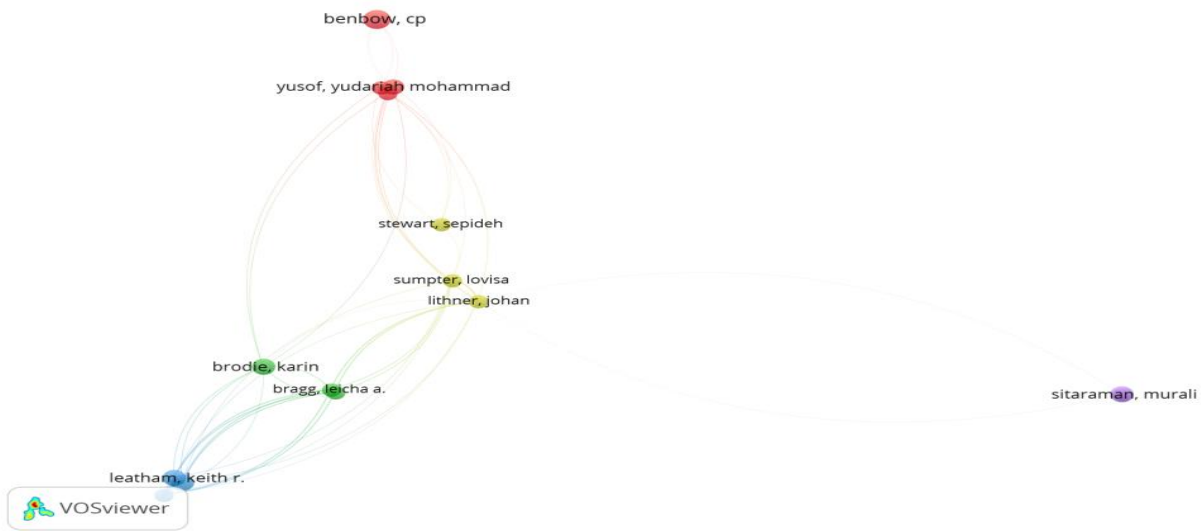


Figure 14. Bibliographic couplings of authors.

As seen in Figure 14, the related authors are represented by 5 different colors in 5 different clusters. In cases where the authors have a lot of connections with each other, they are shown close

to each other on the map. Accordingly, the author of Sitaraman M. has no connection with other authors.

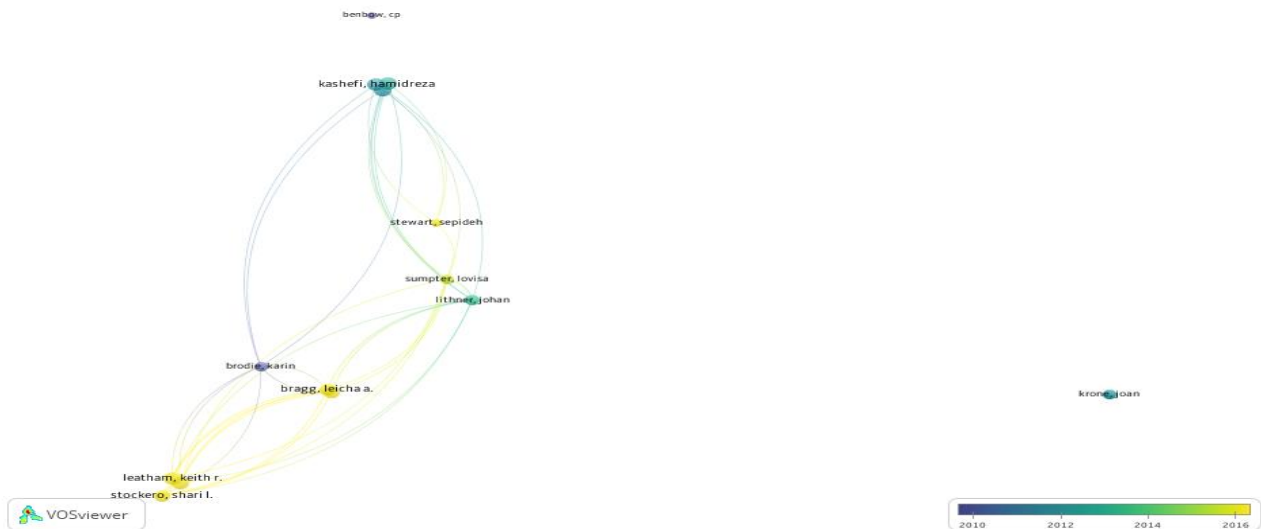


Figure 15. Examination of authors according to publication years.

As seen in Figure 15, the distribution of publications by bibliographically coupled authors according to years is represented by different colors. Accordingly, among the bibliographically coupled authors, Stockero, S., Leatham K.R., Herbert S., and Steward S. are seen to have published the most in recent years.

Discussion and Conclusion

In this study, the bibliometric analysis method was used to reveal some features of the publications related to mathematical reasoning, to determine the clusters formed as a result of the analyses, to make classifications according to the features that will emerge, and to reveal the trends in the field. For this purpose, a search was made using the advanced searching feature of the WoS

database. Bibliographic data were obtained, and the obtained data were analyzed and visualized by the software called the VOSviewer. The data were analyzed on the basis of common occurrences of keywords, bibliographic couplings (countries, universities, authors), and co-citations (authors, journals, references).

When the common occurrences of the keywords used by the authors in their publications were examined, researchers determined that the most used keyword for this field is "mathematical reasoning". Researchers also revealed that the concept of mathematical reasoning is used together with the concepts of "mathematical reasoning", "problem solving", and "mathematical thinking" many times. The keywords used by the researchers were gathered under different clusters as a result of their connections with each other. One of the clusters formed included "mathematical reasoning", "argumentation", and "upper secondary school"; while another cluster included "mathematical thinking", "mathematics education", "mathematics", "formative assessment", "creativity", "learning" and "professional noticing".

As a result of the co-citation analysis of the authors, the first three of the most influential authors in the mathematical reasoning field, respectively, Schoenfeld, A. H., Carpenter T. P. and Geary, D. C. has been determined according to the weight of their total connections with others. In addition, NCTM, Mason, and Benbow, among the most commonly cited authors, are also prominent authors in the field.

As a result of the examination of the journals publishing in the field with common citation analysis, the most effective journals were found to be "Journal for Research in Mathematics Education", "Educational Studies in Mathematics", and "Journal of Educational Psychology" on the basis of their links with other sources and the number of common citations. Although it is not one of the first three journals in the field, the "Journal of Mathematics Teacher Education", which is among the most commonly

cited journals, has been determined as one of the important journals in the field.

When the joint citation analysis of the references was examined, considering the weight of each publication's links with other publications, the most influential publications were ranked as "Jacobs, Lamb, & Phillipp (2010)", "NCTM (2000)", "Fennema, Carpenter, Franke, Levi, Jacobs, & Co. Empson (1996)", "Schoenfeld (1992)" and "Lithner (2008)".

When the bibliographic couplings of the countries were examined, the most influential country as the origin of the publications in the field determined to be the USA, when the ranking is made by considering the weight of the links of each country with other countries. The fact that the first two universities, which are at the forefront of the institutions that are the origin of the publications, are located in the USA confirms this finding. After the USA, Turkey and Sweden are among the most influential countries in the field of mathematical reasoning. According to the bibliographic coupling analysis, the countries that have published the most in the field in recent years have been determined as Indonesia and the People's Republic of China. The fact that one of the prominent institutions in the bibliographic couplings of the institutions of the publications made in recent years is in Indonesia supports this finding.

When the bibliographic couplings of the institutions of the authors publishing in the field of mathematical reasoning were examined, the most effective institutions were "Brigham Young University", "Michigan University", and "Alicante University". The first two universities that come to the fore are also located in the USA. When the number of publications by the institutions publishing in the field is examined, the institutions that have come to the fore in the publications made in the field in recent years were "Universitas Pendidikan Indonesia", "Brigham Young University", and "Michigan Technological University". In the bibliographic coupling of the authors, the fact that one of the top three authors who have come to the fore in publications in recent years works at Brigham

Young University and the other at Michigan Technological University supports this finding.

Among the authors published in the field, the ones with the strongest bibliographic couplings were found to be "Kashefi H.", "Yusof Y. M.", and "Ismail Z." The two of the three prominent authors were working at universities in Malaysia. When the distribution of publications by bibliographically coupled authors was examined, the most influential authors in recent years were found to be "Stockero, S.", "Leatham K. R.", "Herbert S.", and "Steward S." The first three of the prominent authors who have published in recent years work at universities in the USA.

The fact that the importance of mathematical reasoning has been understood both in learning mathematics and in the process of making sense of mathematics has increased the interest in mathematical reasoning (Bergqvist & Lithner, 2012; Umay, 2003). A better understanding of the effects of mathematical reasoning on problem solving success (Lithner, 2008) is also one of the factors that increase the interest in the field. Accordingly, understanding what mathematical reasoning is, revealing its subdomains, and identifying activities that will improve reasoning have become extremely important. In this study, data obtained from one of the most prestigious and most preferred databases for accessing scientific information were analyzed. The results of this study, which gives an idea about the tendencies of scientific studies in the fields of mathematical reasoning and mathematical thinking, will contribute to the literature.

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Early Intervention in Early Childhood Special Education According to Parents: A Qualitative Study

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Abstract

Early intervention practices have an important place in early childhood special education practices as in every period. This study aims to examine the early intervention process of parents who have children with special needs during early childhood, the problems they experience and the solution suggestions to these problems. The study was conducted in qualitative research design. 53 parents participated in the research. As a result of the analysis of the opinions obtained with the semi-structured interview form, 6 themes and categories that were related to these themes were determined. When the special need of the child was found, it was seen that more opinions were expressed in the categories of "hospital/doctor" regarding the first person and/or institution theme. The other category in terms of the meaning of early intervention was "starting treatment/education early for the existing situation/problem". In addition, the category of "leaving it to time and helping with one's own competence" for the theme of struggling with the difficulties experienced also emphasizes how guidance is necessary and important. It was suggested that early intervention and pregnancy screening and the next process should be carried out with guidance.

Key Words: Special Education, Child with Special Needs, Early İntervention, Early Childhood, Parents.

Öz

Erken müdahale uygulamaları her dönemde olduğu gibi erken çocukluk dönemi özel eğitim uygulamaları için de önemli bir yer tutmaktadır. Bu çalışma ile de erken çocukluk döneminde özel eğitim gerektiren çocuğu olan ebeveynlerin nasıl bir erken müdahale süreci ile karşılaştıkları, bu sırada yaşadıkları ve çözüm önerilerinin incelenmesi amaçlanmıştır. Araştırma nitel araştırma deseninde yürütülmüştür. Araştırmanın çalışma gurubunu farklı engel türünde çocuğu olan 53 ebeveyn oluşturmuştur. Araştırmacı tarafından hazırlanan yarı yapılandırılmış görüşme formu ile elde edilen görüşlerin analizi sonucu 6 tema ve bunlara bağlı kategoriler belirlenmiştir. Ebeveynlerin çocuklarının özel durumunu öğrenildiklerinde ilk başvurulan kişi ve/veya kurum temasına yönelik "hastane/doktor" kategorisinde, erken müdahalenin anlamı temasına ilişkin ise "var olan durum/problem için tedaviye/egitime erken başlamak" kategorilerine yönelik daha fazla görüş belirttikleri saptanmıştır. Ayrıca yaşanan güçlüklerle mücadele etme temasına yönelik "zamana bırakma ve kendi yeterliği ile yardımcı olma" kategorisi de rehberliğin gerekliliğini ve önemini vurgulamaktadır. Erken müdahale ile gebelik taramalarının ve sonraki sürecin rehberlik ile birlikte yapılması gerektiği önerilmektedir.

Anahtar Kelimeler: Özel Eğitim, Özel Eğitim Gerektiren Çocuk, Erken Müdahale, Erken Çocukluk Dönemi, Ebeveyn.

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Introduction

The development process affected adversely during early childhood causes children to experience developmental delay, developmental deficiency (inability to show the skills expected from their age in basic developmental areas) and/or risk (Aytekin & Bayhan, 2015; Temiz & Akman, 2015). With the interventions offered in this process, it is aimed to support the development and health of children with developmental disabilities or who are at risk, to increase the existing competencies, to remove or reduce the limitations experienced, and to improve parenting skills of their parents (Bate, 2017; Kılıçkaya & Zelyurt, 2015).

In early intervention, which has a very important place in early childhood special education practices, the importance of parent-child interaction, providing education opportunities to families and empowering parents is emphasized (Aslan, 2015; Bailey et al., 1999; Dunst, 2007; Guralnick, 2005; Kennedy et al., 2011). Early intervention is a support program for young children and their families that includes health and social services, in which families and field experts collaborate (Bari, Abdullah, Abdullah, & Yasin 2016; García-Grau, Martínez-Rico, McWilliam, & Cañadas Pérez, 2020). The early intervention programs offered during this period (such as boosting development of children, the active participation of parents within the process, reducing social problems in the country, and financial support) contributes to children, families and countries in in the short and long term (Bağlama & Sakallı-Demirok, 2016; Diken, Bayhan, Turan, Sipal, Sucuoğlu, Ceber-Bakkaloğlu, Günel, & Kara 2012; Kılıçkaya & Zelyurt, 2015; Küçük-Doğaroğlu & Bapoğlu-Dümenci, 2015; Reynolds 2000; Sazak-Pınar, 2006; <https://ailevecalisma.gov.tr>). Children who are diagnosed in the early childhood period also get the chance to benefit from early intervention and special education services earlier. Parents have serious responsibilities for providing these early intervention practices as children learn many skills from their families beginning from the moment they are born and especially until they become a

part of different social environments (such as school) (Bruder, Dunst, & Mogro-Wilson, 2011; Campbell, & Sawyer, 2009; Gül & Diken, 2009; Kılınç, & Aral, 2015; Selimoğlu, & Özdemir 2018; Temiz, & Akman, 2015; Tunçeli, & Zembat, 2017). Therefore, it is vital to provide interventions to support the development of children with special needs or these children's parents to ensure that these interventions reach them quickly.

Although studies show that early intervention programs offer positive long-term outcomes (such as enabling children to benefit from early intervention strategies, reducing the problems that may occur in the future, benefiting from the support provided by families during the early intervention process, encouraging teachers to work with different disciplines) on teachers, parents, and especially children (Bağlama & Sakallı-Demirok, 2016; García-Grau et al., 2020; Pretis, 2009; Reynolds, 2000; Reynolds, Temple, & Ou 2003; Sandberg, Norling, & Lillvist, 2009), it is stated that different issues (such as not providing early intervention services on time, delays in the diagnosis of children, insufficient communication between institutions, not informing parents about existing services, lack of social sensitivity) regarding early intervention services continue in many countries (Aslan, 2015; Bari et al., 2016; Bruder, Dunst, & Mogro-Wilson, 2011; Diken et al., 2012; Pang and Richey 2005; Powell, 2019; Pratis, 2009; Zheng, Maude & Brotherson, 2015).

Early intervention is a support program in which families and field experts cooperate. This cooperation has an important role in meeting the parenting goals of the family that takes care of the child in early childhood. The early initiation of these support program(s) for children with special needs and the determination of the views of parents, who are the main implementers of the programs, will enable the issue to be addressed more fundamentally. For this reason, providing expert support to families in order to answer questions of parents, finding solutions to their problems, eliminating learning deficiencies caused by disability at the maximum level, revealing strengths of children and ensuring their participation in society at an early age are the factors that make early intervention important.

With this study, we aimed to reveal how parents overcome this process beginning from the moment at which they learn that they have a child with special needs and the main problems experienced during this process in the early childhood period, which covers the critical process in life and provides a quality life standard. For this reason, the purpose of the present study was to determine when did the parents learn about the special needs of their children and what did they experience in early intervention services, and their suggestions related to the subject.

Method

Research model

The present study was carried out in a qualitative case study design in order to obtain multidimensional information about early intervention from parents. Qualitative research emphasizes meanings, experiences, and definitions. Comprehensive and detailed data consists entirely of words that people describe and observe (Coolican, 1992). In the qualitative case study design, the elements related to a situation are handled with a holistic approach, focusing on how they affect the related situation and how it is affected by the relevant situation (Creswell, 2012; Yıldırım & Şimşek, 2008).

Study group

The study group consists of parents selected by purposive sampling method, as it aims to determine opinions of parents who have children needing special education during early childhood, about the early intervention process. The study group of the research was selected by criterion sampling, which is one of the purposive sampling method (Yıldırım & Şimşek, 2005). In this way, we aimed to reflect people's experiences. In the determination of the sample group, the fact that the children are in early childhood and in need of special education, as well as willingness of participate were taken into consideration as the basic criteria. In addition, an informed consent form was obtained from the parents. Parents participating in the study had children with intellectual disability at mild and moderate level (especially Down Syndrome), with learning disability, autism spectrum disorder, attention deficit and hyperactivity, and with both physical and intellectual disabilities. There were 53 parents in the study group. The features of parents participated in the study and their children are given in Table 1.

Table 1. Demographic Characteristics of the Parents and Children in the Study Group

	Parent's Age				Parent's Educational Status			Child's Age		Child's Birth Order			Child's Educational Background		
	26-30 yrs	31-35 yrs	36-40	41 +	Primary	Secondary	High School	2-4	5-7	First	Middle	Last	Support Education	Inclusive and support education (kinder-garten)	Inclusive and support education (Primary 1st grade)
Mother	6	9	10	5	13	7	10	11	42	16	10	27	16	18	19
Father	2	7	6	8	14	3	6								

Data collection tool

The "Structured Interview Form for Early Intervention in Early Childhood Special Education" developed by the researcher was used as a data collection tool in

the study. Relevant literature was searched for the preparation of the form. During the research, the issue of early intervention in special education was emphasized and an interview form was prepared considering the studies on the subject. Opinions of

experts were taken for the items determined in the interview form been prepared. The questions in the Structured Interview Form for Early Intervention in Early Childhood Special Education were rearranged depending on the feedback received from five experts, two of whom were lecturers in special education and three of whom were teachers in child development. Their opinions revealed that the study was appropriate, understandable and applicable. As a result of the pilot study conducted with three parents, the interview form was found to be appropriate. The form consists of two parts; demographic information is involved in the first part. In the second part, questions that help to determine the opinions of parents regarding early intervention are involved. In the interview form; questions which are asked to determine opinions of parents about early intervention in general, to whom or where they apply first when they learn about their child, what their child experience during and after the diagnosis, how they struggle during this process, and their suggestions regarding the difficulties they experience are involved. Applications were taken from parents in written form by the researcher herself, who is an expert in the field of early childhood special education. It is important for validity to include direct quotations from individuals and explain the results based on them. For this, some of the data obtained from the research was given as they were expressed to provide credibility (Wolcott, 1990). In addition, for the reliability study, an expert from early intervention field was asked to compare the same themes with the conceptual categories so that no themes were left out. The consistency of the comparisons made by the expert and the researcher was checked separately.

Data collection process

In order to collect the data, interviews were held in a special education and rehabilitation center where the participants would feel comfortable. Interviews were arranged with the parents (having a child who needs special education in early childhood) who met the criteria suitable for the purpose of the research, among the officials of the

institution who were interviewed by appointment before. The study was carried out individually, with parents who wanted to voluntarily participate in the study among the informed parents. An explanation was prepared for the interviews, and the purpose of the research and how the study would be carried out were re-stated in the explanation in individual interviews. In addition, it was emphasized that the identities of the participants will be kept confidential. Written interview forms were used during the interviews. The interviews took between 25-35 minutes.

Analysis and interpretation of data

Collected data were analyzed using descriptive analysis technique. The main purpose here is to reach the concepts and relationships that can explain the collected data. By focusing on the collected data, codes are extracted from the themes that are frequently repeated and emphasized in the data. The face-to-face interviews made by the researcher were written down and read one by one. In this reading, the aim of the research and the prepared interview questions were taken into consideration. In the end of the reading, certain codes have emerged for each interview. In the process, the data were both fragmented and at the same time the integrity of meaning was preserved. After reading all the transcripts and completing the coding, the researcher created categories from the codes and the themes from the categories. Reliability was provided by getting help from an expert from the field for the consistency study between coders. The views were systematically separated and each interview was numbered starting from one. Words, sentences and paragraphs were conceptualized and coded within the framework of the purpose of the research and interview questions in order to determine the thought to be expressed while reading the data (Brott & Myers, 2002; Coolican, 1992).

Research Validity-Reliability and Ethical Issues

More than one strategy was used to ensure validity and reliability in the study. The first of these was prepared in line with the opinions of three faculty

members in the field of special education and three experts in the field of child development in order to ensure the validity of the interview form. Participant confirmation is very essential to increase the validity and reliability of qualitative data. In addition, intense descriptions were included in the description of a situation by providing details to ensure validity in the research or while giving information about a theme (Creswell, 2012). This helps the reader decide whether the results can be transferred to other media. In qualitative researches, the use of multiple coders and the coherence between the coders increase the reliability (Creswell, 2012). Within the scope of the present study, coding was requested from different coders. Besides, the principles such as being impartial in determining parents to be included, informing parents about the purpose of the research, basing on volunteering in the data collection process, using coding such as Mother 1 (M1), Father 1 (F1) in

order not to use the real names were taken into consideration.

Findings

Opinions on early intervention were analyzed according to the opinions of parents having children with special needs in early childhood, and 6 themes were formed in this direction.

Theme 1- The first time that parents learn about their child's situation: The theme regarding the first time that parents learn about their child's situation that was formed according to the opinions of parents whose children were in need of special education consists of five categories. The categories are listed as: *pregnancy period, infancy period, nursery period, kindergarten period and first grade period*. Sample parental views on these categories are given in Table 2.

Table 2. Parents' Views on the first period that they learn about their child's condition

Themes	Categories	The Number Parents	Views of parents who have children requiring special education in early childhood (M for Mother and F for Father)
The first time that parents learn about their child's situation	Pregnancy period	4	"Learned during pregnancy after the test" (M9)
	Babyhood (0-2)	15	"S/he was 2 and was not walking" (M4) "Learned when s/he was born" (F17)
	Nursery (3-4)	10	"S/he was 24 months, learned it when we went to the psychiatrist" (M18) "We found out when we went to the psychiatrist. S/he was about three years old then" (F3)
	Kindergarten (5-6)	12	"We noticed it in kindergarten because s/he was behind his/her peers" (M3) "I learned when s/he started kindergarten" (F20)
	First Grade (7)	12	"We just learned, s/he just recently started school" (M22) "When I went to the psychiatrist with warning of the class teacher" (F13)

Theme 2- The first person and/or institution contacted when the child's special situation is learned: The theme consists of four categories: *private special education and rehabilitation center, the teacher in the official school that child attended,*

guidance service of the school that child attended and hospital/doctor. Sample parental views on these categories are given in Table 3.

Table 3. Parents' Views on "The Person and/or Institution They First Apply to When They Learned About their Child's Condition"

Themes	Categories	The Number Parents	Views of parents who have children requiring special education in early childhood (M for Mother and F for Father)
the first person and/or institution they contacted when the child's special situation is learned	Private special education and rehabilitation center	7	"We had some problems with his/her brother too, I brought him/her directly to rehabilitation" (M13) "I applied to special education school, I heard before that children like this go there" (F1)
	The teacher in the official school that child attended	7	"I talked to his/her teacher and s/he guided us" (M9) "We talked to the teacher at the school" (F15)
	The guidance service of the school that child attended	5	"I talked to our school counselor first" (M25) "We met with the counsellor of the school" (F7)
	Hospital/doctor	34	"I went to the risky pregnancy department at the hospital" (M1) "We first took her/him to the psychologist" (F5)

Theme 3- The meaning of early intervention: The meaning of early intervention theme consists of seven categories: *education starting during pregnancy, the service provided to the family after diagnosis, taking precautions before the problem occurs/early diagnosis, the early recognition of parents*

and educators, future, success, starting treatment/education/diagnosis at an early age for the current situation/problem. Sample parental views on these categories are given in Table 4.

Table 4. Parents' Views on the "Meaning of Early Intervention"

Themes	Categories	The Number Parents	Views of parents who have children requiring special education in early childhood (M for Mother and F for Father)
The meaning of "early intervention"	Education starting during pregnancy	4	"An education that includes the whole family begins in the womb." (M1)
	The service provided to the family after diagnosis	6	"To learn more about my child's illness" (F23) "One-on-one early education, family support and guidance come to my mind" (M19)
	Taking precautions before the problem occurs/early diagnosis (Preventive intervention)	12	"Before it is too late, the precautions should be taken and/or the intervention should be applied, otherwise it is too late" (F5) "I think it is possible to overcome the problems with early detection and we should not let fear get us" (M14)
	Early recognition of parents and educators	5	"Parents and the environment should be careful so that the child's condition does not progress, s/he should be taken to the doctor immediately." (F15) "We as mothers notice things and have more productive results" (M20)
	Future	4	"Early diagnosis means future" (M8)
	Success	8	"Keeping up with her/his friends without lagging behind in education" (F18) "To me it is shortly 'success' " (M6)
	Starting treatment/education early for the current situation/problem/ diagnosis at an early age	14	"When it found out at an early age, more information can be acquired." (F11) "In my opinion, training should start early, at a young age, before it is too late." (M26)

Theme 4- The difficulties they experienced during the diagnosis and/or after diagnosis: The theme regarding the difficulties parents experienced during and/or after diagnosis consists of six categories. These categories are as follows: *reporting process, not providing the necessary guidance*

service to the family, inadequacy in the education given to the child, difficulty in accepting, adapting to the social environment, fear and anxiety caused by the unknown and the future. Sample parental views on these categories are given in Table 5.

Table 5. Parents' Views on the Difficulties They Experienced during and/or after the Diagnosis

Themes	Categories	The Number Parents	Views of parents who have children requiring special education in early childhood (M for Mother and F for Father)
The difficulties they experienced during the diagnosis and/or after diagnosis	Reporting process	5	"In this process, we had difficulties especially in reporting and then in education practices." (F13) "I was psychologically down while getting a report" (M7)
	Not providing the necessary guidance service to the family	11	"We also struggled to find the right educational institution" (F20) "I really need to be guided right" (M17)
	Inadequacy in the education given to the child	9	"We are having difficulties in the education of our child" (F9) "When I wanted to get private lessons for my child, some people said, 'S/he is a baby, what are we going to teach her/him?'" (M1)
	Difficulty in accepting	8	"It was hard to accept" (F22) "It was hard times and it is still tough sometimes. I had a hard time accepting it" (M19)
	Adapting to the social environment	14	"S/he had trouble adapting with her peers, the people around were asking whether she was going to rehabilitation or not. I had a lot of trouble" (F1) "It makes me very sad not receiving any support from the environment and the people in the society are not taking responsibility" (M10)
	Fear and anxiety caused by the unknown and the future	6	"There are things that are unknown and as a result I have fear and incompatibilities" (M24)

Theme 5- The method of dealing with difficulties: The theme of dealing with difficulties has seven

categories: *continuous struggle without giving up, having support education for the child, being in constant cooperation with the school the child was attending, leaving it to time and helping with his own competence, interview and psychological support,*

patience/calmness and supporting each other in the family. Sample parental views on these categories are given in Table 6.

Table 6. Parents' Views on Struggling with the Difficulties they Faced

Themes	Categories	The Number Parents	Views of parents who have children requiring special education in early childhood (M for Mother and F for Father)
The method of dealing with difficulties	Continuous struggle without giving up	7	"Fighting" (F2) "By not giving up and fighting even fighting" (M1)
	Having support education for the child	10	"For my child to get education" (F6) "Going to rehabilitation has given us strength" (M8)
	Being in constant cooperation with the school the child was attending	9	"We consulted our child's teacher, talking to her/him was especially good for my wife." (F20) "I coped with my problems in cooperation with the teacher" (M5)
	Leaving it to time and helping with his own competence	11	"I constantly supported and helped my child, it got better over time" (F17) "I let it go and try to do the right thing in my own way" (M27)
	Interview and psychological support	3	"We met with the families of our child's friends" (F3) "I had difficulty during the report process, received psychological support, both from the institution and the public hospital" (F16)
	Patience/calmness	10	"With patience and fortitude" (F14) "I prayed, paid close attention to everything, autosuggested and was patient" (M30)
	Supporting each other in the family	3	"We tried to get over it with my mother's support, they went to school together with her, and we all got used to it." (M13)

Theme 6- The suggestions to difficulties encountered in early intervention: The theme consists of seven categories: *Guidance service for the family, continuous education service for the child and family during and after pregnancy, public consciousness, parents having high awareness, teachers*

being attentive and knowledgeable, early treatment and the correct guidance of healthcare professionals and the last one is psychological support category. Sample parental views on these categories are given in Table 7.

Table 7. Parents' Advice about the Difficulties they Experienced durin Early Intervention

Themes	Categories	The Number Parents	Views of parents who have children requiring special education in early childhood (M for Mother and F for Father)
The suggestions to difficulties encountered in early intervention	Guidance service for the family	9	"By raising families' awareness" (F4) "The problem does not go any further when intervened early. Families should be more informed and guided on this." (M13)
	Continuous education service for the child and family during and after pregnancy	20	"It can be prevented through education because it starts at home" (F1) "I found out that my child had Down syndrome when I was pregnant, so education should start right from that moment." (M1)
	Public consciousness	4	"When people not undermine the child and when they accept..." (F7) "If the families of other children as well as families of children in need of special education are made aware of the issue, the prejudice and exclusion in the society can be eliminated." (M17)
	Parents having high awareness	8	"It is prevented by mothers and fathers understanding everything well" (F21) "It is important for families to be more conscious and informed in advance." (M2)
	Teachers being attentive and knowledgeable	4	"Can be avoided by meeting a good teacher" (F22) "In kindergarten, the teacher can be more careful, and should not make comparisons" (M10)
	Early treatment and the correct guidance of healthcare professionals	3	"With early recognition and immediate treatment" (F12) "Doctors should be more conscious, tell us to get a report, make us buy and use a device immediately." (M30)
	Psychological support	5	"Time is the best healer, psychological support is also needed" (F16) "After the doctors explain the situation of our child, they should provide psychological support to us." (M15)

Discussion and Conclusion

In this study, we aimed to get the opinions of parents who have children with special needs

about early intervention because the existence of any negative situation or the risk of negativity that may affect the whole life of the individual makes the first steps, early diagnosis and early

intervention very important. Evaluations should be made in the family environment, which is the most important environment for children in early childhood, involving parents and referring to their experiences and knowledge. For this reason, it is very important for parents having children with special needs how they overcome this period, and get support regarding the right solutions they need.

The first finding of the study is the categories created for the theme of the first learning period of the child's situation. These categories are listed as pregnancy period, infancy period, nursery period, kindergarten period and first grade period. In recent years, early diagnosis has proven its importance for children with special needs in benefitting from early intervention services. Diagnosing some disability groups during pregnancy and infancy provides important contributions for parents (Çiğerli, Topsever, Alvur and Gölperioğlu 2014; García-Grau, Martínez-Rico, McWilliam and Cañadas Pérez 2020). Early identification of the child's special needs provides a chance to benefit from early intervention services and education programs.

Studies have shown that education started in early childhood increases the developmental skills of both children in the risk group and children with special needs (Acar & Akamoğlu 2014; Aslan 2015; Doğan 2012; Gökmen et al., 2016; Kılınc & Aral 2015; Shelleby & Ogg 2020; Yıldırım Doğru, 2017). Selimoğlu and Özdemir (2018) examined the effectiveness of the Interaction-Based Early Childhood Intervention Program (IBECIP) on social interaction skills of 6, 4, and 3-year-old children with autism spectrum disorder. At the end of the study, it was determined that children showed improvements in social interaction skills. In the early period, the participation of parents in intervention programs for their children with special needs depends on their own or referral (García-Grau, Martínez-Rico, McWilliam & Cañadas Pérez, 2020; Gül & Diken, 2009; Özkan, 2020; Yıldırım Doğru, 2017). Therefore, educational support provided for parents about the early developmental characteristics of children, how to recognize a special situation, and when to

consult a specialist will prevent delays in the field of special education.

According to the opinions of parents who have children with special needs in early childhood, the institution/person they mostly turn to in the early intervention process has been the hospital and the doctor. Research findings also reveal similar results (Çitil & Doğan 2019; Ercan, Kırlioğlu & Kalaycı-Kırlioğlu 2019). In this case, parents have to deal with this situation according to their own experiences, especially if formal psychological support is not provided. In addition, if a difference is observed in the nursery and/or school environment, it is seen that the parents expect support or guidance of classroom teachers. In their study, Küçük-Doğaroğlu and Bapoğlu-Dümenci (2015) stated that preschool teachers stated that inclusion is an early intervention and it is the evaluations and interventions to be planned for children in the risk group. They also stated that if there is a problem with development in early childhood, all procedures related to diagnosis and education should be included in early intervention services. It is emphasized that preschool teachers cover an important period in early intervention programs in terms of the development period of the group they teach, and the importance of cooperation with them (Bari et al. 2016). Therefore, both healthcare professionals and people involved in education should be equipped with early intervention for medical, psychological and educational services to be provided to parents.

The research finding related to what early intervention is revealed the importance of correctly defining early intervention as a concept and practice. Parents have demonstrated their awareness of the implementation steps of early intervention by mentioning both the preventive and intervention dimensions (García-Grau et al., 2020). Since carrying out early intervention studies with their preventive and interventional aspects can be considered as important steps in fulfilling the requirements of the early intervention spirit (Akoğlu & Şipal, 2012; Aytekin, 2016; Karoly, Kilburn & Cannon 2005). In the research findings, parents' views on the correct understanding of early intervention sheds light on the problems in this area. Temiz and Akman (2015), in their

research examining the views of scientists contributing to early intervention, determined that they focused on "preventive and timely intervention, intervention in developmental problems" in the definition of early intervention.

Parents having children with special needs show different reactions when they learn about their child's special situation. These reactions and emotional states starting with shock and denial, pass through different stages until the acceptance stage (Ardıç 2013; Ercan, Kırlioğlu, & Kalaycı-Kırlioğlu 2019). Adverse reactions from the social environment are not only quite weary in this regard, but also push the parents into a defensive and/or introverted position (Gül, Erberk-Özen & Battal, 2017). When the environment has an accepting attitude towards the parent and child, it helps them come out stronger from the process. In addition, the anxiety caused by the unknown and not knowing what awaits them in different situations cause negativities for the parents. Therefore, it is very important to support parents psychologically and to direct them by regularly evaluating their children's development in order to contribute directly to their education (Arıcıoğlu ve Gültekin, 2017; Özkan, 2020; Selimoğlu, Özdemir, Töret ve Özkubat, 2014). Being aware of the development of their child and having information and ideas about what they should do to increase their strengths will enable parents to progress towards more realistic goals and to be more active in the team.

The theme of dealing with difficulties has seven categories. The most emphasized categories were receiving support education for the child, being in constant cooperation with the school s/he attended, leaving it to time and helping with his/her own competence. Achieving the right care in time during the early intervention period is vital for parents. Because it is necessary to determine the developmental level of the child and to provide appropriate support with early intervention if s/he is in the risk group according to this level, and to be supported in line with the areas where his/her potential is open to development (Powell, 2019; Tunçeli & Zembat, 2017). Benefiting from early intervention services according to the developmental characteristics of their children and being in cooperation with service providers has

been another issue emphasized for parents in this process. However, parents who cannot get the necessary support in the official or social environment, especially at the first stage, try to find a solution within themselves. However, in order to achieve success in early intervention studies; observing families and children in their natural environments, evaluating their needs realistically, an individualized family service plan (BAHP) and individual education programs (IEP) should be prepared for each child and his family (Akoğlu & Şipal, 2012; Değirmenci & Karahisar, 2015; İlik & Günay, 2020); Powell, 2019). Campbell and Halbert (2009) found that high-quality education for children with special needs is through early intervention practices and it is stated that early intervention programs should be prepared for parents and their participation in the programs should be ensured. In Turkey, services are designed especially for children aged 0-3 in a way that reaches every child and their families, to ensure the welfare of children with special needs, to plan services that are suitable for their developmental characteristics, and to increase cooperation with all service providers (<https://ailevecalisma.gov.tr/>).

However, sometimes not being able to define their needs correctly and the inadequacy of the psychological support provided can make cooperation with the parents difficult. For instance, Bruder, Dunst, and Mogro-Wilson (2011) conducted a study with 1800 experts working in the field of early intervention and found that the participants failed to establish and maintain their cooperation with their parents. Therefore, it is suggested that needs should be analyzed carefully. In Atkins' (2008) study that included special education teachers and teachers from other branches, it is emphasized that teachers should receive support and encouragement from parents to carry out intervention activities.

The theme of recommendations for the difficulties experienced in early intervention was created according to the views of parents, who constitute an important link in early intervention practices. Their suggestions based on the experience they have gained from their experiences contribute to a more efficient process. Parents need to have the correct information about the normal structure to cope with a different

situation. For this, guidance services should be provided to parents. In addition, parents especially emphasize that the continuous and systematic education programs offered in early childhood will provide a high level of benefit in terms of early intervention and support their children's development without interruption (Doğan ,2012; Erdil, 2010; Öncül, 2014).

In the findings obtained from the research, the current situation within the scope of early intervention has been determined. The experiences of parents having children with special needs in early intervention practices and programs are presented and discussed. Early intervention is a practice in which parents make a great contribution and should be carried out in collaboration with multifaceted service providers. For this reason, it requires every supporter who brings together multi-faceted subjects and different areas of expertise and takes part in the application to be equipped. Professional competencies and standards of people who will work in early childhood intervention programs should be well defined. Although it varies according to the type of disability and risk group of the process, it is recommended as a great necessity to establish comprehensive and integrated early intervention systems for parents in both health institutions and educational institutions. In order for these practices to be carried out without interruption and in a qualified manner, it is suggested that early intervention studies should be secured by laws, the steps to be followed and the studies to be carried out should be systematically determined and disseminated. Thus, studies conducted with a systematic early intervention model according to cultural characteristics will provide the most effective results in the earliest time.

Early intervention programs developed according to needs and cultural characteristics can be developed for more active participation of children with special needs and risk groups in life. Longitudinal studies can be conducted on the long-term effects of these developed programs. Early intervention applications and programs can be formed according to different special needs.

Limitations

In evaluating the implementation of early intervention services, the opinions of the participants were evaluated using only the interview technique among qualitative research techniques. The combination of different methods and techniques that require a lot of time can be weary for this emotionally sensitive group of parents. In addition, the findings obtained from the research are limited to the opinions of the participants included in this study.

Ethical statement

The study data were obtained from mothers who volunteered to participate in the study between September-November 2019. The data presented in the study are in accordance with academic and ethical rules. All evaluations and results are presented in accordance with scientific ethics and moral rules.

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Cultural and Sociocultural Elements of Language Learning for the Turkish Learners of English in Two Different Universities

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Abstract

Culture is one part of the language learning process and it has been defined and categorized by several scholars. With the advent of social constructivism in education, the sociocultural learning theory has come to the foreground. Therefore, these two important concepts have affected the language teaching pedagogy. Thus, this study aimed at determining the cultural and sociocultural elements that were focused in language classes in two different universities in Turkey. Hence, for the purpose of this study, five students from a state university in Istanbul and five students from another state university in Eskisehir were interviewed to find out whether these elements were covered in the language classes of the School of Foreign Languages in these two different university contexts. Additionally, some other contextual factors that affected these learners' sociocultural learning process were also questioned. The results showed that some aspects of culture were more stressed in language classes whereas some of them were neglected. Participants also stated that they benefitted a lot from the elements of sociocultural learning theory especially in terms of "scaffolding" as they cooperated with their peers whose level of language proficiency was higher than themselves to improve their language skills, especially writing and grammar.

Key Words: Culture, Sociocultural Learning, Scaffolding, Language Development, English Language Learning.

Öz

Kültür, dil öğrenme sürecinin bir parçasıdır ve bazı bilim insanları tarafından tanımlanmış ve kategorize edilmiştir. Eğitimde sosyal yapılandırıcılığın ortaya çıkmasıyla birlikte sosyokültürel öğrenme teorisi ön plana çıkmıştır. Bu nedenle, bu iki önemli kavram dil öğretimi pedagojisini etkilemiştir. Bu sebeple de bu çalışma Türkiye'deki iki farklı üniversitede dil derslerinde odaklanan kültürel ve sosyokültürel unsurları belirlemeyi amaçlamaktadır. Nitekim bu çalışmanın amacı doğrultusunda, İstanbul'daki bir devlet üniversitesinden beş öğrenci ve Eskişehir'deki başka bir devlet üniversitesinden beş öğrenci ile "görüşme" (mülakat) yoluyla bilgi toplanmış ve bu unsurların bu iki farklı üniversite bağlamındaki Yabancı Diller Yüksekokulu'nun dil derslerinde işlenip işlenmediğine bakılmıştır. Ek olarak, bu öğrencilerin sosyokültürel öğrenme sürecini etkileyen diğer bazı bağlamsal faktörler de sorgulanmıştır. Sonuç olarak, dil derslerinde kültürün bazı yönlerinin daha fazla vurgulanırken bazılarının ihmal edildiğini bulunmuştur. Katılımcılar ayrıca dil yeterlilikleri kendilerinden daha yüksek olan akranlarıyla özellikle yazma ve dilbilgisi becerilerini geliştirmek için iş birliği yaparak sosyokültürel öğrenme teorisinin unsurlarından özellikle "iskele" açısından çok faydalandıklarını belirttiler.

Anahtar Kelimeler: Kültür, Sosyokültürel Öğrenme, İskele, Dil Gelişimi, İngilizce Dil Öğrenimi.

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Introduction

Culture is an important part of language teaching process. It can be as “the system of shared beliefs, values, customs, behaviors, and artifacts that the members of society use to cope with their world and with one another and that are transmitted from generation to generation through learning” (Bates & Plog, 1991, p.7). Thus, it can be concluded that every society has its own cultural aspects of thinking within the scope of their way of lives. Kramsch (1998) relates culture with “the membership in a discourse community that shares a common social space and history, and common imaginings” (p.10).

Cultural knowledge is significant for language learners as language and culture are inseparable from each other. Wright (1996) emphasizes the significance of culture in ELT pointing out the need “to raise awareness of the importance of culture in language education” (p.37). Nault (2006) concentrates on how the culture will be taught as it is obviously necessary for teachers to make culture part of their lesson plans. Byram (1997) confirms that “language and culture cannot be treated separately in the discussion of language teaching theory and practice” (p.52).

The important point here is to make “culture” more specific as it is such a broad term that it may include all parts of traditions and procedures applied within a certain community. There are different categorizations and components of culture that have been put forward by some researchers. Adaskou et al. (1990) proposed four components of culture in their article which are (i) the aesthetic sense (media, cinema, music and literature); (ii) the sociological sense (family, education, work and leisure, traditions); (iii) the semantic sense (conceptions and thought processes); (iv) the pragmatic (or sociolinguistic) sense (‘appropriacy’ in language use). The aesthetic sense is the culture with a capital “C”, reflecting media, cinema, music, literature, etc. The sociological sense of culture with a small “c” refers to the structure and nature of family, home life, interpersonal relations, material conditions, work and leisure, customs and institutions. This component is the main focus of this study. The

semantic sense is the conceptual system embodied in the language, covering many semantic areas such as food, clothes and institutions. The pragmatic sense means “the background knowledge, social skills, and paralinguistic skills that, in addition to mastery of the language code, that make possible successful communication”.

Another categorization was made by Byrd et al. (2011):

1. Cultural products (tangible products- literature, art, crafts and song, dance)
2. Cultural Practices (knowledge of what to do, when, and where)
3. Cultural Perspectives (ideas and attitudes)

These different components of culture and their effects on learning a foreign language have been investigated in this study considering the contextual factors.

Literature Review

There are different schools of thought in second language acquisition, all of which have been explained in the book of Brown (2007): Structural Linguistics and Behavioral Psychology, Generative linguistics and Cognitive Psychology, and Constructivism: A Multidisciplinary Approach, in which social constructivism has been defined as “social interaction and cooperative learning in constructing both cognitive and emotional images of reality” (p.12). Another scholar, Spivey (1997) exclaims that constructivist research most likely to focus on “individuals engaged in social practices, on a collaborative group, [or] on a global community” (p.24). Kaufman (2004) emphasizes the huge impacts of society and environment on the learning process by saying “children's thinking and meaning-making is socially constructed and emerges out of their social interactions with their environment” (p.304). Nunan (1992) elaborates on the issue by saying:

“I believe that success or failure in language learning is critically dependent on social, interpersonal and cultural factors, and that unless we develop methods for incorporating these factors into our research agenda, our knowledge of what makes learners tick will remain piecemeal and incomplete. Current research based on the so called “scientific” method alone are unlikely to

provide us with anything like a complete picture of the acquisition process" (p.16).

He emphasizes the importance of social, cultural and interpersonal elements that play a crucial role in the language learning process. Therefore, these elements must be paid attention in language learning/teaching process. What is more, McLaughlin (1994) claims that today's students are significantly different from the ones that belong to previous generations; especially in terms of the cultural perspectives, languages, family circumstances, values, and mores that they bring to their classrooms. This means that learning cannot be separated from the social and contextual factors that directly affect the efficiency of the education.

The Elements in Sociocultural Learning

It is known that the key concepts related to social constructivism have been come up with by Vygotsky (1978; as cited in Brown, 2007). Thus, Vygotsky (1987) has come up with certain concepts that affect the second language teaching keeping the sociocultural theory in mind.

He emphasized the importance of "*bilingual instruction*" which means that the first language of the learners might be used in second language teaching because it will facilitate the process in a positive way. There are lots of studies that confirms the efficiency of the first language use in language classes because students will feel more comfortable when their L1 is also used in the instruction (Shweers,1999; Kim Ahn, 2010; Atkinson, 1987; Edstrom, 2006).

Another important point mentioned by Vygotsky (1997) is the "*pragmatics*" of the language. He thinks that without understanding the contextual factors that give the meaning to the conversation, a language learner with a perfect grammar and vocabulary knowledge will not be able to comprehend what is going around well. Canale and Swain (1980) mentioned four different characteristics of communicative competence which are grammatical competence that shows the importance of the structural rules of the language, sociolinguistic competence with which sociocultural context has gained some significance

in language teaching, discourse competence which puts the importance of pragmatics into the foreground and the strategic competence

"*Instruction based on learners' interest*" is another point concentrated on by Vygotsky (1997). According to him, if the content of the learning appeals to the students, they will be more enthusiastic to learn and take part in the learning process. Genesee (1994) confirms that the content of the lessons does not need to be academic but it may include any topic of an interest and importance to learners.

"*The role of the teachers*" has also been specified under this theory and Vygotsky (1997) claims that teachers must play an active role in the dynamic nature of language teaching, which means that they have to act as the "director of the social environment" (p.339). In other words, teachers are responsible for making the necessary arrangements in the learning environment to make it suitable for the learners who will feel that there are perfect conditions which have been previously arranged to facilitate their learning. Thus, teachers must also guide their students' learning process out of their school time. They may assign some tasks for them to be completed to improve their language skills. These assignments might require social interaction between peers or other adults who can provide the learners with some benefits that they need to improve their language proficiency.

The interaction phase is an indispensable part of sociocultural learning theory. This interaction might take place among students who might directly contact with either their peers or with other adults out of their school context. This process might come up the term "*zone of proximal development*" which has been defined by Vygotsky (1978) as "the distance between the actual developmental level as determined by independent problem-solving and the level of potential problem-solving abilities as determined through problem solving under adult guidance or in cooperation with more capable peers" (p.86). This means that a more deficient learner will benefit from the knowledge of a more proficient peer or an adult who will facilitate the former's learning process. Cook (2008) articulates that "the

gap between the learner's current state and their future knowledge is bridged by assistance from others; learning demands social interaction so that the learner can internalize knowledge out of external action" (p.229). In order for such a learning to take place, cooperation and collaboration among the students are needed by means of social interaction. Newman, Gleitman, and Cole (1989, cited in Lantolf & Thorne, 2006) consider dialogic interaction and social mediation as the necessary elements for learning and development to occur. This ZPD (Zone of proximal development) concept has brought up another term "scaffolding", which has been defined by:

"the knowledgeable person (adult, teacher, or peer) helps the less knowledgeable (child, or student) to accomplish a task which he or she would not otherwise be able to do by himself or herself. It is also interpreted as anything a learner benefits from or consults with, which might be a dictionary, grammar books, the traditional classroom technique of Initiation, Response, and Follow up (IRF), or any corrective feedback offered by the teacher" (p.689).

It can be concluded from the quote above that scaffolding can be provided to the learners either by means of their peers and teachers or the materials that they use to improve their language proficiency.

These are the elements that have been incorporated in sociocultural learning theory. These elements have been explained briefly and their role in language learning in terms of the efficiency have long been questioned.

The aim of study

Though there have been some papers that explains the sociocultural learning theories in language teaching that focus on certain constructs of the theory and their effects on language learning (Fahim & Haghani, 2012, Eun & Lim, 2009; Nunan, 1992), there are very few studies carried out to observe the reflection of sociocultural learning theories in the real classrooms (Özfidan et al., 2014). In the latter study, the effect of three different factors (peer feedback, private speech, and self-efficacy) on sociocultural learning of the students have been observed in a class. However, this study was conducted to determine how both the cultural factors and some of the principal

constructs of sociocultural learning theory by Vygotsky (1987) had an impact on language learning process of the students who took their preparation year in which they were exposed to intensive language learning program in two different cities of Turkey. As the context is one of the crucial factors that has an impact on every learning process, the effect of it on the sociocultural learning environments must be investigated. Thus, the researcher tried to determine the influence of the context on both cultural learning and sociocultural learning elements. The research questions of this study are:

- What are the cultural elements focused on during the language teaching in these two different university contexts?
- What are the elements that affect sociocultural learning of these students?
- How are the certain elements in sociocultural learning theory handled in two different learning contexts?

Method

Research Design

This is a case study which was defined by Hitchcock and Hughes (1995) as:

"Case studies are set in temporal, geographical, organizational, institutional and other contexts that enable boundaries to be drawn around the case; they can be defined with reference to characteristics defined by individuals and groups involved; and they can be defined by participants' roles and functions in the case" (p.319).

It can be understood that it is a context-bond study and the conclusions drawn from this research were based on the views of the participants in the context of the study. What is more, the effects of the variables determined and explained in the previous part of this paper were investigated as Cohen et al. (2007) elaborate that "case studies can establish cause and effect, indeed one of their strengths is that they observe effects in real contexts, recognizing that context is a powerful determinant of both causes and effects" (p.253). For this reason, two different university contexts were determined and five different

students who were willing to participate in this were selected from each university and ten students in total were interviewed to collect data for the purpose of this study.

Study Group

As this is a contextual case study, two different student profiles were need to make a better comparison between the two contexts in which the data were collected. Thus, 5 students were chosen at their own will from a state university in Eskisehir in the Central Anatolian region of Turkey in which more oriental life standards are more dominant while the other 5 students were selected

by getting their consent from a state university located in Istanbul in Marmara region which is closer to western values so that a meaningful comparison could be made between these two different research contexts. All the participants of this study were chosen from the students enrolled in School of Foreign Languages in the universities that they were attending at the time of the study which was designed to determine the sociocultural factors on foreign language learning. Thus, these students were taught Academic English which they would need in their departments where they would get English-medium-instruction. This is the table that shows the profiles of the participants.

Table 1. Demographic information of participants

Codes	Accommodation	Department	Age	Socioeconomic status	Hometown	Prep year in High School	High School Graduation
I1	Dormitory	International Relations	19	Above average	Edirne	Yes	Social Science High School
I2	Dormitory	Theology	18	Above average	Izmit	No	Anatolian Religious High School
I3	Family home	International Relations	18	Above average	İstanbul	No	High School
I4	Own home	Business Administration	18	Above average	İzmit	No	Anatolian High School
I5	Family home	Environmental Engineer	19	Above average	İstanbul	No	Anatolian High School
ES1	Own home	Industrial Engineer	19	Average	Tekirdağ	Yes	High School
ES2	Dormitory	Metallurgy Science Engineering	19	Below average	İzmit	No	Anatolian High School
ES3	Dormitory	Architecture	19	Below average	Kastamonu	No	Science High School
ES4	Own home	Business Administration Engineering	18	Above average	İzmit	No	Anatolian High School
ES5	Dormitory	Computer Engineering	22	Average	Ankara	No	Anatolian Vocational High School

From Table 1, it can be understood that the student participants attending the state university in Istanbul were coded as I1, I2, I3, I4, and I5 whereas the ones enrolled in the state university in Eskisehir were coded as ES1, ES2, ES3, ES4, and ES5 so that their identities were shown to be “anonymous” as stated in the interviews. During the interviews, students were asked whether they had been familiar with their learning context before they started their higher education in the cities where they went for their study. All of the students in Istanbul had been there while the ones in Eskisehir went this city for the first time for their studies as they did not know much about the city of their university expect from ES1 who visited Eskisehir during a school trip. Thus, the familiarity level of the students with the learning context in

Istanbul was much higher than the ones in Eskisehir.

Another striking point in Table 1 is the socioeconomic status of the students in two different cities. The students in Istanbul categorized themselves as above average considering the economic conditions of Turkey while the ones in Eskisehir thought themselves either average or below average except from ES4 who considered his socioeconomic status as above average of the Turkish standards. The ones who claimed that they were above average stated that they could afford to buy what they wanted so they put themselves in that category.

Whether these learners had a prep year experience before they came to university was also equally important as their familiarity with an

intensive language learning program would have a positive influence on their success. However, only I1 and ES1 had a prep year experience in their high schools though they both stated that it was not as efficient as the one they had in university.

Data Collection Tool

Interviews: All the data for this study were collected via the interviews. The interviews were held with 10 different students in two different universities in two different cities. Five students attending the School of Foreign Languages in one of the state universities in Istanbul were interviewed in Istanbul while the ones in the state university in Eskisehir were interviewed by using technology with video-conferencing. All the interviews were audio recorded by the researcher with the permission of the participants so that they could be transcribed for the later analysis. The duration of the interviews depended on the interviewee whose precious opinions were valued to a great extent. However, each interview took around 30 minutes. The interviews were conducted in the native tongue of the students which is Turkish so as to make them feel comfortable to share their own ideas freely and to prevent any misunderstanding. What is more, some concepts and terms related to different "categories of culture", "sociocultural learning" as well as "socioeconomic status" were explained in detail to the students to clarify what they had already known about these and to make them give proper responses to the questions including these terms.

The interview questions were written by the researcher considering the research questions. What is more, the researcher got an expert view before the use of the questions in the interviews from another academic. Thus, he made some minor changes in the interview questions taking the expert views of the colleague who wanted to contribute to both the reliability and validity of the study. Wasser and Bresler (1996) define this as "a process when the researchers bring together their different kinds of knowledge, experience, and beliefs to forge new meanings throughout the inquiry in which they are engaged" (p.13). The

interview questions were semi-structured as participants were encouraged to exemplify what they had stated. What is more, Gall et al. (2003) think that "in qualitative research, the interview format is not tightly structured because the researcher's target is to make respondents feel free to express their view of a phenomenon in their own terms" (p.239).

Data Analysis

Case study tactics were used as for the analysis of this case study research and validation measures (Yin, 2014). Thus, procedures and questions were related to citations and research questions. Also, the validity of the interview questions was sustained by getting an expert view for the content appropriacy. Before the interviews were initiated, the interview questions were piloted with a student who was not included in this study. With these steps, face validity and reliability were both established.

As this is a case study, "analysis here is almost inevitably interpretive" (Cohen et al, 2007, p.469). Thus, all the qualitative data collected for the purpose of this study via interviews were analyzed "in order to find constructs, themes, and patterns that can be used to describe and explain the phenomenon being studied" (Gall et al., 2003, p.453). The transcriptions of the interviews were put into themes and categories (Krippendorp, 2004). From these categories which are defined as "the main groupings of constructs or key features of the text, showing links between units of analysis" (Cohen et al., 2007, p.478); certain codes, which define "the smallest element of material that can be analyzed" (Cohen et al., 2007, p.477), were all related to the research questions.

With the "codes" available and thematically categorized under the related research question, the data were ready for analysis. Some of the quotes from the transcriptions of the interviews were also given in the results section as Gall et al. (2003) claim that "direct quotes of the remarks by the case study participants were particularly effective because they clarify the emic perspective, that is, the meaning of the phenomenon from the

point of view of the participants" (p.469). These quotes of the participant students clarified the case.

Results

Cultural Elements in Language Teaching

The participants were asked in the interviews whether culture teaching was given some kind of importance in the curriculums of their schools. All of the participants in the university in Istanbul said that culture was integrated with the curriculum whereas only ES2, ES3, and ES5 stated that culture was given some importance in their curriculums. However, ES1 and ES4 said that no importance was given. ES1 elaborated on the issue by saying:

"Instructors are more concentrated on teaching the contents of the book. Only very few of them share their own experiences with us but, in general, culture is not given sufficient importance in our education".

Though the participants in the university in Istanbul seemed to be quite satisfied with the cultural education that they got, there were some hesitations about the sufficiency of it among the learners in Eskişehir.

After sharing their thoughts about culture teaching, participants were asked about the categories of culture made by Adaskou et al. (1990) and whether these categories were covered in their classes. Here is the table that shows their responses.

Table 2. The cover of the components of culture in language classes (Adaskou et al., 1990)

	I1	I2	I3	I4	I5	ES1	ES2	ES3	ES4	ES5
the aesthetic sense (media, cinema, music and literature)	Yes	Yes	Yes	Yes	Yes	No	No	Partial yes	No	No
the sociological sense (family, education, interpersonal relations, material conditions work and leisure, traditions)	Yes	Yes	Yes	Yes	Yes	Yes	Partial yes	Yes	Yes	Partial yes
the semantic sense (conceptions and thought processes)	No	No	No	No	No	No	No	No	No	No
the pragmatic (or sociolinguistic) sense ('appropriacy' in language use)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

It can be understood from Table 2 that in both universities, the pragmatic sense was given much more importance while teaching English as there was a consensus among the students that this was significantly emphasized in the lessons. ES1 explained:

"This is given so much importance as our instructors show the use of different words and sentence structures in different contexts and they always warn us to choose the appropriate word for a certain context. For instance, in a formal mail, there are some words that we have to avoid using".

This category (the pragmatic sense) was also emphasized by all the students in the university in Istanbul in the interviews. What is more, there was also a consensus among two students' groups in terms of the lack of the semantic sense in the lessons. However, when it comes to sociological sense, though students in Istanbul said that it was

covered in the lessons, the ones in Eskişehir hesitantly said "yes". ES2 said:

"They are covered only when these topics are included in the book that we use as our main course book. Otherwise, they are not elaborated on much, unfortunately".

The biggest difference between these two student groups was the integration of the aesthetic sense of culture with the language lessons as the participants in Istanbul said that it was covered whilst the ones in Eskişehir said it was not covered at all except from ES3 who said it was partially covered. I4 explained the situation:

"We have been exposed to foreign music and we try to understand the song both linguistically and culturally so I feel that I have developed myself in this musical sense a lot with the help of our lessons".

I1, I2, I3 and I5 agreed with their friend and said much interest was given specifically in music with respect to the aesthetic sense of culture.

Another categorization of culture was made by Byrd et al. (2011) and students were also asked whether these categories were covered in their lessons. Here is the table that shows their responses.

Table 3. The cover of the components of culture in language classes (Byrd et al., 2011)

	I1	I2	I3	I4	I5	ES1	ES2	ES3	ES4	ES5
Cultural Products (tangible products- literature, art, crafts and song, dance)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Cultural Practices (knowledge of what to do, when, and where)	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No
Cultural Perspectives (ideas and attitudes)	No	No	No	No	No	No	No	No	No	No

It can be concluded from Table 2 that all the participants reached a consensus both on the cover of cultural products expect from ES5 and on the lack of cultural perspectives in their language lessons. However, as for cultural practices, all the participant students in İstanbul agreed that they covered it whereas the ones in Eskisehir said that they did not cover anything about it except from ES3.

Elements of sociocultural learning

During the interviews, students were asked about where they stayed, their socioeconomic status and the city of their university. They were later asked to relate them to the way they studied English language and how these variables affected their sociocultural learning. It was found from their responses that the accommodation type, socioeconomic status and the city of their university played a crucial role in both their cultural and sociocultural learning.

I1, I2, ES2, ES3, and ES5 stated that they stayed in the dorm. I1 and I2 talked about the positive sides of the dormitory life on their studies whereas ES2, ES3 and ES5 mentioned the negative sides of their dormitory lives. I1 said:

"I had some very determined friends in my dorm so they were encouraging me to study for my lessons. I sometimes consulted my friends for the points that were confusing me and they explained them to me".

I2 talked about another strength of her dorm life by saying:

"Our dorm was organizing some extra-curricular activities such as seminars or handcraft workshops in which I had participated. What is more, there was a foreigner next door so I was practicing my language skills with her. There were some times when I also asked other people to explain some of the points that I had not understood in the lessons".

This quote obviously showed positive influence of dormitory life both on the cultural and sociocultural learning. However, the ones in Eskisehir talked about the negative sides of dormitory life. ES5 said:

"The dorm was so crowded and noisy. Also, people did not respect each other and they were behaving themselves without paying any attention to the rules and regulations."

When it comes to the people living in their own homes alone, I4, ES1, and ES4 all said it was something negative for their learning. ES4 explained:

"As I was all alone at home, there was no one to motivate me and encourage me to study for my lessons. If I had had a friend who was inspiring, I would have studied more English. However, what I did was to find some activities that would engage me such as watching films, which distracted my concentration on my studies".

I3 and I5 said that they stayed in their family home which might be considered as both advantageous due to the lack of household responsibilities and disadvantageous because of the interruptions from the family members while studying.

Another factor participant students stated as one of the most significant factors that affected their sociocultural learning was the socioeconomic status which they all thought that there was a direct link between these two. I5 elaborated on the issue:

"If your socioeconomic status is high enough to give you the freedom to do what you want, this will pave you the way to develop your sociocultural knowledge because unless you have money, you will not be able to afford to visit museums, watch theaters and movies. What is more, you cannot go abroad to broaden your horizon. Even in a simplest basis, you cannot socialize with your friends even in a café where you must pay to eat and drink."

It can also be understood from Table 1 that all the participant students in İstanbul categorized their socioeconomic status as "above the average" considering the conditions of the country while the ones in Eskişehir thought themselves either as average or below average apart from ES4 who said his condition was above average.

Students were also asked about the relation and the effect of the city where they study on their sociocultural and cultural learning. The participants in İstanbul all said that the city had some positive influence both on their cultural and sociocultural learning. I5 explained this situation:

"İstanbul is a culturally rich city as it used to be the capital of several civilizations and empires so it attracts a lot of tourists from all around the country. Therefore, you can meet with people from different culture and learn from them. This makes me develop myself linguistically as we can speak English with them. In addition to linguistic development, people can broaden their horizons in this city as they learn from each other".

From this perspective, it can be understood that the learners in İstanbul thought that the city contributed a lot to their language and cultural development as well as sociocultural learning as there are so many different profiles of people coming from different places and cultures. When it comes to the students in Eskişehir, they could not relate the city to their cultural and linguistic development but the university context which contributed a lot to their sociocultural and linguistic development. ES2 elaborated on the issue:

"I do not think the city has come cultural roots but our university has some international students with whom you can speak and share your cultural knowledge and experiences. This contributes a lot to your linguistic competence. What is more, there are some cultural activities such as cinemas and theatres in the city so that you can enjoy and spend your free time with your friends".

This quote also shows that participants in Eskişehir related their sociocultural and cultural improvement to the facilities that their university offered to them. Though Eskişehir also offers some cultural activities, it is not as culturally rich as İstanbul in terms of history and different profiles of people.

The Way the Elements of Sociocultural Learning Handled in Two Different Contexts

In the interviews, students were informed about the certain elements of sociocultural learning and they were asked whether they experienced them in their language learning process. Here is the table that shows their responses.

Table 4. The existence of elements in sociocultural learning of the language learners

	I1	I2	I3	I4	I5	ES1	ES2	ES3	ES4	ES5
Bilingual instruction	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pragmatics of the language	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Instruction based on learners' interest	No	No	No	No	No	No	No	No	No	No
The guidance of the teachers	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Scaffolding	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes

When participant students were asked whether their teachers turned to their native tongue (Turkish) in the lessons, all of them said that they did because they had to explain some of the points,

especially grammar, which we may find difficult to understand.

All of the participants also stated that their instructors showed them the pragmatics of the language. They were informed about the

importance of context in terms of the word choice and grammatical structures.

When it comes to the instruction based on learners' interest, all of the participants said this was not the thing that they had faced in the classroom. ES4 explained:

"This was unfortunately not the case. Whatever existed in the book or in the materials was covered in the lessons. However, we did not find them interesting at all. Students must be motivated and we can be more enthusiastic in the lessons only when our interests are paid attention to".

Participants were complaining about the lack of instruction based on their interest. However, they all said that they were satisfied with the guidance from their instructors as they directed them to on-

task behaviors both in the class and out of the class with the assignments given to them.

Students were also asked whether they got any help about something they did not understand from a person who was considered to be in a better level in terms of language proficiency (scaffolding). All of the participants in Istanbul said "yes" whereas only ES1, ES3, and ES5 admitting getting help from their peers as ES2 and ES4 said they did not consult to anyone for help. Students were also asked to whom they consulted to get help and which skill was their main concern to get help. They were also asked whether it was beneficial. Here is the table that shows it.

Table 5. Scaffolding of the learners

	I1	I2	I3	I4	I5	ES1	ES2	ES3	ES4	ES5
Who?	Instructor	Classmate	Classmate	Classmate	Classmate	Classmate	-	Classmate	-	Classmate
Which skill?	Writing/ Grammar	Writing/ Grammar	Writing	Writing	Writing/ Grammar	Grammar/ writing	-	Grammar	-	Grammar
Benefit?	Yes	Yes	Yes	Yes	yes		-	Yes	-	Yes

From the table, it can be understood that participant students mostly preferred to get help from their friends except from I1 who got help from the instructor saying that she was by far the best student in the class so there was no one to reach her level. What is more, all the participants in Istanbul said they needed help to improve their writing along with grammar which was mentioned by I1, I2, and I5 whereas the ones in Eskisehir said that they needed help in terms of grammar. Only ES1 stated that he got help to improve his writing as well as his grammar. All the participants who got help said that it was a beneficial process expect from ES2 and ES4, both of whom did not have any scaffolding.

When participant students were asked about each of these sociocultural learning elements and how they were handled in the classroom, they were asked whether they could relate these learning processes to the city in which they were studying English. All of the participants in Istanbul said that they could relate all these elements of sociocultural learning to city of their university. I1 explained the situation:

"There is so much of influence of Istanbul on our sociocultural learning as this is a well-developed city in

every sector so education is one of them. The availability of the quality instructors and education is because of the fact that one can easily reach these sources in Istanbul".

This quote shows that Istanbul has an influence on the sociocultural learning of the language learners here. However, when the same question was asked to the students in Eskisehir, they all said that they could not relate the city to these sociocultural learning elements mentioned in the interviews. Only ES3 and ES5 said that they could be related to the university but not the city. ES3 explained that:

"There is no connection between these sociocultural learning elements and the city but I can relate them to the university where we get our education because I think the quality of education is above the average considering the condition of Turkey as we have very qualified teachers here".

It can be concluded that learners in Eskisehir did not find any relation between the atmosphere of the city and their sociocultural learning facilities.

Discussion and Conclusion

It can be understood that culture teaching must be given more importance in language classes as

language and culture are interrelated components, which cannot be considered separately (Sun, 2015). It was found that students in Eskisehir said it was not given sufficient attention to it. However, it was found in the study conducted by Aidinlou and Kejal (2012) that teaching cultural elements of the language helped the participant students gain the better insight of the English language as a foreign language and there was 24 % increase in their performance while they were doing culture dependent tasks.

Another important point to notice is that the “pragmatic sense” of culture was more focused during the lessons. This was understandable as it was easy to teach with the certain grammatical explanations with the right word choices in certain contexts as “L2 pedagogy encompasses any form of educational activity designed to promote the internalization of, and control over, the language that learners are studying” (van Compernelle & Williams, 2013, p.278). What is more, “sociocultural sense” of culture was said to be taught in two different contexts while the “aesthetic sense” was ignored in Eskisehir. This might be related to the context of the learning/teaching environment as it highly affects the language teaching procedure (Pazyura, 2016). “Semantic sense” of culture and “cultural perspectives” were both ignored in classes because these elements of culture might be considered as “abstract” by the teachers so it was difficult to teach whereas the “pragmatic sense” of culture and “cultural practices” might be thought to be more “concrete”; thus, it was easy for the teachers to integrate them with their lesson plans.

Accommodation type of the students also is another factor that affects their sociocultural learning as the ones staying in dorms in Istanbul talked about the positive sides of their stay as they cooperated with their peers in terms of their language learning. This cooperation and collaboration spirit positively affect their language learning process as Lee (2015) mentions the importance of this in her experiences in teaching English at Christopher House in Chicago where students from low-income families (mostly immigrants) help each other a lot.

Socioeconomic status of the learners is another equally important factor that affects their

sociocultural learning. It was found in the study of Bonilla and Cruz-Arcila (2014) that the socioeconomic status of the learners negatively affects their sociocultural learning and put the ones living in the suburban parts of the cities in Colombia in a disadvantageous position in terms of economic, technologic and sociocultural factors. Thus, the facilities that the city offers have an influence on the language learning process of the learners. In this study, it was found that the university in Eskisehir created some opportunities for the learners to benefit from them despite the lack of variety of the activities in Eskisehir which cannot be compared to Istanbul in this sense.

It was found in this study that there was no instruction based on the learners’ interest and all of the participant students complained that the instructors were in a rush to cover the contents of the books. This might be due to the pacing and the syllabus that teachers had to keep up with. However, it was the teachers’ role to guide and create an environment that will motivate the students to learn according to the sociocultural learning theories (Eun & Lim, 2009). Therefore, the integration of certain contents with the curriculum in accordance with the interests of the learners will positively affect the process. In the study carried out by Ivygina et al. (2019), it was shown that the addition of historical texts motivated the Turkmen students learning Russian as a foreign language and the level of their sociocultural competence increased a lot as well as their creativity, desire to acknowledge other cultures, and their academic skills in general. What is more, students’ desire to cooperate with the teachers increased, as well.

When it comes to the scaffolding of the students, most of them stated the benefit of this process as Cullen et al. (2013) stated the importance of the creation of supportive learning environments and learning communities characterized by high levels of social presence which result from strong collaboration, interactivity, mutual respect and interdependence among the students. In order to increase the efficiency of this process, learners with similar interest might be encouraged to study together (Li 2011; Rideout et al. 2008; Yeh 2010) because this will enable further opportunities to enhance belongingness; collaboration in small groups

(Dickey 2004; Ducan and Barnett 2009; Li 2011). However, it is interesting that participants in this study pointed out that they were scaffolding just to improve their writing and grammar skills. However, scaffolding among the learners will also help them develop their speaking skills as it was shown because cooperation among learners will contribute a lot to their speaking performance (Darmuki et al., 2018; Usman et al., 2018).

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A Scoping Review on Practicum of Turkish Pre-Service EFL Teachers during COVID-19

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Abstract

The practicum period is a crucial component of teacher education as it embodies the first phases into "real" teaching and thus provides a leap into professional transformation and growth on the side of pre-service teachers. Nevertheless, the COVID-19 pandemic jeopardized this period and placed the educational contexts at stake in providing that reality. Within this frame, the present study focuses on the research conducted on the practicum period of Turkish pre-service teachers of English during the pandemic. More specifically, the research question that the article addresses is "what is the nature of studies conducted about Turkish pre-service EFL teachers' practicum period during the COVID-19 pandemic concerning their characteristics, methodologies and contributions to the field?" With the aim of answering the research question, the seven studies conducted in Turkey regarding the practicum orientations, foci and context, with a scoping review methodology. This scoping review demonstrated both positive/beneficial and negative/challenging aspects of the pandemic period for the English language teacher education context of Turkey. The results of the present study displayed a wider lens in perceiving the English language teaching and teacher education settings during both such emergencies and transition from existing to 'new normal'.

Key Words: Practicum, English Language Teaching, Pre-Service EFL Teachers, Scoping Review, COVID-19.

Öz

Staj uygulamaları, öğretmen adaylarının ilk "gerçek" öğretim aşamasını oluşturması ve dolayısıyla mesleki dönüşüm ve gelişime bir geçiş sağlaması nedeniyle, öğretmen eğitiminin çok önemli bir dönemidir. Fakat COVID-19 salgını bu dönemi tehlikeye sokmuş bu gerçekliğin yerine getirilmesi görevini de eğitim kurumlarına yüklemiştir. Bu çerçevede, çalışmamız salgın esnasında Türkiye'de İngilizce Öğretmenliği bölümlerinde okuyan öğrencilerin staj sürecini kapsayan yayınlanmış diğer çalışmalara odaklanmaktadır. Daha net ifadeyle, bu makale, "COVID-19 salgını sırasında Türkiye'de İngilizce Öğretmenliği Bölümlerinin staj uygulamaları kavramını ele alan çalışmaların özellikleri, metotları ve alana katkıları açısından doğası nedir?" araştırma sorusunu cevaplamayı amaçlamaktadır. Bu soruyu cevaplamak için, Türkiye'de salgın esnasında İngilizce Öğretmenliği bölümlerinde okuyan öğrencilerin staj uygulamaları deneyimi sürecine odaklanan çalışmalar taranmış ve toplamda yedi yayına ulaşılmıştır. Bu çalışmaların yayın özellikleri, metodolojik yaklaşımları ile amaç ve bağlamları, kapsam analizi metoduyla analiz edilmiştir. Kapsam analizi, salgın sürecinin Türkiye'deki İngilizce öğretmeni eğitimine pozitif/yararlı ve negatif/zorlayıcı etkilerini gözününe sermiştir. Bulgular, İngilizce öğretimi ve öğretmen yetiştirme çerçevesinde varolandan 'yeni normal'e geçişte geniş bir bakış açısına erişimde katkılar sunmaktadır.

Anahtar Kelimeler: Staj Uygulamaları, İngilizce Öğretimi, Öğretmen Adayları, Kapsam Analizi, COVID-19.

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Introduction

Online learning, though not a new concept for education sector, has become a priority since pandemic breakout in March 2020 for the decision-making authorities of education globally (e.g., Departments of Education), and the agents such as school managers, teachers, students and their families. With the closure of schools, teachers quickly had to adopt online teaching, teacher education included. This rapid and forced change brought many challenges and constraints to the regular practices due to poor online infrastructure, teachers' lack of experience and inadequate digital skills, inappropriate home environment (König et al., 2020; Zhang et al., 2020). Additionally, problems about teachers' having unsatisfactory support and mentoring for using such platforms in teaching were also reported (Huber & Helm, 2020; Judd et al., 2020). Similar results were found in various studies conducted at tertiary levels (Ali, 2020; Huang, 2020; Karataş & Tuncer, 2020; Mishra et al., 2020; Paudel, 2021).

Swift transition from face-to-face to online platforms in teaching added extra responsibilities to foreign language teacher education institutions, particularly in practice-nature courses such as practicum considering the fact that all teaching activities are transferred to online platforms. In fact, before the virus outbreak, there was already a positive body of literature that suggested integrating ICT into pre-service teacher education taking into account online learning mode offers active engagement and higher level thinking in supportive group works as well as improving digital literacy (Bahcivan et al., 2019; Brown, 2014; Forbes & Khoo, 2015; Gillies, 2008; Kibar & Ozer, 2020; Weschke et al., 2011). Yet, the suggestion was a blended approach rather than holistic.

Practicum is the integral and key part of a teacher education program (Anderson & Stillman, 2013; Smith & Lev-Ari, 2005). Face-to-face interaction in English pre-service teachers' learning to teach is extremely significant to enable theory and practice interactions under the guidance of a mentor and a university supervisor (Allen & Wright, 2014; Darling-Hammond, 2017).

Clinical experience also allows to experience actual school context and closely observe student profiles, and helps to develop more realistic expectations from the professional settings (Farrell, 2008; Seferoğlu, 2006; Tülüce & Çeçen, 2016; Yangin Eksi & Gungor, 2018).

In Turkey, practicum is conducted with two courses during the fourth year of the EFL teacher education curriculum currently. It has two segments: In the fall semester, pre-service teachers are placed at one of the local primary, middle or high schools, and there they conduct classroom observations with various pedagogical foci such as classroom management, teacher-student roles and practices, instructional design and assessment during the course called School Experience. A total of 14 weeks spent at schools with an assigned mentor and an accompanying university supervisor working collaboratively to ensure that pre-service teachers allocate at least four hours of classroom observation weekly constitute the first part of the practicum process. Each week, with pre-assigned observation tasks, student teachers prepare their field notes and write reflective reports for both the mentor and the supervisor while discussing the issues that emerged and receiving feedback, respectively. They carry out critical and reflective dialogues with their university supervisor during one class hour on campus. They are assessed upon their respective reflective performance as well as task completion.

In the spring semester, student teachers take another 14-week practicum course, namely Practice Teaching, as the second phase of the practicum process. This time, they spend at least six hours during 12 weeks in the classroom not only for observations but also practice teaching. They have to perform at least four micro-teaching, two peer-assessments and one fully planned teaching to be assessed for a final. After each performance, they also generate mentor and supervisor feedback within two classroom hours on campus.

Nevertheless, the practicum phase is still perceived as the most critical and challenging part of teacher education programs as well (Corcoran, 1981; Ewing & Smith, 2003; Gold, 1996; Kane, et al.,

2006) being important and the best part (Feiman-Nemser, 2001; Smith & Lev-Ari, 2005). A study by Başaran Uysal and Savaş (2021) analysing the practicum studies conducted in the field of EFL teacher education in the Turkish context, categorize the issues encountered within seven domains: mentor, supervisor, school, practice teaching, practicum, language, theory and practice relation. Underqualified mentors for assisting pre-service teachers professionally during the school visits, careless and unmotivated mentor attitudes, lack of feedback from the university supervisors who often pay no or very few visits to schools are among the problems reported by mentors and supervisors. Moreover, lack of technological infrastructure, uninterested and misbehaving students in classes, and attitudes like not being accepted as teachers by managers are problems originating from practice schools. Practice teaching itself poses a big challenge for pre-service teachers in that they are expected to handle many tasks in tandem with the class flow such as classroom management, planning and executing the tasks, giving comprehensive instructions, and managing mixed-ability student learning. This all at once requirement of the practicum process putting student teachers in a difficult state during the 4th year, when they take practicum courses, is already a time when most are busy with preparation for the teacher certification test (KPSS-Selection Examination for Professional Posts in Public Organizations). They also have to cope with target language proficiency where most of the conversation in class has to be in English. Linguistic problems experienced are also realized while teaching language components to students, which, in turn, creates a big anxiety. Last but not least is theory and practice discrepancy.

Transforming to remote teaching during the pandemic, practicum courses have also been moved into online classes. As a result, school placements are conducted from home. Beset with many problems even before the pandemic (Başaran Uysal & Savaş, 2021), the practicum process added more tasks onto the agents (i.e., schools, faculties, teachers, academics, and naturally student teachers) during the lockdown. Due to ongoing remote teaching practices, EFL teacher education departments had to resolve not

only aforementioned practicum issues but also emerging ones during e-practicum. With the circular letters sent to all universities by the Turkish Higher Education Council (HEC) that practicum in teacher education faculties had to be conducted online and only university-based and fully online with school-university partnerships onwards October 2020. Thus, practice teaching has been realized both only university-based and via school online platforms during three academic terms that the pandemic lasted in Turkey. The Ministry of National Education decided to conduct online classes on its intranet called Education Information Network (known as EBA) since the beginning of the coronavirus outbreak. However, the first challenge for universities emerged when pre-service teachers who would not log into EBA for observing and performing teaching activities. Therefore, mentors moved their teaching to the Zoom platform.

What happened, after all, during the practicum process is the main concern of this scoping review. Studies conducted on practicum processes of EFL teacher candidates during the pandemic are analyzed to shed light how pre-service teachers, schools and universities handled the practice-based procedures. What type of topics are significant and what other problems and opportunities emerged in such studies are the focus in that this *new normal* seem to be opening new pathways for near future practices of teacher education programs.

Method

Study Design

This study is designed as a scoping review (Arksey & O'Malley, 2005). A five-step framework proposed by Arksey and O'Malley (2005) highlights the high level of transparency and repeatability of searching strategy for reliability purposes of the findings. Scoping review is accepted as a powerful methodological tool since it addresses a large variety of topics including various study designs unlike systematic reviews, nor meta analyses where only quantitative research design and statistical results are collated and summarized. The framework of Arksey and

O'Malley (2005) follows the guidelines for identifying the research question and relevant studies, selecting the studies to be analyzed, plotting the data and finally assembling, summarizing and reporting the findings, respectively. Since our aim is to display the main characteristics and trends on the topic in question, we choose to employ the scoping review approach to see the nature of studies conducted in a particular context, i.e., Turkish pre-service EFL teachers' practicum studies during the COVID-19 pandemic where fully online education protocols were implemented between March 2020 to September 2021.

Data Collection

The first step we realized was to define the research question with the relevant studies. Our research question is,

What is the nature of studies conducted during the COVID-19 pandemic in the topic of Turkish pre-service EFL teachers' practicum period in terms of their characteristics, methodologies and contributions to the field?

As can be realized from this research question, the scope of the current study is focusing on the publications about EFL pre-service teachers' practicum period during the COVID-19 pandemic, from March 2020 to the submission of the manuscript. Building the time and context boundaries helped us ensure the validity of the current study while realizing the second step for data collection.

The second step was to select the studies to be analyzed. For this, we went through databases of Google Scholar, ULAKBIM-TR, ERIC, Scopus, Web of Science, EBSCO Academic, JSTOR, ProQuest, and Thesis Center of HEC where we used a number of key word combinations, *COVID-19, practicum, practice teaching, school experience, EFL, pre-service teachers, English, Turkey, Turkish*. Selection was based on the articles conducted *only* during the pandemic (i.e., March 2020-October 2021) when schools went fully online and in the Turkish context with EFL pre-service teachers. Publications both in Turkish and English were

included. Blogs, institutional reports, white/green/blue/yellow papers, press releases, news, online posts and informative websites were excluded. As for the third step, we have come up with six peer-reviewed articles and a book chapter as given below. Given the time constraint, the number of the publications to be analyzed is understandably found to be limited. Studies are ordered alphabetically and each is given a code (i.e., S1, S2, and so on) for further reference in the findings section.

S1: Ersin, P., & Atay, D. (2021). Exploring online mentoring with preservice teachers in a pandemic and the need to deliver quality education. *International Journal of Mentoring and Coaching in Education*, 10(2), 203-215.

S2: Ersin, P., Atay, D., & Mede, E. (2020). Boosting preservice teachers' competence and online teaching readiness through e-practicum during the COVID-19 outbreak. *International Journal of TESOL Studies*, 2(2), 112-124.

S3: Gök Çolak, F., & Efeoğlu, G. (2020). Yeni normalleşme sürecinde öğretmenlik uygulaması dersine yönelik ihtiyaç analizi: SWOT analizi örneği. *Kesit Akademi Dergisi*, 7(27), 176-197.

S4: Korucu-Kış, S. (2021). Preparing student teachers for real classrooms through virtual vicarious experiences of critical incidents during remote practicum: A meaningful-experiential learning perspective. *Education and Information Technologies*, 26, 6949-6971.

S5: Koşar, G. (2021). Distance teaching practicum: Its impact on pre-service EFL teachers' preparedness for teaching. *IAFOR Journal of Education*, 9(2), 111-126.

S6: Özkanal, Ü., Yüksel, İ., & Uysal, B. Ç. B. (2020). The pre-service teachers' reflection-on-action during distance practicum: a critical view on EBA TV English courses. *Eğitimde Nitel Araştırmalar Dergisi*, 8(4), 1347-1364.

S7: Yüksel, İ., & Uysal, B. C. B. (2021). Foreign language education through online communities of practice. In C. H. Xiang (Ed.), *Trends and Developments for the Future of Language Education in Higher Education* (pp. 141-165). IGI Global.

For reliability and validity concerns, we have explained the selection process in a detailed way

so that it would be the same if any other researchers repeat the same search criteria. Another measure taken for validity and reliability is the exclusion of one to two studies that focused on pre-service EFL teachers together with other departments' student-teachers. We omitted such studies because data in them were analysed mixed with the ones from student-teachers of other departments. On the other hand, S3 was included because it analyzed and presented the data gathered from EFL and pre-school student teachers separately, so it was easy to follow the findings based only on EFL pre-service teachers on the topic in question.

Data Analysis

After completing the first three steps in accordance with Arksey and O'Malley's (2005) model, the fourth step, namely plotting the data, was realized via marking the articles for the following three categories of criteria, as in Table 1. The first and the second categories in Table 1 were summarized in terms of descriptive statistics (*f* and percentage values), while the third category was thematically analyzed for a summary of findings, all of which together constitute the final step of the scoping review framework.

*Table 1. Coding criteria**

	Criterion	Accepted Value
1. Bibliography	Author(s)	Any
	Published year	During the COVID-19 Pandemic (March 2020-September 2021)
	Title	Any
	Category of publication	Journal Article, Book Chapter, Theses and Dissertations
2. Research Design	Language	Turkish and/or English
	Type of study	Empirical, Non-Empirical
	Setting	Practicum
	Participants	Turkish Pre-Service EFL Teachers
3. Focus	Data analysis	Any
	Instrument	Any
	Aim	Any
	Findings	Any

**(adapted from Selvi, 2021)*

For reliability concerns, studies that met the criteria displayed were coded separately by both of us, first; overall inter-rater reliability was 94%. Then, we held numerous online meetings to elaborate on and arrive at a consensus about the

findings of the present study for sustaining reliability.

Findings

The research question is analyzed in three layers, (a) bibliography, (b) research design, and (c) focus of the studies.

Bibliography

When bibliographic features of the studies are considered, Derin Atay of Bahçeşehir University (BAU), İlknur Yüksel and Banu Çiçek Başaran Uysal from Osmangazi University (OGU) have become the most publishing scholars with two articles each. Other scholars, Feride Gök Çolak and Gülümser Efeoğlu from Yıldız Teknik University, Saadet Korucu-Kış from Necmettin Erbakan University, Gülten Koşar from Mustafa Kemal University, Enisa Mede from BAU, and Ümit Özkanal from OGU published once on the topic in question. Three (42.85%) out of seven published studies were published in 2020; rest (*f*=4, 57,14%) in 2021.

Other than S7 which is a book chapter, all are peer-reviewed articles (*f*= 6, 85,71%). Except for S3 and S6, all five were published in international academic platforms such as Taylor & Francis, Springer and ERIC databases. Naturally, earlier published studies received more citations than the others. For example, S2 was cited 19 times; S6 seven times; both published in 2020. While S3 and S7 were receiving no citations, S4 was mentioned once; S1 three and S5 four times. S3 is an exception in this matter; it was published in 2020 but has not received any citation, yet. This might be due to the fact that it was the only study published in Turkish language.

Research Design

This paper also focuses on analyzing studies in terms of their methodological orientations. When Table 1 is considered, the second part deals with the research design, setting, and instrument. All the studies in question are empirical ones where they collected data from EFL pre-service teachers studying in Turkey and registered at practicum

courses. Data were collected qualitatively in all and analyzed via qualitative methods, though sub categories were various. S3 chose phenomenography (14.28%); S4, action research (14.28%), S5, S6 and S7, case studies (42.85%). S1 and S2 (28.57%) cited no specific category other than being qualitative research. As for research design, setting, and instrumentation, Table 2 below outlines the general picture.

Table 2. Research design

	Design	Setting	Instrument
S1	Qualitative	School Experience (Pandemic Phase 1)	Focus group interview
S2	Qualitative	Teaching Practice (Pandemic Phase 1)	E-mentoring discussion, focus group interview
S3	Qualitative-Phenomenography	Teaching Practice (Pandemic Phase 3)	Interview
S4	Qualitative-Action research	School Experience (Pandemic Phase 2)	Online discussion post, reflective journal, focus group interview
S5	Qualitative-Case study	Teaching Practice (Pandemic Phase 1)	Questionnaire with open-ended items
S6	Qualitative-Case study	Teaching Practice (Pandemic Phase 1)	Reflective journal
S7	Qualitative-Case study	School Experience (Pandemic Phase 2)	Reflective journal

For setting, all the studies were conducted in ELT Departments at Turkish universities with EFL pre-service teachers. However, time and the course of the practicum varies. S1, S4 and S7 (42.85%) conducted their studies in the first phase of practicum, i.e., School Experience where student-teachers perform classroom observations and prepare reflective reports. S2, S3, S5 and S6 (57.14%) preferred to work during the second phase, Teaching Practice.

Three fully-online academic semesters have been spent so far since the beginning of the COVID-19 pandemic in Turkey. Parallel with this, we categorized the setting for duration into three phases all of which were conducted completely online accordingly. First phase (i.e., Pandemic Phase 1 according to Table 2) began when the pandemic started in March 2020, and extended till mid-June 2020, when the semester ended. It is a spring term in Turkey and pre-service teachers had

already registered for the Teaching Practice course of the practicum process. Second phase (i.e., Pandemic Phase 2) started September 2020 and ended by mid-January 2021, which constitutes the fall semester. Then, student teachers took the School Observation course. Final phase (i.e., Pandemic Phase 3) starting from February 2021 and ending by mid-June 2021 is just like Pandemic Phase 1. Although first and the third phases look the same at first glance, in terms of policies and practices, they vary. While in the first phase school placements were not allowed and cancelled, in the third phase this was done via online platforms like Zoom application. When the studies at Table 2 are analyzed, most of them (f=4, 57.14%) were conducted during the Pandemic Phase 1 (S1, S2, S5 and S6). It is observed that S4 and S7 were done in Pandemic Phase 2. Only S3 was performed during Pandemic Phase 3.

As for data collection tools, most of the studies (f=4, 57.14%) utilized interview protocols; among them, S1, S2 and S4 preferred focus group form. S4, S6 and S7 employed the reflective journals; S2 mentoring discussions, S4 online discussion posts and S5 an open-ended questionnaire. When the studies were examined, findings were mostly reported qualitatively together with participants' verbal responses. Beside this, while S3 and S6 picturized the themes emerged out of data analysis, S7 preferred to present them with descriptive statistics as well as participant artefacts. Similarly, S4 preferred to display all themes in a holistic table.

Focus

Focus is analyzed in terms of aims and findings of the scoped studies. In Table 3, all studies analyzed concentrated on eliciting pre-service teacher views, and verbs used for the indication of the aim such as *explore*, *find out*, *examine*, and *discover* clearly pinpoint that. Despite the variation in instrumentation, the overall aim of those researchers is how to make the practicum period beneficial as possible for all the actors involved.

Table 3. Focus

Study #	Objective(s)
S1	to uncover the different components of online mentoring as perceived and expected by the pre-service teachers.
S2	to explore the e-practicum and e-mentoring from the perspectives of the pre-service teachers.
S3	to do needs-analysis in line with the pre-service teachers' views on both positive and challenging aspects of the online practicum course.
S4	to find out whether experiencing critical incidents vicariously offer meaningful contributions to remote practicum from student teachers' viewpoint.
S5	to explore pre-service English-as-a-foreign-language teachers' conceptions of the influence of distance teaching practice on their preparedness for the first year of teaching.
S6	to examine the pre-service teachers' reflections on the action of experienced teachers teaching English through broadcasting; the EBA TV.
S7	to discover the challenges of online language teaching and to present practical tasks to address them by examining the reflections of prospective teachers.

For findings, various fruitful results were documented. Divided into two separate tables as positive/beneficial and negative/challenging aspects, Table 4 and 5 clearly demonstrate the outcomes of the seven studies, respectively. Those tables include some of the direct phrases and sentences from the relevant scoped studies in order to reflect the authors' own perspectives accurately. Some of the studies focused on the participants' observed perception of online education while some others had implementations. No matter what the method or intervention is, outcomes of those studies lead into the perception of positive/beneficial or negative/challenging aspects with regard to distance education practicum contexts caused by the pandemic.

According to Table 5, aiming at the components of online mentoring, S1 found that pre-service teachers expected more time and attention from their mentors and more classroom management topics from their supervisors. In Table 4, S2 documented that e-practicum is feasible and advantageous in experiencing digital integration into teacher education. S3 proved that e-practicum course can be advantageous especially for theoretical components since pre-service teachers felt more comfortable in participating, and they also witnessed how mentors dealt with problems during online education and how lessons could be successful if the academic level of the students was

good. Those pre-service teachers were content with perceiving the emergence of many digital tools that ease the task of the teachers. S3 also touched upon the difficulties arisen for the practicum such as classroom management, time constraints, and digital illiteracy of teachers in Table 5. However, the most important drawback of that online application might be the fact that pre-service teachers graduated without practicing the feeling of a real classroom atmosphere.

S4 is one of the studies with an implementation, i.e. Critical Incidents (CI), and pre-service teachers benefitted from action plan immensely in receiving a real-life like experience, observing multiple perspectives, increasing their content and pedagogical knowledge, and as a result they felt more confident in designing activities and solving problems according to Table 4. Participants also stated that the experience could be better if some changes were applied on group size, technical problems and the content of CIs. Focusing on pre-service teachers' conceptions on how ready they are for the first-year teaching, S5 showed that practicum could not be replaced with paperwork, and lack of school placement led to problems in professional self-confidence. Interactions among the pre-service teachers, mentors and supervisors were also problematic during the Distant Teaching Practice, which, in turn, disappointed prospective teachers.

S6 required pre-service teachers to observe classes broadcasted on EBA TV, which yielded both best practices and problems. Participants labeled the effective use of body language and realia together with the inclusion of many activities as best practices. Nevertheless, they pinpointed the problems with the materials and expected the activities to be more varied and engaging. Teachers' pronunciation and use of advanced language is another challenge stated by them. In addition, short lessons, distractions for students and classroom management problems are what made the process difficult. The last study analyzed, S7, included pre-service teachers in Communities of Practice (CoP) which led an opportunity for shaping professional identities since they both attended live classes to observe and even taught a few hours. They perceived the challenges of online teaching under five headings: classroom

management, lack of a dedicated space for learning, lack of interaction, distractions, and technological problems. However, putting forward some solutions to the observed issues is what made the study meaningful for those pre-service teachers.

Table 4. Positive/Beneficial aspects

S2	S3	S4	S6	S7
- the feasibility of the e-practicum, - pre-service teachers' ability to overcome technical problems with abundant online teaching experience, - the advantages of digital integration.	- they felt more comfortable in speaking during online lessons, - they observed how mentors solved the problems while teaching online, - they perceived if the level of the students is good, the online lesson flows smoothly, - many digital tools emerged due to COVID-19 and they started to learn creating an online content.	- by presenting CI through Kolb's experiential learning cycle via a collaborative virtual application, both the CIs and Google Docs-mediated activities offered student teachers real-life like experiences, - exchange of ideas made them aware of multiple perspectives and helped them develop shared understandings and a sense of learning community, - dealing with CIs led to improvements in participants' pedagogic content knowledge, - they felt more confident and proficient to come up with purposeful activities and relevant solutions.	-on EBA TV, teachers use body language effectively, - using realia during distance education is motivating and attractive, - including many activities (more than three) is a good way to reinforce learning.	- through forming an online CoP for practicum, pre-service teachers attended the live classes over video-conferencing tools, - opportunity to observe learner and teacher behaviors, - had a chance to teach a few hours throughout the term, - re-shaped professional identities, - gained better understanding of the challenges of online teaching, - presented practical tasks to address the challenges.

Table 5. Negative/Challenging aspects

S1	S3	S4	S5	S6	S7
- pre-service teachers expected more time and attention from the mentors, - expected supervisors to sustain continuous communication between coordinators and mentors, - expected supervisors to provide more online practice opportunities, especially on student engagement in online classes or virtual classroom management.	- some teachers lack the necessary digital literacy, - some parts of skipped due to time constraints, - controlling the students can be problematic, - graduation without experiencing the real classroom atmosphere.	- group size, - technical issues, - the scope of CIs	- doing only paperwork did not result in broadening pedagogical content knowledge and transferring it into practice, - lack of teaching experience, the opportunity to observe the classroom practices of mentor teachers, and the operation of schools, - lack of self-confidence in current teaching abilities, - lack of interaction between pre-service teachers and mentors, and also university supervisors.	- materials could have been more colorful and engaging for the students on EBA TV, - activities were not varied and appropriate to the learners' level, - pronunciation of the observed teacher was problematic, - teachers' use of advanced language items and structures could be demotivating and discouraging for the students, - 20 minutes is not enough to cover the topic and the tasks, - learners may be easily distracted due to distance education, -it may be difficult to manage the lesson and motivate the learners, - without teacher feedback, it becomes more challenging for learners to fulfill the learning goals.	- classroom management: off-task learners or communication breakdowns, - lack of a dedicated space for learning; not being in a classroom-like learning environment deprives teachers of the feedback that they receive by observing the learners' body language and participation rate of learners in class. - lack of interaction: learners were negatively influenced with regards to socio-emotional development, target language improvement, and motivation, - distractions: pupils had difficulty in focusing on English lessons since they were on computers and there were many distractors (online games, other communication applications, watching videos, external factors such as children, mothers, or siblings), - technological problems: lack of required hardware (computer, microphone, camera) and a stable internet connection, sharing a computer with siblings, teachers' digital illiteracy

Discussion and Conclusion

Online learning has been planned to be integrated into teacher education for the last two decades globally (Enochsson & Rizza, 2009; European Commission, 2007). Because as also highlighted by Darling-Hammond (2000), teacher education greatly contributes to teacher competencies including digital literacy skills. However, a recent report published by OECD (2015) declares that the policies and practices still have not been there yet to sustain good ICT pedagogies due to overestimation of teachers' and students' digital skills as well as poor quality of software and courseware. Teachers being a key agent in such a transformation, teacher education programs have a significant role in developing ICT competence to equip student teachers to meet the curriculum demands of public education. COVID-19 has played a crucial role in accelerating and achieving this necessity, if ever, due to a quick adoption and adaptation to online teaching in tertiary education

as well. Previously, it was already found that EFL student teachers were confident in their basic digital skills but lacked didactic ICT competence and heavily relied on their teacher educators as their role models in the Norwegian context (Røkenes & Krumsvik, 2016).

The present study reached similar conclusions in that EFL pre-service teachers heavily depended on their teacher educators during the pandemic era for practicum courses (S1, S2 and S6) particularly when the school placements were cancelled and exchanged with other practice and/or non-practice tasks like in S5 during Pandemic Phase 1. Likewise, studies conducted in different countries on online practicum applications during the pandemic display a variety of strategies to compensate for the face-to-face practicum. In Egypt, in Badawi's study (2021) instead of school visits, the micro-teaching practices of EFL pre-service teachers where student teachers were assigned to watch, analyze and reflect upon the previously recorded actual face-to-face classes are similar to S6's. Later, student teachers were to

imitate the video content and upload their own simulated videos to YouTube to receive feedback from their university supervisors on behalf of the real-time mentors whom they were never assigned the task with, since the real practicum procedures were cancelled by the university due to pandemic. Student teachers reported a discontent with the application since no real instructional skills such as classroom management and error correction strategies were employed in hypothetical simulations, which shows a great resemblance with S5 where school placement was never realized. Another similar approach was conducted in Greece where student teachers simulated their lesson plans on online platforms to their peers (Brinia & Psoni, 2021) as it is in S1 and S2. This simulation contributed to participants in experiencing a new teaching form and developing insights on potential problems.

Once the online practicum processes started during Pandemic Phase 2 and 3, pre-service teachers started to highlight the significance of participating online classes for either observation or practice teaching with critical evaluations (S3, S4, S6 and S7). As a result of this, gaining a new form of teaching and experiencing challenging opportunities to develop novel skills were reported as the positive outcomes. As it was applied in S3 and S7, and also in some other countries (USA, Indonesia, Chile and Portugal are a few examples), regular practicum norms were carried onto online platforms, where pre-service teachers continued teaching an actual class via Zoom, Google Classroom, and such applications, and they were assigned a mentor to collaborate with.

Researchers from each country highlight challenges that occurred and hindered participants' development. For example, Varela and Desiderio (2020) indicated a perception of unaccomplishment since the teacher candidates had been prepared for face-to-face teaching until the COVID-19 outbreak, which also negatively affected their job aspirations. Shinta and Aprilia (2020) confirm these challenges with a study of a group of Indonesian EFL pre-service teachers describing classroom management and assessment

as the most problematic areas. Assunção Flores and Gago (2020) emphasize the constraint of internet accessibility and its negative effects on pre-service teachers during the practicum. These studies show that both personal teaching competency and social development of student teachers have negatively been affected. However, participants in those studies stated that it provided an opportunity for adapting themselves to unexpected situations, fostered reflection about finding solutions to emerging specific problems that they had not been trained for. Reflective thinking and practice for self and others' teaching as was realized in S7 and S6, respectively, seems to be an opportunity for critically reviewing professional actions, beliefs and attitudes, which can be realized by using a variety of reflective tools (Tuncer & Özkan, 2021). Particularly on online platforms, reflective tools are the best for reflecting upon the performance which was believed that e-practicum provided such an opportunity to the pre-service EFL teachers in all the scoped studies except for S5.

Outcomes of the relevant literature are compatible with what was found in the scoped studies. Having both positive and negative perceptions about e-practicum, pre-service teachers also perceived e-mentoring a unique experience for their future career. Yet, a warning comes from Sepulveda-Escobar and Morrison (2020) in that without the right preparations for online practicum procedures, there might be detrimental side effects on student teachers' future professional motivation, for which S7 highlights the significance of socio-emotional well-being. Feeling isolated and staying in front of a screen for a long time with very limited access to others' *real* existence, socio-emotional competence and mindfulness have become important in surviving during the pandemic. Relevant literature on teacher well-beingness (Hadar et al., 2020; Li et al., 2020; Schonert-Reichl, 2017; Talidong & Toquero, 2020) necessitates teacher education programs to prioritize inclusion and improvement of the socio-emotional competence. As teaching itself being already a very stressful job, many scholars suggested alternative back-ups for dealing with

the problems emerged during pandemic (Gałazka, & Jarosz, 2021; MacIntyre et al., 2020; Matiz et al., 2020), which is another outcome of this study in that pre-service teachers' well-beingness should also be considered during online teaching.

For conclusions, this scoping review, though limited to only the COVID-19 pandemic, yielded beneficial outcomes in that the studies analyzed displayed various suggestions for further similar emergency times and/or *new normal* norms. They showed alternative practical pathways for the institutions to replace face-to-face procedures. For example, as it was implemented in S1 and S2, peer-to-peer teaching groups can be formed, which can be integrated with reflection-on-action and CI analyses as in S4 and S6. If possible, such schemes can be adopted with appropriate infrastructure and measures taken to sustain a fruitful learning experience for all parties as practiced in S7. Despite these outcomes, more studies need to be conducted to analyze online practicum communities. For achieving this, graduate and postgraduate studies are valuable windows of opportunities, and supervisors might lead their students to work on such issues. Another suggestion that might be deduced is to prioritize, integrate and facilitate socio-emotional competence into EFL teacher education curricula. Last but not least, a final suggestion would be extending what's learned from online practicum experience during pandemic and incorporate it into face-to-face and hybrid settings, where necessary and possible.

One important limitation of the study is caused by the chosen time period spent within the COVID-19 pandemic. As a result, very few studies were found to be used in the scoping review. On the other hand, such emerging studies are very valuable in that they are the pioneers and serve for the basis of the forthcoming practices and studies. Thus, this scoping review hopes to build a foundation and give valuable insights to the practitioners and researchers for improving the existing conditions in the field of EFL pre-service teaching practicum.

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Assessment of Antoni Gaudi's Design Approach on the Concept of Biophilia: Case of Casa Battlo

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Abstract

With the modernism movement, the diversification of design approaches has accelerated and, many methods focused on the solution of new problems have emerged. The design approaches, which move away from natural life and aim at the mechanical purposes of the function, have increased the longing of the people living in the cities for nature. In this sense, the biophilic design emerges as a new concept and aims to transfer nature to the building design in a direct and non-artificial way. The buildings of Antoni Gaudi, who had a design understanding far beyond his age, presented the reflections of nature in his unique ways. At this point, if Gaudi's approach to nature is questioned, his place in biophilic design, one of today's concepts, is a serious research topic. To what extent does the biophilic approach, which seeks to bring the new and modern together with nature, takes place in Gaudi's designs, which embody nature in a plastic and concrete sense. To what extent does the biophilic approach, which seeks to bring the new and modern together with nature, take place in Gaudi designs, which include nature in a plastic and concrete sense? The study aims to evaluate Casa Battlo, one of the Gaudi designs, through biophilic design criteria. For this purpose, biophilic design, Antoni Gaudi and his Works examined. The biophilic design criteria obtained because of the examination were used to evaluate Casa Battlo. Gaudi's Casa Battlo shows how the conceptually new term biophilia is at the core of this building. In this sense, the study shows how the conceptual essence of biophilia works like a spirit from the past that makes the structure permanent and unforgettable.

Key Words: Biophilic Design, Architecture, Gaudi, Casa Battlo, Design.

Öz

Modernizm akımı ile tasarım anlayışlarındaki çeşitlenme hızlanmıştır. Buna bağlı olarak ortaya çıkan problemlerin çözümüne odaklanan birçok yaklaşım türemiştir. Doğal yaşantıdan uzaklaşan, işlevin mekanik odağındaki tasarım yaklaşımları, kentlerde yaşayanların doğala olan özlemini arttırmıştır. Biyofilik tasarım bu anlamda yeni bir kavram olarak ortaya çıkarak yapı tasarımına doğanın direkt aktarımını hedeflemektedir. Çağın çok ötesinde bir tasarım anlayışına sahip olan Antoni Gaudi'nin yapıları doğanın yansımalarını kendine has yöntemlerle sunmaktadır. Bu noktada Gaudi'nin doğala olan yaklaşımı sorgulanırsa, günümüz kavramlarından biyofilik tasarımdaki yeri önemli bir araştırma konusudur. Doğayı plastik ve somut anlamda içine alan Gaudi tasarımlarında; yeni ve modern olanı doğayla buluşturmayı esas alan biyofilik yaklaşımın ne kadar ve ne biçimde yer aldığı çalışmanın konusunu oluşturmaktadır. Çalışma, Gaudi tasarımlarından Casa Battlo'nun biyofilik tasarım ölçütleri üzerinden değerlendirilmesini hedeflemektedir. Bu amaçla biyofilik tasarım, Antoni Gaudi ve Eserleri incelenmiştir. İnceleme sonucu elde edilen biyofilik tasarım kriterleri Casa Battlo'yu değerlendirmede kullanılmıştır. Çağın ilerisindeki anlayışı ile Gaudi'nin Casa Battlo'su, kavramsal olarak yeni bir terim olan biyofilik, seneler önce inşa edilmiş bu yapının özünde nasıl bulunduğunu göstermektedir. Bu anlamda çalışma, biyofilik kavramsal özünün geçmişten gelen ve yapının kalıcı ve unutulmaz olmasını sağlayan bir tin gibi nasıl işlediğini göstermektedir.

Anahtar Kelimeler: Biyofilik Tasarım, Mimarlık, Gaudi, Casa Battlo, Tasarım.

Introduction

Human, Nature and Design

Man is a being who is both a part of nature and cannot adapt to nature exactly. Although human belongs to nature, the need for protection and shelter from nature requires the built environment and its design. The word design is defined in three senses in the dictionary. Its first meaning is "the work of designing or the designed form, imagination." The second meaning is called 'plan' and 'project'. The third is "a copy of an object or event that has been perceived before, which is subsequently revealed in consciousness" (Parlatr et al., 1988, p.2143). Nature plays a central role for man when it comes to a new design (Antoniades, 1992, p.18).

Vitruvius supported this with the imitative and readiness to learn of ancient people, and the production of structures that started by imitating swallows' nests in nature (Vitruvius, 2005, p.27). In the following process, design has continued its development through the inspiration of people from each other. However, architectural historians and designers alike agree that design emerges from nature.

In this context, design approaches can be defined as mental production methods with many features that are very diversified due to their structure and come across with very different qualities. Considering the connection of man with nature, the definitions of the concept of design and their relationship with each other; It is clear that approaches based on nature for design have a wide place in the design literature.

As in all disciplines that require design, nature-based approaches have been frequently preferred throughout history and have continued to be used even though they have changed and transformed as a method.

Throughout history, civilizations have been inspired by nature while building their structures, and they have used this concept in their designs centuries before the term biophilia entered the literature. The remains in Göbeklitepe, the oldest known settlement, which is 12 thousand years old,

show that hunter-gatherer people lived in a scattered way before they settled down, but they gathered around the fire (which is a part of nature) in times of danger (Schmidt, 2010, p.241). Like the animal figures carved into the stones at Göbeklitepe, the Egyptian columns inspired by palm and lotus trees or the herbal ornaments of Greek temples are the oldest examples (Ramzy, 2015, p.259).

Ornaments were known as indirect imitations of nature and used used in architecture. For instance, Mycenaean palaces were decorated with marine motifs and Corinthian columns were carved to resemble leaves and floral patterns (Rian & Sassone, 2014, p.302).

When it comes to recent dates, the situation has not changed. While technological developments and the industrial age continued to progress rapidly in the 19th century, it is argued that architectural works still imitate old styles such as art nouveau, decorative movements and so on. Art nouveau and baroque styles feature abundant curvilinear lines, organic motifs and ornaments, with a passion for biodynamics. Advocates of new architectural principles have also recently advocated taking inspiration from natural shapes and processes (Gündüz, 2019, p.20).

The rapid progress of the industrial age in the recent past has damaged the nature and after a while, ecological design, green design, sustainable design, and similar approaches have emerged. Today, such as regenerative design, organic design, biomimicry, which have deeper ecological goals; Approaches that integrate human with nature and also away from harming nature have emerged (Gündüz, 2019, p.20). To summarize, when these approaches are examined and compared separately, it is seen that although there are design approaches that take nature as a model in architectural space design and production, there are different objectives and guides.

In short, design approaches throughout history have reflected the effects of nature brought by the period. Design approaches, shaped in various ways, have been used, sometimes to use nature analogically, and sometimes to ensure sustainability in terms of energy consumption.

Today, making people feel good through nature, with the historical interiority they bring, expresses the main approach of design spatially. It is necessary to explain in detail the biophilic design approach that assembles this meaning.

Biophilic Design

Biophilia, which means love of life, is semantically formed by the combination of the word's bio (related to life and living things) and philia (tendency or love for something). In this perspective, it was first used in the literature by the German sociopsychologist Erich Fromm in the late 1970s to express the love for life or living things (Şenozan, 2018, p.25). Fromm's book titled "The Source of Love and Violence" states, "In the field of life, an effect can only be achieved with life forces such as love and stimulation. Life can only be perceived in an individual, in a bird, in a flower, with individual examples" (Fromm, 1979, p.56). Wilson, an evolutionary theorist and biologist, defined this concept in a different descriptive way in 1984 as "man's innate tendency towards life and life-like processes" (Wilson, 1984, p.3).

Wilson expanded this concept and tried to express the bond of man to nature in a different way. In fact, it can be seen by a biologist trying to express a commitment or passion for the continuity of the species.

One of the examples that can be given for the continuity of the species is that adult mammals find baby mammals attractive. The facial features and body lines of young individuals and babies are described as more beautiful for the species. With this positive perspective, babies are protected more, and the continuity of the species is ensured (https://tr.wikipedia.org/wiki/Biyofili_hipotezi). With this aspect, this hypothesis also expresses Wilson's support for the continuity of the species and evolutionary theory.

Orr (2002) states in his book 'The Nature of Design' that spaces with vital 'things' are more harmonious for people. The fact that the spaces with trees, flowers, water, birds or sunlight from nature feel much better makes the biophilic design hypothesis meaningful in spatial structuring (Orr, 2002, p.16).

In a similar way in terms of environmental and vitality, this hypothesis suggests that people's love for natural life keeps them alive, as they feed their pets, grow plants, visit zoos, organize organizations with green and natural life, and even risk their own life to save an endangered creature. explains it in terms of retention (https://tr.wikipedia.org/wiki/Biyofili_hipotezi). This concept, in its general meaning, draws attention to the need for human interaction with natural elements.

In this sense, the need to explain the architectural approach and the concept of biophilia in the context of the spaces that make up the human environment is to underline the fact that humans will find the feeling of peace and security they need in nature itself (Bayraktaroğlu, 2013, p.46). The nature-based features of biophilia design include: locality, texture, balance and continuity (Bayraktaroğlu, 2013, p.47).

The article "Building Biophilia: Connecting People and Nature" published in 2001 by Heerwagen & Hase, who was the first to study biophilic design elements, spatially: a list of models such as broad-minded landscape, shelter, attraction, complexity and order, together with defining spatial environmental preferences, biophilic design started to define it (Ünlü, 2017, p.61). Although it was defined by many researchers in the following years, the most known and current content is the studies by Kellert and Wilson.

The concept of biophilia was carried to the discipline of architecture by Kellert in the sense of 'Biophilia Design'. Researchers incorporated their ideas about biophilia into architectural design with their work called 'Building for Life' and the concept of 'Biophilic Design' was defined by them; the elaboration of it was formed by another work of 2008 named 'Biophilic Design'.

Biophilic design is about creating a natural and biologically feel-good habitat for humans in the spatially built close environment. As with all living things, humans are also ecologically interconnected with nature, which is their immediate environment. people are not artificial; its connection to nature is biological and mental in its own structure. Biophilic design aims to meet the

inner harmony associated with nature in the built environment and spaces and to improve the physical and mental health of people (Kellert & Calabrese, 2015, p.21). Numerous scientific studies also support that (Figure 1).



MANY HOSPITAL ROOMS ARE DOMINATED BY TECHNOLOGY AND DEVOID OF ANY CONNECTION TO NATURE.



RESEARCH HAS INDICATED A VIEW OF NATURE CAN ENHANCE RECOVERY FROM ILLNESS AND SURGERY, AND REDUCE THE NEED FOR POTENT PAIN MEDICATION.

Figure 1. Hospital room sample- biophilic design (Kellert & Calabrese, 2015, p.4)

Architecturally, biophilic design has been discussed not only by Kellert but also by many researchers. However, the most up-to-date model of today's classifications and the intersection of common titles is used as the most reliable source

for biophilic design within the scope of the methodology that Kellert has developed and simplified over the years. Biophilic design concept consists of three phases (Figure 2).

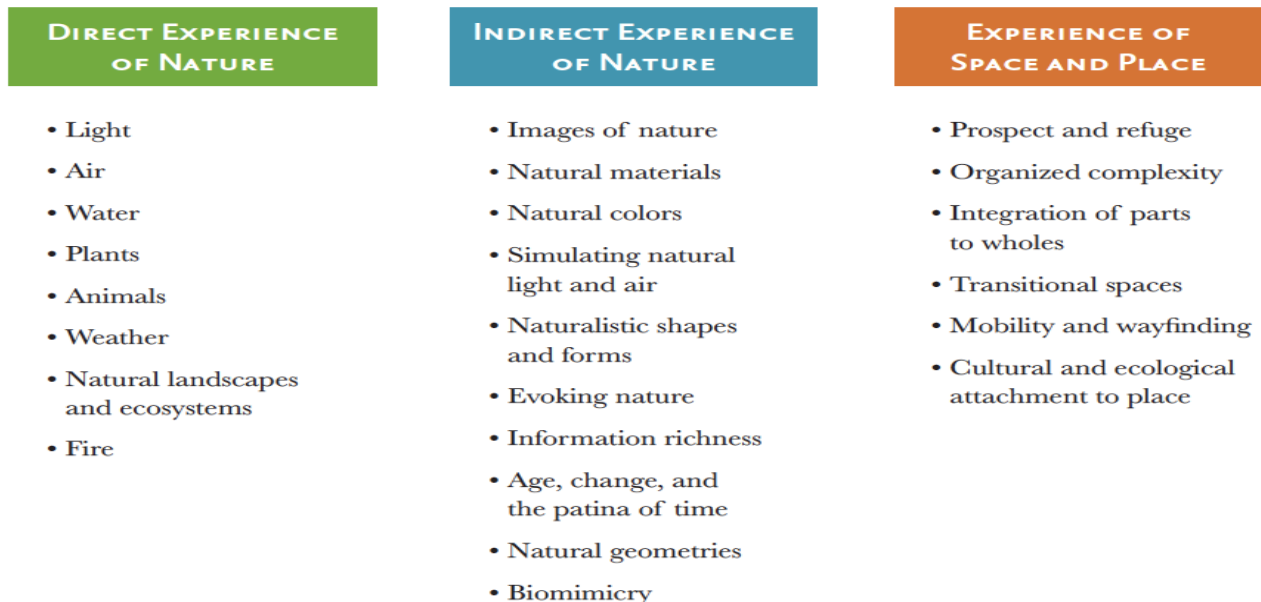


Figure 2. Three phases of biophilic design (Kellert & Calabrese, 2015, p.10)

To understand the Casa Batllo better, which will be examined within the scope of biophilic design,

it would be appropriate to examine the building's designer, the architect.

Antoni Gaudí i Cornet

The architect, known by his short name and full name Antoni Gaudí i Cornet, was born on June 25, 1852 in Reus, the capital of the Baix Camp region in the south of Catalonia. Gaudi's older sister Rosa, one of three siblings, lives modestly in the centre of Reus with her brother Francesca and her parents. Gaudi, who was an active entrepreneur at an early age, moved to Barcelona in 1868 with his brother, who was studying medicine, to complete secondary school (Dosde, 2016, p.20).



Figure 3. Antoni Gaudí i Cornet (36 years old) (Dosde, 2016, p.62)

After coming to Barcelona, Antoni Gaudi started the academy of sciences in 1869, but his transition to his main profession started with his entry to the faculty of architecture in 1873 (Yakın, 2016, p.12).

In 1875, he was successful in his exam with the door project he designed for a cemetery entrance and was awarded "the extraordinary jewellery" in his faculty. Afterwards, Gaudi's works, the atmosphere he created and felt in his drawings not only revealed the excitement in the field of

architecture, but also revealed his strong intelligence. Professors could not remain indifferent to this situation, and they were conflicted about whether he was a genius or a madman. Gaudi was influenced by the ideas of the French architect Eugene Viollet-le-Duc and the English thinker John Ruskin, who said that "ornamentation is the source of architecture". In time, it went beyond the dominant historical styles of the 19th century and created its own unclassifiable aesthetic. The styles that Gaudi began to be influenced in his student life developed him over time and formed the building blocks of his professional life (Yakın, 2016, p.13).

Gaudi was made a quick introduction to his profession and career, started to work with architects such as Josep Fontserè, Francisco de Paula del Villar and Joan Martorell. However, as his mother and brother were negatively affected by the death of his mother and brother in 1876, and a few years later, his sister's death, his progress in his profession slowed down for a certain period (Dosde, 2016, p.21).

In 1878 Gaudi graduated as an architect and set up his office on Calle del Call in Barcelona's old Jewish quarter. It was there that he began work on his first commissions, such as facilities for a cooperative association, some streetlights for Barcelona Plaza Real, and a showcase for the prestigious Comella glove shop. This last work caught the attention of powerful Barcelona industrial magnate Eusebi Güell i Bacigalupi, who would soon become the architect's main patron. Thanks to his involvement in Barcelona's most distinguished intellectual circles, Gaudi was able to take part in architectural projects that enabled him to leave his poor student years behind (Dosde, 2016, p.27).



Figure 4. Catalan architect Gaudi
(<https://www.dosde.com/discover/en/antoni-gaudis-biography/>)

Between 1896 and 1900, when the reflections of other styles were clearly seen, motifs and floral ornaments were at the forefront in the Neo Baroque style. Antoni Gaudi, who said, "We should not imitate or repeat Gothic, just continue it," created the first examples of this trend by using colorful surfaces, wavy forms, abundant decoration and organic motifs in his works with his unique style. Bent and curved striped patterns were used as ornamental elements throughout the buildings, which are considered as a synthesis of Gothic architecture and Catalan architecture.

With this image and line, he decides to design an unusual building for a customer who reaches him one day. He interpreted the Art nouveau style in his own way by making a fairy-tale expression in both its decorations and details. Thereupon, Casa Batlló was built on a street with adjoining buildings, attracting the attention of the whole world and hosting millions of tourists every year (Yakın, 2016, p. 16).

Although the simplification seen in his buildings and drawings in the following years was interpreted as the effect of modernism, Gaudi's nature-oriented design approach has never been lost.

Casa Battlo

Casa Battlo, one of Antoni Gaudi's best-known buildings, was designed as a residence. The major

share in the importance of this work, which is used as a museum, is not only the architect but also the brave owner who built this house.

In line with the request of the client Battlo family, Antoni Gaudi carried out the rehabilitation and facade reform of the building between 1904 and 1906. The architect carried out the facade reform with three main design elements. The first of these is the creation of a stone gallery with the columns left bare on the ground floor of the façade. The second is the continuation of these columns from the inside on the first floor and the continuation of columns and similar items with this bony structure in the other interior spaces. On this floor, the effect of the gallery on the lower floor has been increased by using glass on the façade. Third, the upper floor facades supported by metal balconies were created (Villanueva, 2020, p.119).

With these phases on the exterior, bones and skull image effects were created on the surface. These designs were not limited to the façade; With the demolition of the interior walls on the first floor, the lights were tried to be included in the interior spaces.

Due to the building's two façades and the need for light, large openings were created on the front façade, and a gallery overlooking the Passeig de Gràcia street was constructed thanks to the windows. Likewise, the windows on the rear façade extending to the ground and the large windows in the core let the sunlight in (Yakın, 2016, p.23). In addition, the space in the center of the plan was enlarged, allowing more daylight to enter (natural light was provided).

The majority of the façade is covered with broken mosaics and polychrome round ceramics, starting with a golden orange color and changing from aqua green to blue. This style is called Trencadís. Trencadís is the name given to the style of broken ceramic tile used in Catalan modernism. Technically and visually, it resembles French ceramic works called pique assiette. Trencadís is the name given to the composition that emerges by bringing together and detailing broken ceramic pieces, broken plates and dinnerware (Villanueva, 2020, p.119).

One of the most distinctive and impressive elements of the façade is that the form forming the roof is actually a dragon's ridge and the tower next to it is constructed as St George's sword. In addition, at the end of the sword, there is a four-armed cross covered with Majorcan ceramics, which symbolizes the holy family, and on it the Prophet. There are anagrams of Jesus, Mary and Joseph (Yakın, 2016, p.22).

The structure was named after one of the Catalan saints of the period, St. It describes the war between George and a dragon. Its tower in the form of a cone, stuck in the dragon's back, St. George's sword symbolizes Ascalon. The balustrades on the façade and the mouth forms on the hall façade symbolize the victims killed by the dragon and its own bones (Yakın, 2016, p.22).



Figure 5. Casa Battlo chimney (Yakın, 2016, p.20)

This building, which was redesigned and arranged by Gaudi (1904-1906), was used by the Batllo family and for many years, it was purchased in the 1990s and restored faithfully to the original (Moreno, 2019, p.102). Until then, no one thought that such a world heritage site would be built at 43 Passeig de Gràcia street. But Gaudi and his assistants (Domènec Sugrañes i Gras, Josep Canaleta and Joan Rubió) finished the Casa dels ossos (House of Bones) between 1904 and 1906, and years later made it a symbol of Barcelona and

almost a symbol of the Art Nouveau movement. Due to this reputation and original value, it expresses a passionate design approach to nature, Biophilia because it is one of the structures. Within the scope of the concept, the Casa Battlo structure is discussed (Moreno, 2019, p.102).

Method

In the study, 'biophilic design', which is examined within the scope of architecture, has a nature-oriented content. Although the design approach has entered the literature in the last decade; It is assumed in this study that it was used in previous designs. With this assumption; The study was created by analysing a dwelling design of a well-known architect. Antoni Gaudi's iconic Casa Battlo design is analysed in terms of biophilic design. In addition to the biophilic design principles, Semra Aydınlı's visual analysis methods in Architecture were also used in this study. The current state of Biophilic design elements is determined by literature research. To define it conceptually; The relationship between nature and humans is discussed within the framework of 'design'. Books, articles, theses and photographs were researched about the concept. Main titles related to the subject were indexed. Structure; was examined by obtaining information from observations and sources. The effects of biophilic design criteria in the Casa Battlo structure were analysed following spatial and visual examinations. The analyses are supported by the tables. In the tables using Kellert's (2015) biophilic design features; this building was examined for biophilic design features. With this method, the use of biophilic design in the building was determined. Descriptive analysis and document analysis methods are used from qualitative research methods.

Analysis of Casa Batllo In Terms Of Biophilic Design

Biophilic design concept has three phases. For this reason, the Casa Battlo structure is examined under three sub-headings in terms of biophilic design.

Direct experience of nature

Concept of biophilia and biophilic design is defined previous contexts. The first phase of Biophilic design which is named 'Direct Experience of Nature' consists of eight subtitles: Light, Air, Water, Plants, Animals Weather, natural ecosystems, fire.

First headline of direct experience of nature is light. Taking natural light and get sunlight is a necessity for human health. An important part of human life is spent in closed areas and buildings. Variable lighting technologies are used in that indoors. Nevertheless, the necessity of sunlight goes on.

Having natural light at indoors is fundamental to human health and wellbeing. Natural light can assume aesthetically appealing shapes and forms through the creative interplay of light and shadow, diffuse and variable light, and the integration of light with spatial properties (Kellert & Calabrese, 2015, p.12).

Gaudi should have thought that there was a great need for light because of the building had just two facades. So, he created large openings on both façades. However, it was not enough for him, so he expanded the skylight section. Thus, it provides natural light from the core of the building to the rooms, circulation areas and other spaces. The windows on both façades mostly expanded to go down to the ground.

Natural ventilation is important to human comfort and productivity. The experience of natural ventilation in the built environment can be enhanced by variations in airflow, temperature, humidity, and barometric pressure. These conditions can be achieved through access to the outside by such simple means as operable windows (Kellert & Calabrese, 2015, p.12). While designing that building, wide openings and windows were used not only on the facades, but also on the surfaces opening to the courtyards and in the stairwell. The use of natural lighting and ventilation will also support the purpose of biophilic design in terms of energy efficiency.

Water is essential to life and its positive experience in the built environment can relieve stress, promote satisfaction, and enhance health and performance. The attraction to water can be especially pronounced when associated with the multiple senses of sight, sound, touch, taste, and movement. Water in the built environment is often most pleasing when perceived as clean, in motion, and experienced through multiple senses (Kellert & Calabrese, 2015, p.13).

It is known that an ornamental pool was used in the open courtyard in the first design of the building. The use of a building as a museum and the presence of human circulation in this building reveal certain limitations regarding design. It is thought that this water pool was cancelled for these reasons in the regulations made about twenty years ago.

The presence of plants can reduce stress, contribute to physical health, improve comfort, and enhance performance and productivity. The application of single or isolated plants, however, rarely exerts much beneficial effect (Kellert & Calabrese, 2015, p.13).

In this building, which is used as a museum in its current state, it is seen that plants were used indoors in the old times when life continued. There are also plants in the courtyard.

An awareness and response to weather has been an essential feature of people's experience of nature throughout history, and critical to human fitness and survival. The perception of and contact with weather in the built environment can be both satisfying and stimulating. In biophilic Design views to the outside, operable windows, porches, decks, balconies, colonnades, pavilions, gardens, and more are necessities (Kellert & Calabrese, 2015, p.13). An outdoor experience can be enjoyed in the organically shaped terrace area. Apart from this, the use of many windows and openings in the building provides air circulation.

Natural landscapes and ecosystems consist of interconnected plants, animals, water, soils, rocks, and geological forms. Also, the experience of fire can be both a source of comfort and anxiety (Kellert & Calabrese, 2015, p.14). In this design, a fireplace is created. Not only was a fireplace created, but a

seating area was created in order to feel the warmth of the fireplace in a semi-closed area.














	DIRECT EXPERIENCE OF NATURE			
Light	 11	 12	 13	<p>-Large openings in windows and spaces. - Light is brought in through the windows created in the attic. Creating shadow plays creates an essential effect in terms of biophilic design. - With the skylight, natural light is taken from the roof and transmitted to the ground.</p>
	 14	 15		
Air	 12	 16		Windows are often used on the facades and inner courtyards.
Water				Although the building is not in its current state, it is known that there was a water pool in the open area in its first design.
Plants	 17	 18	 19	In the building, which is used as a museum today, it is seen that plants are used indoors during the active life. In addition, plants were placed in the open
Animals				
Weather	 20			It provides the opportunity to be outdoors in the centre of the city with its roof terrace.
Natural landscapes and ecosystems	 21			The organically shaped structures on the terrace offer a natural environment experience in the open air.
Fire	 5			The fire was taken directly into the interior with fireplaces.

Figure 6. Direct experience of Nature

Indirect experience of nature

The second phase of Biophilic design which is named 'Indirect Experience of Nature' consists of ten subtitles: Images of nature, natural materials, natural colors, simulating natural light and air, naturalistic forms, evoking nature, information richness, patina of time, natural geometries, biomimicry.

The image and representation of nature in the built environment (plants, animals, landscapes etc.) can occur by photographs, paintings, sculpture, murals (Kellert & Calabrese, 2015, p.15). Gaudi used nature images and forms in a significant part of the building elements of the house he designed. For example, the end of chimney on the roof is in the form of a flower, the columns in the first floor are in the form of branches and leaves, and the roof surface is in the form of a dragon's back. They are just some of the representations of nature in that dwelling's design.

A stage of biophilic design is using natural materials. Stone, wood, cotton, leather, marble can be used in a wide array of products, furnishings, and other interior and exterior areas. When Casa Battlo was designed, natural materials were used on all surfaces. At the same time indoor equipment, furnitures are made from wood, stone and similar materials which found in nature.

The effective biophilic application of color should generally favor muted "earth" tones characteristic of soil, rock, and plants. The use of bright colors should be cautiously applied,

and emphasize such appealing environmental forms as flowers, sunsets and sunup's, rainbows, and certain plants and animals. Contrasting and pretentious colors should be avoided in natural designs (Kellert & Calabrese, 2015, p.15).

The colors used in Casa Battlo cover the natural design so much that it is not possible to find a painting other than the material itself. wood and stone materials color the building with their natural color. Ceramic pieces on the façade and roof were used only from the colors of nature. Colors such as blue in the inner courtyard, nature scenery on the roof, and brown tones around the fireplace were preferred. Ceramics were applied

from colors found in nature and other materials were used bare without being colored. It is seen that very bright and eye-catching colors are not preferred.

Artificial light can be designed to simulate the spectral and vibrant qualities of natural light in biophilic design (Kellert & Calabrese, 2015, p.16). In this sense, the use of yellow lighting instead of white light can be given as an example in the non-illuminated sections of the building.

In line with this approach, which expresses the love for nature; forms and shapes of natural world may be charming. Natural forms were used throughout the building, including the ceilings. tree trunk or leaf forms were used in the columns. There are organic forms all over the building. It is not possible to find such a flat and inorganic form as drawn with a ruler.

The satisfying experience of nature can also be revealed through imaginative and fantastic depictions. These representations may not literally occur in nature, but still draw from design principles prominently encountered in the natural world.

At the same time the diversity and variability of the natural world is so pronounced, it has been described as the most information-rich environment people will ever encounter. Whether natural or built, people tend to respond positively to information-rich and diverse environments that present a wealth of options and opportunities, so long as the complexity is experienced in a coherent and legible way (Kellert & Calabrese, 2015, p.16).

The building depicts the battle of a Catalan saint and a dragon. Its tower in the shape of a cone, stuck in the soldier's back, St. George's sword, Ascalon. The balustrades on the façade and the mouth forms on the hall façade symbolize the victims of the war and their own bones. By that description of building, it can be said that evoking nature and information richness parts of biophilic design is used exactly.

Change and a patina of time can be achieved through such design strategies as naturally aging materials, weathering, a sense of the passage of time, and in other ways (Kellert & Calabrese, 2015, p.17).

Since the building was renovated about 20 years ago, there is no trace of obsolescence in the building. It is not a very preferred situation due to its use as a museum.

Using Natural geometries in biophilic design refer to mathematical properties commonly encountered in nature (Kellert & Calabrese, 2015, p.18). Many similar features were observed in this structure as well. One of the most obvious

examples of this in house is the application of these mathematical geometries in ceiling layouts.

Biomimicry refers to forms and functions found in nature, especially among other species, whose properties have been adopted or suggest solutions to human needs and problems. (Kellert & Calabrese, 2015, p.18) The use of the thick leather surface form on the roof is one of the examples of this structure.

INDIRECT EXPERIENCE OF NATURE

<p>Images of nature</p>		<p>Natural forms appear on the structure in various ways.</p>
<p>Natural materials</p>		<p>Natural materials have been used not only in architecture but also in interior furnishings.</p>
<p>Natural colors</p>		<p>The colors of natural materials are used as they are.</p>
<p>Simulating natural light and air</p>		<p>Daylight effect is aimed by using yellow lighting instead of white light in non-illuminated sections.</p>
<p>Naturalistic shapes and forms</p>		<p>Natural forms were used throughout the building, including the ceilings. It is not possible to find a flat and inorganic form as drawn with a ruler.</p>
<p>Evoking nature</p>		<p>Bone-shaped columns and bud-shaped chimneys evoke nature.</p>
<p>Information richness</p>		<p>Interiors with different forms and textures. In particular, this structure, together with the interior furnishings and furniture, provides an interior experience that creates a great variety.</p>
<p>Age, change, and patina of time</p>		<p>Although it is an old building, it is in good condition with restorations.</p>
<p>Natural geometrics</p>		<p>Forms coming from nature are geometricized.</p>

Figure 7. Indirect experience of Nature

Concept of biophilia and biophilic design is defined previous contexts. The first phase of Biophilic design which is named 'Direct Experience of Nature' consists of eight subtitles: Light, Air, Water, Plants, Animals Weather, natural ecosystems, fire.





ANALOGIES		
Skull		Skull-like balconies
Bat		Bat-shaped facades
Reptile Skin		Reptile skin ceramics
Bones		Bone-like columns

Figure 8. Analogies

There are some elements mixed with biomimicry in Gaudi's unique architectural understanding. Some forms that the architect takes from nature can cause analogical evaluations of the building. In this sense, analogical approaches are not related to biomimicry because they remain at the plastic level.

Experience of Space and Place

Humans evolved in adaptive response to the complementary benefits of prospect and refuge. Prospect refers to long views of surrounding settings that allow people to perceive both

opportunities and dangers, while refuge provides sites of safety and security. biophilic outcome can be achieved through such design strategies as vistas to the outside, visual connections between interior spaces, and the occurrence of secure and sheltered settings (Kellert & Calabrese, 2015, p.19).

Creating small balconies connecting the indoor and outdoor spaces, designing courtyards where you can spend time outdoors, and using the roof as a terrace overlooking the environment can be defined as the prospect and refuge subheading of biophilic design for Casa Battlo.

Complex spaces tend to be variable and diverse, while organized ones possess attributes of

connection and coherence (Kellert & Calabrese, 2015, p.19). Plan of the dwelling doesn't have a standard geometric shape. The rooms were created in a more complex way instead of being created with a sequential form. However, the fluency and luminosity of the circulation spaces and the stairs creates an order of its own within the complexity of this structure.

integration of space can be improved by a central focal point that arises either functionally or thematically (Kellert & Calabrese, 2015, p.20). space integrations are seen in many buildings. However, the creation of spaces within the space in this structure also constitutes other different design aspects.

For example, a sitting area is designed for the fireplace, again at the foot of the fireplace in the room.

Successfully navigating a building often depends on clearly understood connections between rooms facilitated by clear and discernible transitions. (Kellert & Calabrese, 2015, p.20). Corridors connecting different spaces to each other also look like the same in all rooms and interiors.

People's comfort and wellbeing often relies on freely moving between diverse and often complicated spaces. pathways and points of entry and egress are especially critical to fostering mobility and feelings of protection (Kellert & Calabrese, 2015, p.20). In this structure, the width and spaciousness of the circulation areas facilitate the transitions between the spaces. In addition, planning the entrance area too big and bright compared to a house of this size provides confidence and comfort in terms of first impression.

EXPERIENCE OF SPACE AND PLACE







<p>Prospect and refuge</p>		<p>Indoor and outdoor connection is provided by balconies.</p>
<p>Organised complexity</p>		<p>The complexity based on parts serves the whole of the structure.</p>
<p>Integration of parts to wholes</p>		<p>Creating space within space. Providing spatial usage diversity in the same interior</p>
<p>Transitional spaces</p>		<p>Corridors connect interiors to different spaces with similar structures. The entrance area gives a detailed idea about the building.</p>
<p>Mobility and wayfinding</p>		<p>Diversity in design plays an active role in directing circulation.</p>
<p>Evoking nature</p>		<p>The form of the building, the historical story told in the writings on the chimney, the national romance and the loyalty to that culture and region.</p>

Figure 9. Experience of Space and Place

An empathy for familiar places reflects this territorial feeling that can be enhanced by both cultural and ecological means. Culturally relevant designs promote a connection to place and the sense that a setting has a distinct human identity. (Kellert & Calabrese, 2015, p.20). The choice of local materials in Casa Battlo and the fluent expression of a story (legend of Catalan Saint George and dragon) on the interior and exterior spaces and facades of the building clearly express the cultural and ecological connection of the building to its location. Cultural and ecological connections to buildings often stimulate people to conserve built environments.

Discussion and Conclusions

Mankind builds artificial environments for himself and still cannot break from nature. Although technology and industry develop; The effort to return to nature and ecological continues. Especially in the last century, the effort to return nature has revealed nature and ecology-focused design approaches. Although these approaches belong to the last century, they are a clear indication of the human's belonging to nature. Biophilic design has also recently been defined as one of the approaches that express human commitment to nature. The nature-oriented design approach is one of the design efforts of man since its existence. With this framework, the 'Casa Battlo' dwelling, which is one of the important cultural heritage and historical artifacts has been analysed and evaluated within the scope of the biophilic design approach. In the results obtained from spatial and visual analysis; It can be stated that the Casa Battlo structure has been created within the newly defined biophilic design approach. The designer of the building has a work beyond his time. A painter, architect or artist works in line with the currents up to his time. Or he creates a new trend by being influenced examples in history. This building has not been evaluated with the design concepts of the designer's own period, but within the framework of a design approach expressed approximately two centuries later. In

this context, it can be stated that Gaudi made original works beyond his time.

Although he was involved movements such as art nouveau, modernism, it is possible to state that he has a valid design even for a design approach that emerged two centuries later. It seems that he is the architect of every era. Since the biophilic approach is today's concept, exemplary buildings are considered to be modern architectural buildings. Although the concept is new; It is seen that examples can be taken from the past. In other words, it may be possible to take not only modern biophilic designs but also historical buildings as examples for biophilic architectural design approach.

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The Relationship of Information Management and Organizational Agility: An Application on the Banking Sector

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Abstract

The purpose of this research is to examine the relationship between information technology capability and organizational agility on the banking sector, which needs to adapt to environmental changes in the fastest way. The descriptive method was adopted in the research. The population of this research is all banking sector employees. A total of 170 banking sector employees participated in the research. Within the scope of the research, Organizational Agility Scale developed by Sharifi and Zhang (1999) and Knowledge Management Performance scale, which was brought to the literature by Lee, Lee and Kang (2004) but redeveloped by Çetinkaya (2011), were used. The obtained data were analyzed via SPSS. According to the analysis results, the dimension with the highest average among the sub-dimensions of the organizational agility scale was the "competency" dimension. "Responsiveness" is the sub-dimension with the lowest average. In the knowledge management scale, the sub-dimension with the highest average is "knowledge production"; the sub-dimension with the lowest average was "information sharing". The results of the regression analysis showed that the "knowledge sharing" sub-dimension of the knowledge management scale was over the "flexibility" sub-dimension and the "competency" sub-dimension of the organizational agility scale; on the "speed" sub-dimension of the organizational agility scale of the "information gathering" sub-dimension of the knowledge management scale and; Finally, the "knowledge production" sub-dimension has a statistically significant and positive effect on the organizational agility scale's "response" sub-dimension.

Key Words: Information, Information Management, Agility, Organizational Agility.

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Öz

Bu araştırmanın amacı; bilgi teknolojileri yeteneği ve örgütsel çeviklik arasındaki ilişkiyi, çevresel değişikliklere en hızlı şekilde adaptasyonu gereken bankacılık sektörü üzerinde incelemektir. Araştırmada betimsel yöntem benimsenmiştir. Bu doğrultuda; araştırmanın evreni bankacılık sektörü çalışanlarının tamamıdır. Araştırmaya toplam 170 banka sektörü çalışanı katılmıştır. Araştırma kapsamında Sharifi ve Zhang (1999) tarafından geliştirilen Örgütsel Çeviklik Ölçeği ve Lee, Lee ve Kang (2004) tarafından yazına kazandırılan ve Çetinkaya (2011) tarafından yeniden geliştirilen Bilgi Yönetimi Performansı ölçeği kullanılmıştır. Elde edilen veriler SPSS aracılığıyla analiz edilmiştir. Analiz sonuçlarına göre, örgütsel çeviklik ölçeği alt boyutları arasında en yüksek ortalamaya sahip olan boyut "yetkinlik" boyutudur. "Cevap verme" ise en düşük ortalamaya sahip alt boyut olarak belirlenmiştir. Bilgi yönetimi ölçeğinde ise en yüksek ortalamaya sahip olan alt boyut "bilgi üretimi"; en düşük ortalamaya sahip olan alt boyut ise "bilgi paylaşımı" olmuştur. Regresyon analizi sonuçlarına göre bilgi yönetimi ölçeği "bilgi paylaşımı" alt boyutunun örgütsel çeviklik ölçeği "esneklik" alt boyutu ve "yetkinlik" alt boyutu üzerinde; bilgi yönetimi ölçeği "bilgi toplama" alt boyutunun örgütsel çeviklik ölçeği "hız" alt boyutu üzerinde ve son olarak "bilgi üretimi" alt boyutunun örgütsel çeviklik ölçeği "cevap verme" alt boyutu üzerinde istatistiksel olarak anlamlı ve pozitif yönlü bir etkisi bulunmaktadır.

Anahtar Kelimeler: Bilgi, Bilgi Yönetimi, Çeviklik, Örgütsel Çeviklik.

Introduction

Today, where the ability to adapt to change is almost mandatory, businesses are also constantly changing and transforming. It can be seen that companies that were pioneers in their field, in the previous periods were left behind by not being able to adapt to increasingly different conditions and not being able to compete with their competitors. It is more difficult for those who are in a leading position in technology companies to maintain their positions, and it seems possible that they will not be able to maintain this position in the future and perhaps may be deleted from the sector (Akkaya and Tabak, 2018, p. 186).

As recent examples; brands that were leaders in the mobile phone market in the past, such as Nokia and Ericsson, or companies that were pioneers in the photography market, such as Kodak, are far from other competitors such as Samsung, which cares about innovation today. These companies have lost their former positions as they could not supply in line with the demands and trends. When Apple and Samsung made phones smart and multifunctional tools, Ericsson and Nokia instead of adapting to innovations in this market; they predicted that push-button phones would continue to exist in the market and as a result lost their market share. A similar example applies to GPS (Global Positioning Systems) manufacturers. Highway maps, which have developed since the 90's, started to be offered to the navigation market, then to the GPS and then to the customers free of charge, with smartphone applications, and thus, the independent GPS device manufacturers lost their market value by 85% in a period of 18 months (Downes and Nunes, 2014, p. 82).

In today's conditions, it is considered impossible for companies that cannot be involved in innovations with agility and cannot act in accordance with consumer demands. In terms of the continuity of its position in the market share and its competitiveness, an enterprise must produce appropriate solutions by taking into account the developments taking place inside and outside, and the new demands.

The concept of organizational agility, in other words, organizational agility gains great

importance today (Ganguly, Nilchiani and Farr, 2009, p. 411). It is equally important to examine the concept of agility in the new competitive environment.

Organizational Agility

The concept of agility is a concept that creates a field of study in many subjects such as leadership, information technology and production. The concept of agility has also played a role in the derivation of concepts such as agile institution, agile system, agile business processes. The dictionary meaning of the word agility is stated as "the ability to think quickly and agile and at the same time wisely" (Basri and Zorlu, 2020, p. 148). It is possible with agility for businesses to take advantage of these opportunities by making a quick and pioneering evaluation of opportunities. Noticing the changes and developments that occur within or outside of the environment and creating solutions against these situations is seen as organizational agility (Doğan and Baloğlu, 2018, p. 102). In addition, the ability to quickly respond to different situations and turn these changes into opportunities is also described as agility (Braunscheidel and Suresh, 2009, p. 120).

The concept of organizational agility is expressed as agile production that occurs as a result of changes in an institution or sector and turning these changes into opportunities (Braunscheidel and Suresh, 2009, p. 120). On the other hand, Gunasekaran (1999) explains the concept of organizational agility as the ability to configure the resources, capabilities and strategies of the enterprises in the most effective and efficient way in order to quickly perceive and respond to the changes in the internal and external environment of the enterprises. This concept is also defined as the ability of a company to restructure, combine and create benefits to recognize sudden changes, dangers or opportunities in its environment and to respond quickly to them (Yang and Liu, 2012, p. 1024).

Goldman, Nagel and Preiss (1995) explain this concept as managing competition by following continuous and unpredictable developments and turning consumers' behaviors into their own

advantages. In summary, the concept of organizational agility can be defined as the ability of businesses to be sensitive to changes in their environment, to gain competitive advantage in the market against competitors with new technologies, to quickly meet their demands and requests by positioning their customers in the center, and to increase the motivation and commitment levels of their employees (İnanır, 2020, p. 75).

Characteristics of Agile Organizations

For an organization to be agile, it is necessary to see a development or change early, evaluate and apply the data about it quickly and without error (İleri and Soylu, 2010, p. 14). In other words, speed and flexibility are important in agile organizations.

The quick completion of a task and the ability to adapt to changes in the environment are also the result of agility. As a result, being agile means doing a job both quickly and flexibly (Sekman and Utku, 2009, p. 22). Quickness (being speed) means that businesses are fast while carrying out their activities, catching opportunities, keeping up with change and solving the problems encountered. For example, quick resolution of customer complaints, fast fulfillment of orders or quick approval from the manager for a purchase are all related to speed.

The ability to understand the developments and changes of the market and to adapt quickly to new situations is also explained as flexibility. For example, responding to the rapid change in market conditions at the same speed and providing the product requested by the customer quickly is a flexibility capability (Sekman and Utku, 2009, p. 22).

To be agile, a business can cooperate with the companies it competes with and may have to use other external resources (Dereli and Filiz, 2002, p. 143). Thus, planning and strategy become more important; developing and updated strategies make the company more dynamic. If a business has the goal of being agile in a competitive environment, it should be agile in more than one area instead of just a single business function (Wendler, 2016, p. 21). In this sense, organizational agility supports change in all processes (Armstrong, 2000, p. 576). Over time, the concept of organizational agility becomes a fixed part of

organizational culture for businesses and provides an advantage to organizations (Karadal and Duman, 2020, p. 3).

Dimensions of Organizational Agility

There are four dimensions in organizational agility: "speed, flexibility, responsiveness and competency" (Zhang and Sharifi, 2000, p. 498). The ability of the organization to perform a task in the shortest possible time and without error refers to "speed". Sherehiy (2008) also explains this dimension with the ability to learn quickly.

The dimension of "responsiveness" explains the ability of businesses to notice and comprehend the developments in the environment, to predict, to respond reactively or proactively to them, and to adapt to change (İnanır, 2020, p. 74). This dimension is seen as the ability of enterprises to respond to the changes caused by national or international policies in the field of marketing, to changes in production models and competition criteria and to create more economical options due to technological developments (Zhang and Sharifi, 2000, p. 499). As an organization responds rapidly to changes in the environment, this capability is increasing. Determining a strategic vision, the ability to transfer innovations to the organizational culture can be counted among the ability to responsiveness.

"Flexibility" dimension is defined as the ability to regulate the structure, culture and ways of doing business of the enterprise against the developments that occur around it (Reed and Blunsdon, 1998, p. 459). Numerical, functional and financial flexibility are among the most used classifications of organizational flexibility in the literature. Numerical flexibility refers to the change in demands and outputs according to the number of employees and working hours of an enterprise; this change can result in positive results with the implementation of short-term and part-time flexible working styles in the enterprise. Financial flexibility relates to performance-oriented payment methods, profit-sharing planning and individual payments. Functional flexibility is defined as the flexibility of the job content and the flexibility of the change in the skills

of the employees (Sherehiy, Karwowski and Layer, 2007, p. 446).

"Competency" dimension is defined as the ability to be competent. Issues such as working to ensure product and service quality, price policy, creating an appropriate technological infrastructure, qualification of personnel in terms of skills and knowledge and laying the groundwork for their development are evaluated within the scope of competency dimension (Zhang and Sharifi, 2000, p. 499).

Agile organizations have many advantages from advanced technology, restructuring, personnel training, opportunities, economic, social and cultural changes to sustainable competition (Sherehiy, 2008, p. 43). The concept of organizational agility, which is defined as the level of the ability to act quickly as an organization, contributes to living in uncertainty and has significant effects on performance (Sağır and Gönülölmez, 2019, p. 59).

In a report published by McKinsey in 2006, it is stated that increased agility in businesses means improved business processes, satisfied customers, employees with high job satisfaction, and therefore higher income (Karadal and Duman, 2020, p. 12).

Information

As a result of the research by Kuçuradi (1995), in which "information" and the object of information were examined, it is seen that the word "information" in some languages defines both the task of knowing and the outputs that result from this work. Kuçuradi (1995) draws attention to the fact that information, which is an activity specific to humans, includes multiple activities that are related to each other such as perception, understanding, thinking, interpretation, explanation, comparison, verification and evaluation.

As a concept information forms the basis of data and knowledge. It can easily be said that the definition of this concept, which is still popular today, has been sought and discussed since history. Çüçen (2001) stated that ancient Greek philosophers were working to make an explanation about information. In modern

philosophy, epistemology (the theory of information) has become the main subject of philosophy and the possibilities, sources, dimensions, criteria and features of human knowledge have been examined in terms of epistemology. Philosophy of information, which generally examines what information is, where and how it emerges, investigates the connection between the knowing subject and the known object (Çüçen, 2001, p. 12).

Especially in Turkish sources, it is seen that both knowledge and information concepts are examined and explained only under the title of information concept. However, although knowledge and information are concepts that are directly related to each other, it is stated that they describe different concepts and point to different phenomena. Davenport and Prusak (2001) also state that these concepts are different from each other. According to them, information is not synonymous with data and knowledge. In this direction, the concept of knowledge has been discussed and defined from many different perspectives in the literature.

Barutçugil (2002) states that information is personalized knowledge that helps people to grasp the events taking place fully and accurately around them. According to Barutçugil (2002), facts such as thought, feeling, idea, foresight, experience and practice constitute information. Celep and Çetin (2003) emphasized the importance of treating information differently from the concepts of data and knowledge. It has been stated that the data are raw facts and when transferred, corrected and summarized, they gain value and turn into information (Celep and Çetin, 2003, p. 82). According to Davenport and Prusak (2001), information means a flexible combination of experience, value, goal-oriented information and expert opinion in a certain order, which puts a limit on the evaluation by combining new experience and knowledge.

It is stated that information manifests itself in the minds of those who know and is put into practice and in businesses, it usually emerges in daily activities, processes, practices and norms. Davenport and Prusak (2001) stated that information is not simple and emerges with the

interaction of different phenomena with each other. Shapeless information is flexible and difficult to understand using words or logical terms when it comes to intuition. Within the framework of these data, the concept of information can be evaluated both as a process and as an accumulation.

Information Management

The two most important concepts in terms of management science are information and technology (Özer, 2013, p. 70). Information has a great value in businesses, at least as much as capital. For this reason, the age we live in today is the information age, the society is the information society and people are described as information workers (Atlı, 2014, p. 23).

Valuing information, knowing how to use information and being able to produce it are among the most important features to be considered in an information society. And all these are realized through information technologies (Güçlü and Sotirofski, 2006, p. 353). Information management is a well-established discipline in both business and academic fields, as information is a power and an important resource on its own (Xie, Fang, Zeng and Huo, 2016, p. 1617).

Today, information is an easily accessible value depending on technology. However, it is a very difficult value in terms of protection. The information age, on the other hand, has gradually given rise to information competition, and this has affected not only societies but also businesses. Now, information has become an important production factor for businesses as much as capital and information management has also begun to be seen as a mental capital that can be controlled in the management of the enterprise (Selvi, 2012, p. 11). The clearest definition of information management is as follows: "To make the right decision, it is necessary to provide the right information in the right form, to the right person, at the right cost, at the right time, in the right place" (Tonta, 2004, p. 3).

Information management, defined by the American Center for Production and Quality, is characterized as systematic approaches to ensure that information reaches the right person at the

right time to create a value (Buckman, 2004, p. 12). Liao and Wu (2010), on the other hand, while describing information management, mention three main processes as access to information, transformation of information and application of information. The process that covers the identification and analysis of the information required for the realization of organizational goals, and the planning and control of activities that develop information is called information management (İpçioğlu and Erdoğan, 2005, p. 91).

In another definition, information management is stated as a system that includes the stages of obtaining, processing, organizing and reusing recorded information (Kutvan and Savaş, 2011, p. 4). According to Barutçugil (2002), the management of information requires learning and sharing both individually and organizationally. According to Tonta (2004), the concept of information management is the practice of providing, controlling, publishing and using information about the effective operation and management of each entity. The concept of information is also used in the form of information generated inside or outside the organization, such as production data, personnel files, market research data (Tonta, 2004, p.3).

Application of Information Management in Organizations

Generating information is among the objectives of each organization. However, this can be considered as a very difficult task for organizations (Celep and Çetin, 2003, p.18). Information is a concept that has a very important effect on the capacity and effectiveness of organizations and is a prerequisite for technological production, which is necessary for the adaptation of organizations to innovations (Sawhney, 2001, p.260).

Amin and Cohendet (2004) divided information into five categories according to the learning method in the organization. This classification is explained below:

- Intelligent information: It consists of the talents of the employees and describes the learning potential.
- Embedded information: It represents practical thinking and learning by doing.

This knowledge plays a role in the performances of experts and in training.

- Cultural information: It takes place in socialization processes, sharing, language and stories told in the organization.
- Established information: It is used in routine processes and technologies.
- Coded information: It is hidden in signs and symbols and is shown in books and manuals.

Information is not a once formed and fixed concept. Information can evolve in information production environments provided within the organization, or it can disappear when a job is concluded and not repeated. Again, information can be personalized by the person who revealed it and stored in data or processes for later use (Bell, 2001, p. 43).

The most important point in the success of organizations in the information economy is that organizations can add value that will raise themselves to higher levels each time (Barutçugil, 2002, p. 54). Organizations need to follow and implement some important stages in order to realize information management (Güçlü and Sotirofski, 2006, p. 352). The first of these stages is the creation of an information vision, considering the information capacities of employees and customers, and the preparation of an information management program in this direction. At this stage, it is very important to associate the information management program with the goals and objectives of the organization (Buckman, 2004, p. 22). The second stage is the creation of an information manager and a team responsible for the information management process (Awad and Ghaziri, 2004, p. 55). The next stage covers the control of accounts related to information assets. At this stage, there are points such as identifying the most important information, identifying the best practices in the sector, and identifying new research and development areas (Barutçugil, 2002, p. 55). After this step, standards, processes, responsibilities and technologies for the new information management structure should be determined (Öğüt, 2001, p. 121). As the last stage, the formation and continuity of organizational

culture suitable for information management takes place (Tiwana, 2000, p. 54).

Corporate Information Management Process

Corporate information management is expressed as controlling all registered and unregistered information that occurs within the enterprise or obtained from outside, depending on a system (Barutçugil, 2002, p. 60). Information management is not just an information technology issue. Information management for businesses is an organizational culture issue. It is necessary to have a cultural structure that gives importance and value to information, appreciates information workers, believes that information grows as it is shared, and rewards those who use information effectively (Barutçugil, 2002, p. 62).

Especially in recent years, businesses have begun to realize the necessity of managing intangible or unregistered corporate information as well as the management of registered information (Odabaş, 2003, p. 358). In this direction, creating new information is not only about processing objective information mechanically, but also based on making use of employees' implicit and subjective insights, intuitions and ideals (Nonaka, 1999, p. 40). For businesses information management, besides being one of the necessary elements in order not to be left behind in the increasing global competition environment, has also become very critical to prevent unnecessary information production.

Having the right information at the right time is one of the important factors for businesses to increase their performance. However today, the amount of information obtained from both inside and outside of the enterprises has increased considerably, and as a result, managers are exposed to more information than necessary. The main problem here is that the information required for businesses cannot be separated from other information (Kalseth and Cummings, 2002, p. 165).

Information management process consists of a wide variety of elements to ensure the continuity of corporate activities. Information technologies, which take an active role in corporate communication and their effective use, are the

most important among these elements. Through various software and factors such as wireless communication, it is possible for all employees to manage all the information of the enterprise on a single system (Barutçugil, 2002, p. 64).

Methodology

In this study, the descriptive method, whose purpose is to reveal the current state of the phenomenon to be investigated, was used. The universe of the research is all banking sector employees working in Turkey. A total of 186.654 people work in deposit banks and development and investment banks in Turkey. Since this number was quite high for research, a sample was used. For sample calculation, the sample calculation tool available on the internet was used. This calculation tool can be accessed from the following link: <https://www.calculator.net/sample-size-calculator.html>. When the calculations were made with 95 percent reliability and 5 percent margin of error, the number of samples to be examined within the scope of the research was determined as 383. In this context, 383 scale forms were sent to bank employees via e-mail.

Banking sector employees were identified through the LinkedIn social platform, and scale forms were sent to the identified employees using public e-mail addresses available on the same platform. A total of 170 scales were evaluated within the scope of the study since some of the scales were not filled in completely. The data collection application was carried out between September 1, 2019 and November 1, 2019.

The data collection tool used within the scope of the research consists of 3 parts. In the first part, the "Organizational Agility Scale" developed by Sharifi and Zhang (1999) was used. This scale consists of 20 questions and 4 dimensions (competency, flexibility, responsiveness, speed). Responses were expected in a 5-point Likert scale (1=Never, 2=Rarely, 3=Sometimes, 4=Often, 5=Always).

In the second part of the questionnaire, the "Information Management Performance" scale, which was brought to the literature by Lee, Lee and Kang (2004) and redeveloped by Çetinkaya

(2011), was used. This scale consists of 23 questions and 4 sub-dimensions (information production, information gathering, information sharing and information storing). Responses were expected in a 5-point Likert scale (1= Strongly Disagree, 2=Disagree, 3=Neither Agree or Disagree, 4=Agree, 5=Strongly Agree).

In the last part of the questionnaire, the participants were asked to fill in the demographic questionnaire. In this form, participants were asked about their gender, age, marital status and educational status.

SPSS was used for the analysis. First of all, the demographic characteristics of the participants were determined through frequency analysis. Afterwards, the results of the factor and reliability analysis of the scales are given. Following this, all descriptive statistics regarding the scales and their sub-dimensions are presented. Finally, the relationships between information management and organizational agility were revealed by using correlation and regression analysis.

Before moving on to the findings part of the study, demographic characteristics of the participants and reliability analyzes of the scales used were given. First, the demographic characteristics of the participants are presented in the table below:

Table 1. Demographic characteristics of the participants

		Percentage (%)
Gender	Male	56
	Female	44
Age	18-25	8
	26-35	38
	36-45	35
	46+	19
Marital status	Married	66
	Single	34
Education status	High school	8
	University	64
	Master degree	28
Working status	Full time	85
	Part time	15

According to the results of the analysis, 56% of the participants are male and 44% are female. Most of the participants are between the ages of 26-45. Many of the participants (66%) are married individuals, and the majority (64%) have university degree. 85% of the participants work full-time in the bank and 15% work part-time.

The factors and reliability results of the scales used in the research, based on the findings

obtained within the scope of this research, are given below:

Table 2. Results of organizational agility scale factor and reliability analysis

Factor name	Factor items	Factor weights	Reliability (Cronbach Alpha)
Competency	OA 1	,709	.856
	OA 2	,780	
	OA 3	,797	
	OA 4	,699	
	OA 5	,735	
	OA 6	,722	
	OA 7	,854	
	OA 8	,786	
Flexibility	OA 9	,731	.879
	OA 10	,793	
	OA 11	,844	
Responsiveness	OA 12	,822	.758
	OA 13	,865	
	OA 14	,825	
	OA 15	,734	
Speed	OA 16	,793	.880
	OA 17	,835	
	Total organizational agility		

OA: Organizational Agility

As a result of the factor analysis, a total of 4 sub-dimensions of the organizational agility scale were determined. The reliability coefficient of the total scale was determined as 0.898. This indicates that the scale is highly reliable. The reliability coefficients of the sub-dimensions of the scale also vary between 0.758 and 0.880.

Table 3. Results of information management scale factor and reliability analysis

Factor name	Factor items	Factor weights	Reliability (Cronbach Alpha)
Information production	IM 1	,730	.745
	IM 2	,704	
	IM 3	,835	
	IM 4	,890	
	IM 5	,832	
	IM 6	,869	
	IM 7	,786	
Information gathering	IM 8	,800	.895
	IM 9	,774	
	IM 10	,755	
	IM 11	,858	
	IM 12	,899	
	IM 13	,744	
	IM 14	,752	
Information sharing	IM 15	,795	.851
	IM 16	,658	
	IM 17	,763	
	IM 18	,832	
	IM 19	,838	
Information storing	IM 20	,723	.812
	IM 21	,615	
	IM 22	,612	
	IM 23	,673	
Total information management			.899

IM: Information Management

As a result of the factor analysis applied to the knowledge management scale, it was determined that the scale had a total of 4 sub-dimensions. The reliability coefficient of the total scale is 0.899. This value means that the scale is highly reliable. The reliability coefficients of the sub-dimensions of the scale also vary between 0.745 and 0.895.

Results

Table 4. Descriptive statistics

		N	Min.	Max.	Average	Std. deviation
Organizational agility	Competency	170	1,00	5,00	4,18	,9763
	Flexibility	170	1,00	5,00	2,75	1,2455
	Responsiveness	170	1,00	5,00	2,90	1,3456
	Speed	170	1,00	5,00	3,20	,5677
	Organizational agility - total	170	1,00	5,00	3,26	,4567
Information management	Information production	170	1,00	5,00	4,20	,5633
	Information gathering	170	1,00	5,00	4,10	,2467
	Information sharing	170	1,00	5,00	2,84	1,456
	Information storing	170	1,00	5,00	3,94	,4675
	Information management - total	170	1,00	5,00	3,78	,4578

According to the results of the analysis, the dimension with the highest average among the sub-dimensions of the organizational agility scale is the "competency" dimension. "Responsiveness" is the sub-dimension with the lowest mean. In the information management scale, the sub-dimension with the highest average is "information production"; the sub-dimension with the lowest average was "information sharing".

Table 5. Correlation analysis results

	Competency	Flexibility	Responsiveness	Speed	Organizational agility - total
Information production (r)	,743	,355	,489**	,467	,432
Sig. (p)	,090	,145	,000	,336	,090
Information gathering (r)	,467	,479	,463	,748**	,340
Sig. (p)	,101	,467	,234	,000	,358
Information sharing (r)	,284**	,564**	,899	,442	,332
Sig. (p)	,010	,004	,141	,320	,230
Information storing (r)	,468	,460	,224	,131	,324
Sig. (p)	,096	,248	,422	,139	,221
Information management (r)	,240	,672	,321	,331	,113
t - total Sig. (p)	,357	,343	,144	,345	,334

According to the correlation analysis results, there is a positive and statistically significant relationship between the information management scale sub-dimension "information sharing" and the organizational agility scale "competency" sub-dimension ($r=.284, p=.010<0.05$). There is also a positive and statistically significant relationship between the information management scale sub-dimension "information sharing" and the organizational agility scale "flexibility" sub-dimension ($r=.564, p=.004<0.05$).

It is seen that there is a positive and statistically significant relationship between the sub-dimensions of the information management scale "information production" and the "responsiveness" sub-dimension of the organizational agility scale ($r=.489, p=.000<0.05$). Finally, there is also a positive and statistically significant relationship between the "information gathering" sub-dimension of the information management scale and the "speed" sub-dimension of the organizational agility scale ($r=.748, p=.007<0.05$).

Table 6. Regression analysis results

	R2	B	Sig (p)
Flexibility ← Information sharing	.145	.473	.030
Competency ← Information sharing	.456	.345	.001
Speed ← Information gathering	.343	.350	.005
Responsiveness ← Information production	.332	.678	.008

According to the results of the regression analysis, the "information sharing" sub-dimension of the information management scale has a statistically significant positive effect on the "flexibility" sub-dimension of the organizational agility scale ($\beta=.473, p=.030<0.05$). Again, the "information sharing" sub-dimension of the information management scale has a statistically significant positive effect on the "competency" sub-dimension of the organizational agility scale ($\beta=.345, p=.001<0.05$). At the same time, the "information gathering" sub-dimension of the information management scale has a statistically significant and positive effect on the "speed" sub-dimension of the organizational agility scale ($\beta=.350, p=.005<0.05$). The "information production" sub-dimension of the information management scale has a statistically significant and positive effect on the "responsiveness" sub-

dimension of the organizational agility scale ($\beta=.678, p=.008<0.05$).

Conclusion

The aim of this research is to examine the relationship between information technology capability and organizational agility on the banking sector. A total of 170 questionnaires were evaluated within the scope of the research since some of the questionnaires were not fully filled. The data obtained within the scope of the research were analyzed through SPSS.

According to the results of the analysis, the dimension with the highest average among the sub-dimensions of the organizational agility scale was the dimension of "competency". "Responsiveness" is the sub-dimension with the lowest mean. As mentioned before, the competency dimension is the ability of an enterprise to be efficient, effective and sufficient while achieving its goals. In this sense, issues such as creating a strategic vision, working to ensure product and service quality, a reasonable price policy, creating an appropriate technological infrastructure, and the competence of the personnel in terms of skills and knowledge are evaluated within the scope of competency (Zhang and Sharifi, 2000, p. 499). Responsiveness describes the ability of businesses to recognize and grasp the developments in the environment, to anticipate, to respond reactively or proactively to them, and to face change without being harmed (İnanır, 2020, p. 79). This dimension is seen as the ability of enterprises to respond to changes caused by national or international policies in the field of marketing, to changes in production models and competition criteria, to create more economical options due to technological developments, and to respond to cultural and political differences that arise outside the enterprise (Zhang and Sharifi, 2000, p. 499). It can be said that the banking sector in Turkey has sufficient and competent personnel and infrastructure but is weak against environmental changes and effects. Competence is of course an important factor, but companies that cannot keep up with environmental changes have a very low chance of survival. In this sense, banks should follow the changes in their operating

environment well and adapt to the changes quickly.

In the information management scale, the sub-dimension with the highest average is "information production; the sub-dimension with the lowest average was "information sharing". At this point, it can be said that information production is related to competence. In this sense, it can be said that banks in Turkey are quite sufficient in terms of producing information but lacking in sharing this information. Information sharing is also important at the point of increasing the learning competence of an organization, and learning is one of the main points of being an agile organization. At this point, there are many steps that can be taken by organizations. For example, by developing a good corporate communication strategy, intra-organizational communication can be activated. Again, within the scope of this strategy, the communication between the employees of the organization will be improved and the obstacles to being an agile organization will be removed. With the trainings to be offered, the information transfer of the employees to each other will also be increased.

When the relations between information management and organizational agility are examined, a positive and statistically significant relationship has emerged between the information management scale sub-dimension "information sharing" and the organizational agility scale "competency" sub-dimension and the "flexibility" sub-dimension. In other words, as information sharing increases, the level of competency and flexibility also increases. Employees' sharing their current knowledge with other employees reduces the need for additional in-house training and enables the organization to keep up with changing and developing conditions faster and more effectively. The organization becomes more flexible and competent, and time is also saved.

Another finding is that there is a positive and statistically significant relationship between the "information production" sub-dimensions of the information management scale and the "responsiveness" sub-dimension of the organizational agility scale. In other words, the faster the organization produces solutions to the

emerging problems, the faster it will be able to respond to the variability and needs.

Finally, a positive and statistically significant relationship was found between the "information gathering" sub-dimension of the information management scale and the "speed" sub-dimension of the organizational agility scale. The information that emerges as the data are raw facts and gains value and turns into information when transferred, corrected, summarized (Celep and Çetin, 2003, p. 82), will also increase the speed of organizational agility. Because organizations will be able to respond quickly and effectively to the extent that they can understand their competitors, sectors or customers.

According to the results of the regression analysis, the "information sharing" sub-dimension of the information management scale has a statistically significant positive effect on the "flexibility" sub-dimension and the "competency" sub-dimension of the organizational agility scale. At the same time, the "information gathering" sub-dimension of the information management scale has a statistically significant and positive effect on the "speed" sub-dimension of the organizational agility scale. Finally, it was concluded that the "information production" sub-dimension of the information management scale has a statistically significant and positive effect on the organizational agility scale's "responsiveness" sub-dimension.

The results revealed that there are statistically significant relationships between information management and organizational agility. It is an undeniable fact that if information management is applied correctly, businesses increase their productivity. With information management, businesses can be in a more creative position compared to their competitors in an increasingly competitive environment, and they can optimize the interaction between product development and marketing activities. In addition, as a result of the effective use of information management, businesses can provide continuity and profit increase. The communication between all employees of the enterprise also develops with information management and the participation of employees in business management is ensured.

Additionally, within the scope of this research, it was concluded that information management also positively affects organizational agility. However, to make these contributions, businesses must first have a healthy organizational culture, strong management expertise and an advanced information technology infrastructure.

There are also various limitations within the scope of this research. The first of these limitations is related to the number of banking sector employees participating in the research. 170 bank employees participated in the research. This number is quite high and may lead to various discussions about the reliability of the evaluation of the results. Although the number is high, it is assumed that the participants filled the questionnaires with all honesty and that all information is realistic and accurate.

The results of the reliability analysis also support this situation. Another limitation is related to the fact that the data were evaluated only by qualitative analysis. In this sense, within the scope of this research, human feelings and thoughts were not included verbally and statistical results were tried to be obtained. Qualitative research methods, in which emotions and thoughts are used intensively, are offered as suggestions for other researches to be applied after this research.

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Is the Revised Bloom's Taxonomy Revisited in the EFL/ESL Reading Textbooks?

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Abstract

Benjamin Bloom and his colleagues produced a cognitive model for classifying educational objectives. This model has not been properly utilized by teachers and university instructors in their teaching settings. This cognitive model covers six main levels as knowledge, comprehension, application, analysis, synthesis, and evaluation which, after knowledge, were displayed as skills and abilities, with the fact that knowledge was the essential prerequisite for putting these skills and abilities into practice. In the taxonomy, each category bears a continuum from concrete to abstract and simple to complex. In 2001, a group of cognitive psychologist revisited and modernized Bloom's Taxonomy for teaching, learning, and assessment. Accordingly, the revised Bloom's taxonomy drew attention away from the partially passive image of educational objectives and hints on a more active conception of categorization. The revised taxonomy employs verbs and gerunds to refer to cognitive levels unlike the nouns employed in the original taxonomy. The dynamic words in the revised taxonomy define the cognitive processes through which thinkers confront and work with knowledge. The learning goals are significant to form a pedagogical interchange in order that learners and instructors perceive the aim of that interchange. Having and classifying objectives support teachers in planning and supplying quality education, forming proper assessment tasks, and ensuring teaching to go parallel with the objectives. Hence, this research paper hints on investigating to what extent the revised Bloom's taxonomy is employed in the reading comprehension questions of an EFL reading textbook. Thus, two research questions were developed to find out the state of cognitive skills stated in the revised taxonomy, the first question aiming at evaluating the lower level while the second one involving the higher cognition level. The investigated EFL reading textbook was analyzed through descriptive content analysis. The findings of the study showed that the examined textbook lacked the higher level cognitive skills highlighted in the revised version of the taxonomy. Related assumptions have been accordingly provided to recommend how the reading textbooks which are being written or will be written should be integrated with the revised Bloom's taxonomy when assessing reading skills.

Key Words: Cognitive Skills, Cognitive Domain, Taxonomy, The Revised Bloom's Taxonomy, Reading Comprehension, Reading Assessment.

Öz

Benjamin Bloom ve meslektaşları, eğitim hedeflerini sınıflandırmak için bilişsel bir model üretti. Bu model, öğretmenler ve üniversite öğretim görevlileri tarafından öğretim ortamlarında gerektiği gibi kullanılmamıştır. Bu bilişsel model bilgi, kavrama, uygulama, analiz, sentez ve değerlendirme olmak üzere altı ana düzeyi kapsar ve bilgiden sonra beceri ve yetenekler olarak sergilenirken, bilginin bu beceri ve yetenekleri uygulamaya koymanın temel ön koşulu olduğu bir gerçektir. Taksonomide, her kategori somuttan soyuta ve basitten karmaşığa bir süreklilik taşır. 2001'de bir grup bilişsel psikolog, öğretme, öğrenme ve değerlendirme için Bloom'un Taksonomisini yeniden gözden geçirdi ve modernize etti. Buna göre, revize edilmiş Bloom taksonomisi, dikkatleri eğitim hedeflerinin kısmen pasif görüntüsünden uzaklaştırdı ve daha aktif bir sınıflama anlayışına dair ipuçları verdi. Gözden geçirilmiş taksonomi, orijinal taksonomide kullanılan isimlerden farklı olarak bilişsel seviyelere atıfta bulunmak için fiiller ve ulaçlar kullandı. Gözden geçirilmiş taksonomideki dinamik kelimeler, düşünürlerin bilgiyle yüzleştiği ve bilgiyle çalıştığı bilişsel süreçleri tanımlar. Öğrenme hedefleri, öğrencilerin ve öğretmenlerin bu değişimin amacını algılaması için ve pedagojik bir değişim oluşturmak için önemlidir. Hedeflere sahip olmak ve bunları sınıflandırmak, öğretmenleri kaliteli eğitimin planlanması ve sağlanmasında, uygun değerlendirme görevlerinin oluşturulmasında ve öğretimin hedeflerle paralel gitmesini sağlamada fayda sağlar. Bu nedenle, bu araştırma makalesi, bir İngilizce okuma ders kitabının okuduğunu anlama sorularında yenilenmiş Bloom taksonomisinin ne ölçüde kullanıldığını araştırmaya yönelik ipuçları vermektedir. Yenilenmiş taksonomide belirtilen bilişsel becerilerin durumunu ortaya çıkarmak için iki araştırma sorusu geliştirilmiştir. Birinci araştırma sorusu alt düzey bilişsel becerileri kapsarken, ikincisi ise üst düzey bilişsel becerileri kapsamaktadır. İncelenen İngilizce okuma kitabı betimsel içerik analizi yoluyla analiz edilmiştir. Çalışmanın bulguları, incelenen ders kitabının, taksonominin yenilenmiş versiyonunda vurgulanan üst düzey bilişsel becerilerden yoksun olduğunu göstermiştir. Buna bağlı olarak, okuma becerilerini değerlendirirken, yazılmakta olan veya yazılacak olan okuma kitaplarının yenilenmiş Bloom taksonomisi ile nasıl entegre edilmesi gerektiği konusunda tavsiyelerde bulunulmuştur.

Anahtar Kelimeler: Bilişsel Beceriler, Bilişsel Alan, Taksonomi, Yenilenmiş Bloom Taksonomisi, Okuduğunu Anlama, Okuma Değerlendirmesi

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Introduction

Bloom's Taxonomy is the most widely accepted model of systematic classification of the learning outcomes of the curriculum, as well as assessment (Adams, 2015). It was produced by Bloom in 1956 according to a certain hierarchical structure and complexity (Furst, 1981). However, due to the change in the perspective of today's society on information and how information is obtained, it was needed to be renewed (Forehand, 2010). It was revised by Anderson and Krathwohl (2001) and took its final version accordingly. The revised Bloom's taxonomy reconsiders the structure of the original taxonomy that has been criticized for years (Krathwohl & Anderson, 2010). Thus, it has become an important planning tool in the field of education programs and teaching, in which contemporary developments are tried to be reflected (Krathwohl, 2002). In the revised taxonomy, there has been a transition from one dimension to two dimensions, the cognitive process dimension and the knowledge dimension (Huitt, 2011). Making it two-dimensional and visual has made significant contributions to the field of curriculum development (Bümen, 2007). Knowledge dimension steps help teachers decide what to teach students. The sub-levels of the knowledge dimension consist of four dimensions: factual knowledge, conceptual knowledge, procedural knowledge and metacognitive knowledge (Darwazeh, 2017). Factual knowledge is defined as the basic knowledge that a student must know to solve problems in a subject area (Su, Osisek, & Starnes, 2004). Conceptual knowledge, on the other hand, is considered as the relations between the basic elements of a large structure and which enable the elements that make up this structure to act together (Jideani & Jideani, 2012). Procedural knowledge is defined as criteria for how to do operate research methods, skills, algorithms, techniques and methods (Lee, Kim, & Yoon, 2015). Meta-relational knowledge, which is one of the knowledge dimension steps, means that the person is aware of and has knowledge about his own cognition (Anderson and Krathwohl, 2010). According to the

constructivist approach, cognitive process dimension steps help students to actively participate in learning through asking such questions "How is teaching provided?", "How does the student learn meaningfully?" (Phillips, Smith, Straus, 2013). The cognitive process dimension consists of six sub-dimensions: remembering, understanding, applying, analyzing, evaluating and creating (Radmehr & Drake, 2017). The recall step is defined as accessing relevant information in long-term memory (Wei & Ou, 2019). Comprehension step is considered as creating meaning from the messages from teaching process, which can be in oral, written or graphic forms (Churches, 2008). The implementation step is defined as executing or using the process path (Waite, Zupec, Quinn, & Poon, 2020). The analysis step, on the other hand, is defined as dividing the material into its constituent parts and determining the relations of the parts with each other and with the whole material (Susan, Warsono, & Faridi, 2020). While there are judgments based on the criteria and standards in the evaluation step, the creation step is based on creating a new, original product by bringing the elements together in a harmonious manner (Anderson and Krathwohl, 2010). Evaluation is as important as teaching and learning in curricula. In order to make the evaluation easier for the practitioners, a classification was made by Bloom (1956) to determine the knowledge and skill levels of the students. Bloom developed taxonomy for alternative evaluation alongside traditional evaluation (Febrina, Usman, & Muslem, 2019). Cognitive steps of Bloom's taxonomy can be expressed as knowledge, comprehension, application, analysis, synthesis and evaluation. The original Bloom's taxonomy has been renewed to keep up with today's information age. The cognitive steps of the renewed Bloom Taxonomy has taken its place in the education system again as remembering, understanding, applying, analyzing, evaluating and creating (Abdelrahman, 2014). In this renewed taxonomy, the strict hierarchical order has been demolished and a slightly more flexible taxonomy has been

introduced. With this change, it became easier to write a goal and it was able to take place in the evaluation process in the performance evaluation. Among the reasons for the renewal of the Bloom's taxonomy are the renewal of the programs, the constructivist approach to learning, the one-dimensional analysis of the old Bloom's taxonomy and its inability to measure high-level skills (Larkin & Burton, 2008). It has been suggested by Anderson and Krathwohl that instead of examining the acquisitions in a complex one-dimensional way, they should be organized in a way to measure two-dimensional and high-level skills. Based on this, it was predicted that examining the target acquisitions in knowledge and cognitive dimensions would be more beneficial and a more effective evaluation could be made (Anderson & Krathwohl, 2001). It was stated that the picture that emerged with the renewed Bloom taxonomy will provide convenience to the practitioners in the planning of the teaching and the evaluation of the process (Halawi, McCarthy, & Pires, 2009). During the revision process, the editors identified 19 alternative schemes to supplement, clarify, and enhance the original Bloom's taxonomy. They examined alternative schemas that could contribute to the updated taxonomy. Of these, 8 represented two or more dimensions as the revised Bloom taxonomy, while 11 represented a single dimension, such as the original taxonomy. Two reasons are suggested for the renewal (Betts, 2008). The first one is to try to get educators to refocus on the original taxonomy. The second reason is that the developments in the USA and the world since 1956, the development and learning psychology, teaching methods and techniques, and contemporary information about measurement and evaluation need to be combined with this taxonomy which may have a greater impact internationally (Assaly & Smadi, 2015; Case, 2013). In many countries around the world, taxonomy has been used as the basis for curriculum development, test creation, lesson planning, and teacher training (Adams, 2015; Krathwohl, 2009).

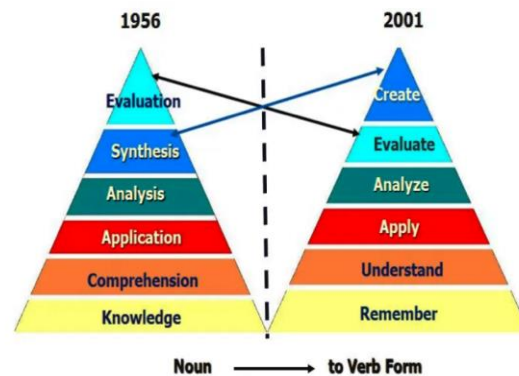


Figure 1. Bloom's Taxonomy Revised (Wilson, 2001)

Therefore, this study is based on investigating to what extent the revised Bloom's taxonomy is utilized in the reading comprehension questions of an EFL reading textbook.

Purpose of the Study

This study addresses the extent of the cognitive levels of the revised Bloom's taxonomy involved in the reading comprehension questions of a globally written EFL reading course book. Similarly, this study focuses on interpreting whether any weaknesses or strengths are present in the reading comprehension questions or not, in terms of covering both the lower and higher order cognitive thinking skills underlined by the revised Bloom's taxonomy. Accordingly, the following research questions were put forward:

1. To what extent do the reading comprehension questions in the EFL Reading course book *Focus on Reading 2* contain the lower order cognitive levels stated by the revised Bloom's taxonomy?
2. To what extent do the reading comprehension questions in the EFL Reading course book *Focus on Reading 2* contain the higher order cognitive levels stated by the revised Bloom's taxonomy?

Significance of the Study

The reading comprehension questions employed in the present EFL reading course book are evaluated in this study. The study also focuses on interpreting the frequency of both lower and higher order cognition levels emphasized by the

revised Bloom's Taxonomy. The ways that may support course book writers in producing high quality course books are accordingly provided in the study. Besides, the results of the paper will be of great importance for reading instructors to be competent in preparing reading comprehension questions based on the revised Bloom's Taxonomy.

Limitations of the Study

EFL/ESL settings, besides the common education, should refer to lower and higher order cognitive domains stated by the revised Bloom's taxonomy to provide learners with the demanded cognitive skills (Assaly & Smadi, 2015). The revised Bloom's Taxonomy was chosen to evaluate the reading comprehension questions of a reading course book utilized in EFL/ESL settings, which means that this study is limited to solely an EFL reading course book. The data gathered in this research paper did not include other EFL/ESL reading course books.

Methodology

This research paper is based on a descriptive content analysis approach to interpret the frequency of the high and low order cognitive steps underlined in the revised Bloom's taxonomy. Similarly, the cognitive skills stated in the revised Bloom's taxonomy were administered while categorizing the reading comprehension questions of an EFL reading comprehension course book. The frequencies of every cognitive step, percentages, and examples of reading questions are shown below. Firstly, with the aim of answering the research question of the study, key words referring to the cognitive levels of the revised Bloom's taxonomy and question stems based on the cognitive domains were utilized to discover which cognitive steps were included in the assessed reading questions. The textbook inquired in this research study is *Focus on Reading 3* which was written by Gillian Flaherty and Chris Coey and published by Nüans Publishing. This study is based on a qualitative research design,

since it made use of percentages, frequencies, and examples from the reading comprehension questions were supplied in the study. As the revised Bloom's taxonomy is a highly useful framework for examining the education materials (Zareian, Davoudi, Heshmatifar, & Rahimi, 2015), in order to evaluate the reading comprehension questions with respect to the cognitive domains, a descriptive content analysis method was used through collecting, classifying, and investigating the reading questions according to low and high order cognitive skills. Consequently, the theoretical framework of this inquiry is the revised Bloom's taxonomy and the findings were tabulated accordingly.

Data Analysis and Results

The data analysis of the study is comprised of sorting the reading questions according to the six cognitive steps and two domains of low and high order framed in the revised Bloom's taxonomy. The corresponding rates are displayed as percentages and frequencies and the associated samples illuminating the levels of taxonomy are denoted below. In a similar way, the following tables (1, 2, 3) and their related interpretations portray the mentioned aspects.

Bloom's Taxonomy in the Reading Questions

Table 1. The Rate of the Six Cognitive Steps of the Revised

Level of question	f	%
Remember	322	100.00
Understand	-	-
Apply	-	-
Analyze	-	-
Evaluate	-	-
Create	-	-
Total	322	100.00

Table 1 simply represents that remembering step (100.00%) of the low cognitive domain is the solely emerging level. Similarly, while no occurrence was detected in the high cognitive domain which is comprised of analyzing, evaluating, and creating, only remembering step was observed in the low cognitive domain which involves remembering, understanding, and applying steps. The samples below exemplify the reading questions included in the assessment:

- Where did the king keep his armies? (remembering level, unit 3, p.19)
- Circle T for true or F for false for each of the following statements. (remembering level, unit 7, p.34)
 1. Naomi Campbell and Kate Moss are supermodels. T / F
 2. There are many famous male models. T / F
 3. Travis Fimmel is Australian. T / F
 4. Male models can earn as much money as female models. T / F
- How many Academy Awards has Rick Baker won? (remembering level, unit 8, p.38)

Revised Bloom’s Taxonomy in the Reading Questions

Table 2. The Rate of the Higher and Lower Cognitive Domains of the

Level of question	f	%
Lower Level	322	100.00
Higher Level	-	-
Total	322	100.00

One can clearly perceive from Table 2 that the lower cognitive domain is observed to have a percentage of 100.00. On the other hand, the higher cognitive domain is detected to have no emergence in the overall reading comprehension course book.

Table 3. The Extent of the Remembering Level and Other Levels in Each Unit

Unit	Remembering		Others	
	f	%	f	%
1	16	100.00	-	-
2	16	100.00	-	-
3	18	100.00	-	-
4	16	100.00	-	-
5	16	100.00	-	-
6	16	100.00	-	-
7	16	100.00	-	-
8	16	100.00	-	-
9	16	100.00	-	-
10	16	100.00	-	-
11	16	100.00	-	-
12	16	100.00	-	-
13	16	100.00	-	-
14	16	100.00	-	-
15	16	100.00	-	-
16	16	100.00	-	-
17	16	100.00	-	-
18	16	100.00	-	-
19	16	100.00	-	-
20	16	100.00	-	-

As it is evident in Table 3, the remembering step (100.00) is the only occurring cognitive level in each unit of the reading comprehension course book. However, no emergence has been observed in the understanding and applying steps of the low order cognitive domain, as well as in the analyzing, evaluating, and creating steps of the high order cognitive domain. In a similar vein, it is clearly understood from the table that, let alone the higher cognitive skills, the reading course book does not include the upper steps of the lower cognitive thinking domain.

Discussion and Conclusion

The aim of this study is analyze the revised Bloom’s taxonomy in EFL/ESL course books (also see Köksal & Ulum, 2018; Ulum, 2021). The findings show that the course books ignored lower cognitive skills in reading questions (Eason et al., 2012). However, higher cognitive domains were not addressed. The dimensions of analyzing, evaluating and creating were not mentioned in the reading questions (Rupp, Ferne, & Choi, 2006). However, the dimensions of remembering, understanding and applying were only partially emphasized. The reading questions in the course books analyzed disregarded the sub-dimensions of categorizing, breaking down, classifying and organizing in the dimension of analyzing that also entailed distinguishing, structuring and integrating (Assaly & Smadi, 2015). Integrated skills were not mentioned at all (Cumming, 2013). In addition, meaning negotiating was hardly broached (Schubauer-Leoni & Grossen, 1993). Explaining an idea or event was another sub-dimension that was ignored in the course books and their reading questions (San, 2019).

Another dimension in higher cognitive domains was evaluating that included arguing, validating, assessing and debating (Liu, Frankel, & Roohr, 2014). The reading questions did not lead the learners to discuss or debate certain issues. Predicting and reflecting were also other sub-dimensions that were disregarded in the reading questions. The questions did not contribute to their hypothesizing potential (Elder

& Paul, 2004; Paul & Elder, 2004). Creating was another dimension in the revised Bloom's taxonomy and involved collaborating, composing, role-playing and simulating. These sub-dimensions were neglected in the reading questions (Ollmann, 1996). Thus, it can be interpreted that the sub-dimensions of analyzing, evaluating and creating were not emphasized and taken into consideration (Ulum & Taşkaya, 2019). The dimension of creating in particular was the most ignored category in the reading questions (Walsh & Hodge, 2018). Therefore, it is possible that second and foreign language learners cannot develop their critical thinking skills if higher cognitive skills cannot be endorsed in course books (Xu, 2011).

The studies that will be conducted in the field of second language education in the future should take the revised Bloom's taxonomy into consideration. English language teaching departments and other related departments and institutions should prepare English course books in line with the framework of the revised Bloom's taxonomy. Teachers should prepare additional tasks in order to feed students at a higher level. The following points can be recommended to address higher cognitive skills:

- Course books ought to deal with higher cognitive domains in reading questions and other skills.
- English language teaching departments should include classes regarding Bloom's taxonomy and enable teacher candidates to take the revised Bloom's taxonomy into account.
- Practitioners in the field should receive in-service training regarding the implementation of the revised Bloom's taxonomy
- Reading questions should be integrated together with other receptive and productive skills.
- Teacher candidates should be aware of these higher cognitive domains while teaching reading skills.

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The New Deal for New Americans: Immigration Status and Mental Health

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Abstract

Extreme circumstances immigrants experience causes them to have a higher risk for mental health problems. It gets even more severe for refugees than host populations and other migrant groups. Thus, in this paper, mental health disparities between native-born citizens and refugees in the US will be investigated by considering social policies. Firstly, immigration status in the US will be investigated in terms of its relation to mental health. Then, mental health will be examined, and the focus will be on anxiety disorders and depression as these are the two common disorders among refugees. In the following section, Social-Ecological Model will be used as a framework to explain the relationship between immigration status and mental health. The Refugee Act of 1980 and The New Deal for New Americans Act will be used to understand the current political climate in terms of the refugee situation in the US, and we will examine how this has an impact on refugees' mental health. This paper will be concluded after mentioning the obstacles and the recommendations.

Key Words: Social Policy, Mental Health, Social-Ecological Model, Refugees, Immigrants.

Öz

Göçmenlerin yaşadığı ekstrem koşullar, ruh sağlığı sorunları için daha yüksek riske sahip olmalarına neden olur. Mülteciler için bu durum ev sahibi nüfusa ve diğer göçmen gruplara kıyasla çok daha şiddetlidir. Bu nedenle, bu makalede Amerika Birleşik Devletleri'ndeki yerli vatandaşlar ile mülteciler arasındaki ruh sağlığı eşitsizlikleri, sosyal politikalar dikkate alınarak detaylıca incelenmiştir. İlk olarak, ABD'deki göçmenlik durumu ruh sağlığı ile ilişkisi açısından incelenmiş, daha sonra mülteciler arasında en yaygın görülen iki rahatsızlık olduğu için odak noktası kaygı bozuklukları ve depresyon olarak belirlenmiştir. Sosyal-Ekolojik Model, göç durumu ile ruh sağlığı arasındaki ilişkiyi açıklamak için bir çerçeve olarak kullanılmıştır. Bu kapsamda, Sosyal-Ekolojik Model'in politika ayağını değerlendirmek adına 1980 Mülteci Yasası ve Yeni Amerikalılar İçin Yeni Düzen Yasası incelenmiş olup, bu yasalar ABD'deki mülteci durumuna ilişkin mevcut siyasi iklimi anlamak için kullanılmıştır. Bu gibi sosyal politikaların mültecilerin ruh sağlığı üzerinde nasıl bir etkisi olduğunu incelediğimiz bu makale, engeller ve önerilerden bahsedildikten sonra sona ermiştir.

Anahtar Kelimeler: Göç, Ruh Sağlığı, Sosyal Politika, Mülteci, Göçmen.

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178-184.

Introduction

Immigration status impacts mental health mainly because of legal status, language and cultural barrier, financial obstacles in accessing healthcare services, and lack of knowledge on how to navigate the complex healthcare system in the US. Immigrants are more likely to get employed in jobs that require low-level skills. This also means that those jobs are more dangerous and hazardous but pay less and usually lack official status recognition and social protection.

A refugee is forced to flee their country due to circumstances such as persecution, war, or violence. They usually cannot return home, or they are afraid of going back. According to The United Nations High Commissioner for Refugees is a United Nations (UNHCR, 2017), the number of forcibly displaced population - which includes individuals who fled for the same reasons but have not passed the border, is 68.5 million, whereas the number of refugees is 25.4 million all around the globe. This trend shows that almost 44.000 people were forced to flee their homes every day in 2017, which directly impacts the US since it has been one of the countries that accept the highest number of refugees all over the world historically. According to the USA for UNHCR (2019), the US has welcomed more than three million refugees since 1975.

Mental health service utilization in immigrant populations is lower than native-born citizens (Kung, 2003). They are also less likely to seek help due to family support, cultural attitudes toward mental health, and language barrier. Social determinants of health have an impact on mental health disparities between native-born citizens and immigrants. Even though very little is known about immigrant mental health and citizenship status, it is apparent that nativity impacts the prevalence of depression and anxiety disorders, especially among adolescent refugees (Filion, 2018). Interestingly, according to Blue and Fenelon (2011), the immigrant paradox occurs as immigrants are more likely to exhibit better health when they first arrive. However, after a while, these positive outcomes fade away in line with the time spent in the US.

Mental Health among Refugees in the US

The immigration status patterns mental health disorders in a way that many different factors interact. There is a bidirectional relationship with physical health problems or social factors and a causal relationship with others, such as experiences before and during their journey. Research indicates that depression and anxiety disorders are two of the most common mental health disorders among refugees (Cruwys et al., 2014). For example, according to a study about Karenni refugees, their depression and anxiety proportions were more than 40% for those residing along the Burmese–Thai border, whereas it was 7-10% for the general US population (Vonnahme, Lankau, Ao, Shetty and Cardozo, 2015). Authors collected data from the resettled refugees in the US and found that 27% of those refugees had at least one mental health condition, and 45% of them experienced symptoms of multiple conditions. Besides, they found that refugees who experience symptoms of PTSD also experienced symptoms of anxiety, depression, or both. Thus, there is a high risk of comorbidity here.

Everybody might experience anxiety from time to time, and it can even be helpful for individuals as it might be a source of motivation to solve daily problems. However, anxiety disorders are much more intense and long-lasting when compared to everyday anxiety. According to DSM-5 (2013), It also interferes with the individual's habits, work schedule, and even relationships. There are different types of anxiety disorders, such as phobias, panic disorder, generalized anxiety disorder, and post-traumatic stress disorder. Their symptoms might be observed in different forms, including physical, behavioral, and psychological.

Physical symptoms might be cardiovascular, neurological, respiratory, or musculoskeletal (Kitchener and Jorm, 2006). Also, psychological symptoms might range from irritability to restlessness. In addition, behavioral symptoms might include avoidance, obsessive or compulsive behaviors. It is important to note that refugees usually self-report poor health, and it is believed to be associated with depression as a result of

somatization (Vonnahme et al., 2015). According to Katon and Kleinman (1982), particular cultures might impact a person's likelihood of somatizing depression as it may not be culturally acceptable to express psychological disturbances verbally.

According to DSM-5 (2013), major depressive disorder lasts for at least two weeks and interferes with daily life. Depression is an unusual, sad mood that continues for more than 14 days. Some symptoms include tiredness, feeling worthless, suicidal thoughts, difficulties with sleeping, and changes in eating habits. Refugees may self-criticize and self-blame during this period, and one can observe a loss of interest in personal appearance and sexual desire. It is believed to be a result of changes in neurotransmitters in the brain. Thus, it is often treated with medications (anti-depressants), which activate serotonin's secretion in the brain, a mood-regulating brain chemical.

Social-Ecological Model and Refugee Health

Social-Ecological Model (SEM) will be used to investigate the relationship between immigration status and mental health in detail (See Appendix A). SEM is a theory-based framework to understand the levels of a social system and how individuals and the system's environment interact in terms of health promotion (CDC, 2014). SEM levels are as follows: Individual, interpersonal, community, organizational, policy/enabling environment. In order to make an effective intervention, it is essential to use this approach, which considers different levels of factors (Figure 1). Therefore, in this paper, we aim to use this framework and examine the New Deal for New Americans policy on five different layers.

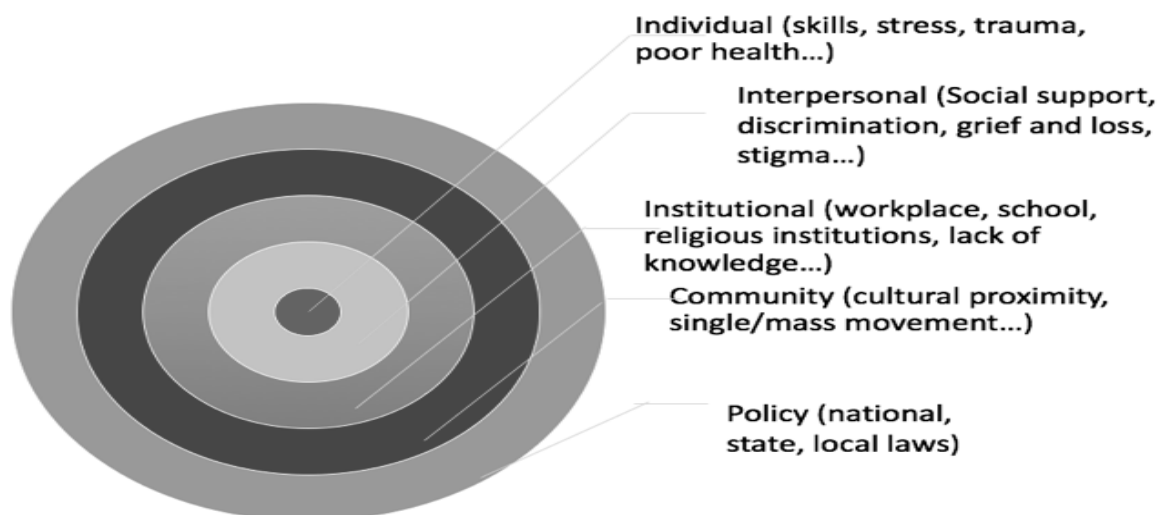


Figure 1. Levels of the Social-ecological Model

On an individual level, the model mentions an individual (i.e., age, gender, religious identity, etc.). Those characteristics might influence their stress levels and eventually impair their overall well-being. Secondly, social support systems (i.e., family, friends, religious networks) are examined on an interpersonal level regarding their influence. The interpersonal level is vital as refugees have their social support systems disrupted, and they usually are trying to establish a new social support system in the country they settled in.

Furthermore, on an organizational level, social institutions should be active in terms of refugee

health as they also impact behaviors on the individual and community levels. Last but not least, the policy/enabling environment plays a crucial role in individual behaviors. Local, state, national, and global laws and policies regarding health and refugees influence their psychological and physical well-being. Two different federal laws regarding refugees will be investigated in the following section.

Bidirectional Relationship Between Migration and Health

There is a bidirectional relationship between immigration status and mental health disorders (Figure 2). Refugees are exposed to trauma and stressors before, during, and after their migratory process. Their experiences in their home countries usually consist of traumatic events, grief, and loss. Besides, during the journey, they might be subject to different types of abuse, and their experiences vary based on geographical proximity to their destination and what kind of ways they are using to arrive there. Once they arrive, they are subject to different types of anxiety-provoking situations and stressors. This includes their work-related circumstances as it brings some psychological and physical burden to refugees, especially since they are hired in low-status jobs that usually pay less. Also, refugees have difficulty adjusting to the new culture and environment, which becomes a source of stress. Refugees usually experience social exclusion, and perceived discrimination increases

their levels of stress. This factor is doubled with their lifestyle factors as they usually have to cope with the language barrier, especially when they first arrive.

These factors usually have an impact on physical well-being and health behaviors too. For instance, smoking and drinking behaviors are more common among immigrant populations (Záleská et al., 2014). Thus, mental health disorders are complicated and not easy to treat as biopsychosocial factors cause them. According to the biopsychosocial model, mental health problems usually occur because of biological, social, and psychological factors. We can see how these factors are interconnected (Figure 2).

This paper's most critical SEM level is the policy/enabling environment, which consists of policy-making and other leadership types for health promotion. Refugee Act of 1980 and The New Deal for New Americans Act, which was proposed in 2019, are two critical examples to it in terms of refugee health.

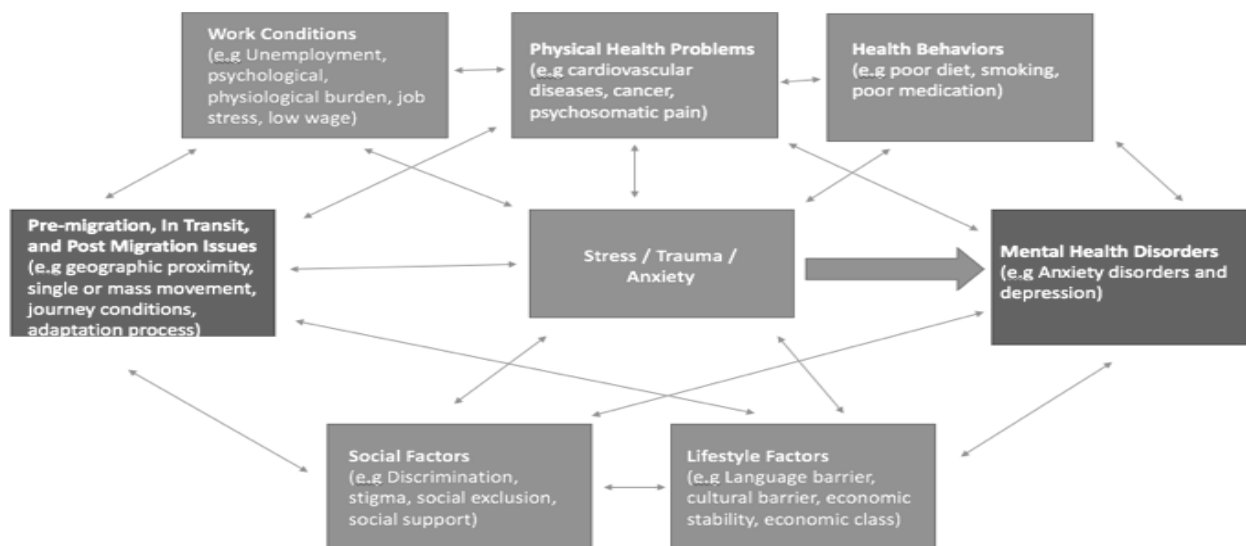


Figure 2. Model of the Relationship Between Migration Issues and Mental Health Disorders based on Social-Ecological Model

The Refugee Act of 1980 and The New Deal for New Americans Act

The United States Refugee Act of 1980 is a Public Law (96-212) related to how the office should

ensure refugees to be economically self-sufficient by providing resources for training, cash assistance, etc. This law is used as a base for most refugee resettlement programs in the country and mentions that the US policy aims to encourage all nations to provide help to refugees to the fullest extent possible. Thus, it helped reduce the stress level for refugees by reducing many factors such as unemployment, language barrier, and economic instability. As mentioned before, SEM investigates issues on five different layers and policies are the fifth layer this model emphasized. Therefore, the two Acts we will be covering in this paper will examine the situation on the fifth layer. This idea aligns well with the differential exposure hypothesis, which is an essential contribution to the health and stress literature, as it states that members of disadvantaged groups experience more stressors than advantaged group members (Denton et al., 2004). This is relevant as refugees are exposed to more cumulative and chronic stress, which eventually hurts their physical and mental health. Thus, the initiative investigated above would help reduce the stress level refugees in the US have experienced just as the SEM suggests.

On the other hand, the current political climate is likely to impact the well-being of refugees negatively. A new Public Charge rule that the Trump administration proposed on October 15, 2019, aimed to prevent legal immigrants who use government benefits they are legally entitled to, such as food assistance or services such as Medicaid, from receiving green cards/permanent residency. As a result, lower-income migrants would have more difficulty in obtaining US citizenship. The draft of the proposal was first published in September 2019 and received much critique. The attacks on immigration, which also include redefining asylum, might have become a stress factor for immigrants. Even though refugees and asylum seekers were exemptions to this rule, several other incidents, such as Executive Order 13769 (Protecting the Nation from Foreign Terrorist Entry into the United States, also known as the Muslim ban/travel ban) which might lead refugees to get overwhelmed. It is also important to note that on September 26, 2019, the White House announced that in 2020, refugee admissions

to the country would be limited to 18,000. Furthermore, Executive Order 13888 (Enhancing State and Local Involvement in Refugee Resettlement) gave state and local authorities the power to deny refugee resettlement in their particular area.

After these decisions about immigrants and refugees, several representatives introduced new federal legislation on October 30, 2019: The New Deal for New Americans Act. It was proposed to strengthen the infrastructure of the immigration system in the country. This bill aims to decrease the citizenship application fee and increase citizenship opportunities for refugees and immigrants. This act aims to establish assistance programs for immigrants and refugees to overcome challenges such as employment, obtaining citizenship, and the language barrier. Also, 110,000 refugees are expected to be welcomed in the country through refugee resettlement programs per fiscal year instead of 18,000, and they will receive the necessary legal support once they arrive. The bill emphasizes that refugees will be welcomed in inclusive and welcoming neighborhoods, which makes this bill also helpful in reducing discrimination and increasing social support. Thirdly, this bill ensures that everybody will have equitable access to citizenship, decreasing refugees' stress levels. They will also have access to English language learning programs and workforce development programs to support their education and economic participation in the country. Clearly, all these points emphasized in the bill help overcome obstacles refugees face and reduce their stress levels. By doing so, eventually, refugees in the US would have better psychological and physical well-being.

Obstacles and Recommendations for Better Health Outcomes

There might be some obstacles that hamper these initiatives and create difficulty in implementing it. Firstly, there was political instability in the US as the Trump administration had an entirely different immigration policy approach. Even though the Biden administration seems more welcoming, the previous administration had long-lasting effects

coupled with the effects of the Covid-19 pandemic. This lack of political will might make it harder to implement the initiative and let refugees have a smoother adjustment process as there will be resistance from regulatory bodies. Moreover, all the bill's points are costly and will burden the US government in the short-term. Its cost-effectiveness will be questioned, and some recommendations in the bill might not be accepted.

Furthermore, it is hard to find data on refugee mental health from governmental sources. Even though these initiatives would help reduce the stress levels and eventually help increase the overall well-being among refugees, most refugees still lack access to mental health services as it is hard to detect the problem without proper data. Even those who have access to mental health services in various settings might deal with the language barrier and lack confidence in seeking help when third parties (interpreters) get involved. Another obstacle is the lack of knowledge on how to navigate the system, especially when it comes to mental health services and counseling (Jentsch et al., 2007).

Social barriers such as stigmatization (surrounding psychological disorders), lack of awareness, fear of reporting problems, discrimination, or mistreatment might become obstacles to access to treatment for refugees (Samari, 2017). Also, refugees lack immunization and experience poor living conditions (Lifson et al., 2001).

They also might have inadequate access to food and water, and these circumstances may exacerbate the situation. These stressful conditions coupled with an impaired social support system, fear of deportation, or current political climate might have many negative health consequences for refugees in the US.

Thus, the first recommendation would be to increase the advocacy efforts as it is a crucial component of overcoming the aforementioned barriers. Advocacy can be defined as an organized effort to push the leadership toward achieving a particular goal, such as developing new policies or changing existing ones. It has utmost importance to develop an advocacy strategy and let decision-makers know about the situation and how urgent

it is. The New Deal for New Americans is an example of the results of those efforts.

Secondly, the importance of collective action and community involvement should be acknowledged. Thus, public education and stimulating community dialogue are necessary to overcome those barriers. Once knowledge increases, individual attitudes would change, resulting in reduced stigma in terms of mental health. Then demand would increase for mental health services, and people would seek help for their psychological symptoms. In conclusion, it is not enough to work on material restoration. We should work on psychological restoration as well in order to prevent future mental health problems.

Conclusion

The social-ecological system requires changing individual behaviors in five different layers, which start from the individual and continue with the household, community, organizational, and policy level. Thus, individuals need to understand the urgent need for refugees' mental health resources and have a supportive family environment that encourages them to seek help. In this paper, we investigated the fifth layer of the SEM, policy-level changes in individual behavior by examining two different acts related to the refugee situation.

As it is pictured, SEM helps us understand how complicated this issue is but, at the same time, gives directions to examine the problem and solve it. Thus, working in all five different layers of the problem and making prevention and then intervention programs a priority, we can help refugees have better psychological and physical health in a time in which anti-refugee sentiments are on the rise due to political climate and instability.

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First Things First Manifestos: Social Responsibility in Graphic Design

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Abstract

The concept of social responsibility has become both an individual and a corporate phenomenon. In this context, all individuals and organizations are expected to carry out their activities within the framework of social responsibility. At this point, the social responsibility of the designer is even more important due to its mission of informing and directing society, as the designer raises awareness and convinces the society while presenting the product s/he has designed. However, in the situation that came with industrialization and then capitalism, the designer started to go out of his main duty and lost the awareness that this profession should be carried out ethically. One of the main reasons for this was that the rapid development in the advertising sector through a transformation towards a consumer society brought about focusing on the number of works rather than their quality. The First Things First Manifesto, which is against this kind of works and sees the works made according to the wishes of the consumer society as worthless and a waste of time, has attracted a lot of attention since its first publication and has been discussed by many field researchers and designers. Over time, the First Things First manifesto has been renewed against the changing problems with the development of technology and social changes and its 2020 version was published in order to draw attention to the effects of the climate crisis today. In this article, First Thing First Manifestos which draws attention to the main task of the designer in terms of social responsibility are examined, and the changing responsibility of the designer against current problems of the society is discussed in line with these manifestos.

Key Words: Social Responsibility, First Things First, Graphic Design, Corporate Social Responsibility.

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Öz

Sosyal sorumluluk kavramı hem bireysel hem de kurumsal bir olgu haline gelmiştir. Bu bağlamda tüm bireylerin ve kuruluşların sosyal sorumluluk çerçevesinde faaliyetlerini sürdürmesi beklenmektedir. Bu noktada tasarımcının sosyal sorumluluğu toplumu bilgilendirme ve yönlendirme misyonu sebebiyle daha da önem taşımaktadır çünkü tasarımcı toplumu bilinçlendirir, ikna eder ve tasarladığı ürünü topluma sunar. Sanayileşme ve ardından kapitalizm ile birlikte gelinen durumda tasarımcı asıl görevinin dışına çıkmaya başlamış ve mesleğinin etik bir şekilde yürütülmesi gerektiği farkındalığını kaybetmiştir. Bunun temel nedenlerinden biri tüketim toplumuna doğru yaşanan dönüşümde reklam sektöründeki hızlı gelişimin çalışmaların kalitesinden ziyade sayısına odaklanmayı beraberinde getirmesi olmuştur. Bu çalışmalara karşı olan ve tüketim toplumunun isteklerine göre yapılan çalışmaları değersiz ve zaman kaybı olarak gören First Things First Manifestosu ilk yayınlandığı zamandan itibaren çok ilgi görmüş ve birçok alan araştırmacıları ve tasarımcılar tarafından tartışılmıştır. Zamanla First Things First manifestosu teknolojinin gelişimi ve toplumsal değişimlerle birlikte değişen sorunlara karşı yenilenmiş ve günümüzde iklim krizinin yol açtığı etkilere dikkat çekmek amacıyla 2020 versiyonunu yayımlamıştır. Bu makalede sosyal sorumluluk açısından tasarımcının asıl görevinin ne olduğuna dikkat çeken First Thing First Manifestoları incelenmiş, bu manifestolar doğrultusunda güncel toplumsal sorunlara karşı tasarımcının değişen sorumlulukları ele alınmıştır.

Anahtar Kelimeler: Sosyal Sorumluluk, First Things First Manifestosu, Grafik Tasarım, Kurumsal Sosyal Sorumluluk.

Introduction

“Social responsibility” is defined as “the obligations of an institution to protect and develop the environment in which it operates, the obligation that an individual, manager or organization has to fulfill towards the society” (TDK, 2020). Activities that focus on social responsibility are those which make the personal sector, public institutions, and non-governmental organizations work collectively, direct them to behave as a whole for a particular reason whose tremendous consequences are shared by the society (Saran, Coşkun, Zorel, & Aksoy, 2011, p.373). In this context, people and organizations that take social responsibility into account must act ethically and responsively to social, cultural, economic, and environmental issues. It can be said that social responsibility is both an individual and an institutional requirement as the individual's acceptance of social benefit as a priority in his lifestyle and principles reveal the individual aspect of social responsibility.

As the term social responsibility has become much more important and common nowadays, companies aiming to innovate in their social responsibility efforts are increasingly integrating corporate social responsibility issues into their business practices and aligning their company vision and values with the corporate social responsibility agenda. This has revealed the need for more professional design for social responsibility works and made it necessary to work with graphic designers as design should now create dialogue channels between the company, and customer/consumer, adapted to the communication needs of different target audiences, rather than just promoting a brand or helping businesses talk to their target audience. Graphic design should be integrated into the process as it is a visual communication tool that promotes a product or service, conveys a message, and has the power of persuasion. With this persuasive power, graphic design can make a

person, a group or a society discourage, change, or accept ideas. As a result, there have been many people who have argued that the designer's job is not just to advertise or promote a product, but that s/he is responsible for his work, and they have published their thoughts as a manifesto. The "First Things First" Manifesto, written by Ken Garland in England in 1964 and later renewed with the same name, is one of them. The first manifesto was a positive transition in the graphic design industry to the quest to create new meaning, but it also sparked a lot of controversies, leading to a wholesale rejection of the manifesto for being idealistic. The Manifesto was revised under the leadership of Rick Poynor in 1999 and Cole Peter in 2014, and was finally rewritten in 2020 by Marc O'Brien, Namita Dharia and Ben Gaydos to draw attention to the climate crisis and is a call for social responsibility signed by many designer artists and students.

The first manifesto (see Image 1) was printed in 400 copies in January 1964. It was a response to the society devoted to consuming in England in the 1960s and called for a return to the humanistic side of the design (The First Things First Manifesto, 2020). The manifesto was signed by 22 graphic designers and supported by about 400 graphic designers and artists. Among the signatories of the manifesto were famous graphic designers and typographers such as Ian McLaren, Caroline Rawlence, Anthony Froshaug, Edward Wright, Ken Briggs, John Garner, Robert Chapman, as well as students, educators, young designers, and photographers (Benuğur, 2014, p.210). The 1964 manifesto, which supports the idea that the only duty of designers is not to make designs that will provide financial gain, but that they should support the welfare of the society and that they can be the people who lead the society in this direction, requires designers to think over their responsibilities in their work and question their ethical perception, make human-centered designs and stay away from designs that will lose their effect in a short time.



Image 1. First Things First Manifesto (Source: <http://www.kengarland.co.uk/KG-published-writing/first-things-first/>)

The 1964 Manifesto has expressed the basic problems such as what the role of the graphic designer is, how it should be, the designer's point of view on more important issues that society needs, and the necessity of ethical evaluation of their profession. The purpose of the manifesto was to draw attention to the more useful and more important aspects of communication and to decide what their priorities are, rather than the abolition of commercial advertising altogether. For Poynor (2002), the critical distinction highlighted by the manifesto is the difference between design for communication (giving people essential information) and design for persuasion (making people believe in buying something). In the view of supporters of the manifesto, much designer talent and effort were expended in advertising several junk goods, from mineral water to weight-loss diets, while "more useful and more enduring" things such as street signs, books, periodicals, catalogues, manuals, educational tools were left aside. The manifesto, which draws attention to the issues that graphic designers should direct the society and use their potential more efficiently and more beneficially, continued to be discussed with great interest during and after its period. Manifestos on the subject in the following periods

brought to the agenda that the graphic designer can be more beneficial for the society, that he can do permanent, and mass-raising works beyond the limits set for him, and it has been developed in the direction of raising conscious designers by including the subject of responsibility in the training of the next generation designers.

In 1998, Adbusters magazine republished Garland's original manifesto. In the manifesto, Adbusters represented the points he emphasized in a way that would respond to current problems (Prusynski, 2008, p.10). In early 1999, First Things First 1999 emerged, with Hungarian designer Tibor Kalman proposing a revision (López-Lago, 2014). The First Things First 1999 manifesto, which is an updated version of the manifesto published in 1964, argues that the design energy is not enough to support an aimless consumption and explain the increasingly complex modern world (Poynor, 2002).

The 1999 Manifesto was signed by 33 designers and published simultaneously in Adbusters, Emigre, AIGA Graphic Design Magazine, Eye Magazine, Blueprint, and Items. Later, it was published in many other magazines and books which maximized its impact. This text, once again, made designers rethink what their professional

priorities were and what the future of their profession would be if they continued to follow this path (López-Lago, 2014). In each variation of the Manifesto, the position of the designer as a professional is clarified simply; however, both versions emphasize to think over the designer's position and moral responsibility while using the abilities, knowledge, and experience especially in visual communication (Poon, 2016, p.2). So, the new version of the manifesto can be considered as an update required by the developments in visual communication tools and increasing needs and opportunities in the field.

In the First Things First 1999 manifesto, visual communication designers were reminded that they should prioritize more useful, permanent, and important issues such as social, cultural, and environmental problems instead of the wishes and expectations of the consumer society and use their visual communication tools and expertise for these purposes. In addition, the reordering of priorities for more beneficial, sustainable, and democratic forms of communication in environmental, social, and cultural challenges was advocated, and the necessity of producing persuasive power by transforming it into thought for public benefit was highlighted. With this aspect, the manifesto reminded that designers, as professionals, should think not only as consumers but also as citizens.

In the fiftieth year of the first manifesto published in 1964, the manifesto, which aims to reflect the impact of the internet on communication and design, was updated and republished with the title of "First Things First 2014" by designer Cole Peters and co-written and edited by Chris Armstrong, Aral Balkan, Jon Gold, Laura Kalbag, André Mooij and Anna Sobolewska (First Things First 2014, 2014). The manifesto draws attention to the worldwide negative impact of the development and progress of technology and, accordingly, the industry.

Cole Peters stated that it is a natural duty to deal with ethical issues as designers, stating that most of the work is for large-scale consumption, which means that when designers ignore their moral compass, they have the potential to negatively affect large numbers of people (Ball, 2014). Thinking that designers today have more specific

(and less talked about, but equally important) concerns to address, most of which caused by the prevalence of technology today, and that this was not really addressed in any of the previous manifestos, Peters said that the manifesto was updated with contemporary concerns (Peters, 2014) just like the previous one.

Cole Peters expanded on the content of the manifesto, suggesting that graphic designers should focus on solving real problems in other important areas such as education, medicine, safety, communication, and social responsibility that benefit society, rather than spend too much time on superficial commercial work. Besides, he stated that every designer whose work has the power to influence people collectively has a duty to produce works that respect people and benefit society (Ball, 2014), which puts an important responsibility on the shoulders of the designer.

The inclusion of the influence of the "world wide web" in the manifesto and the expansion of the audience appealing to the manifesto can be considered as two important updates of the manifesto. Arguing that the renewal of the manifesto should be sensitive to the realities of the increasingly complex and interdisciplinary and multidisciplinary nature of design, Peters, therefore stated that it should represent everyone who uses technology and creativity in a professional pursuit, not only designers but also developers, programmers, and other creative technologists (ico-D, 2014).

The designers, creative technologists and interdisciplinary communicators who signed the manifesto point to the negative effects of the development and expansion of technology and industry on a global scale in the last 15 years and draw attention to the fact that the manifesto has gained more importance. They stated that they were also responsible for this situation professionally as they spent their professional potential by exploiting destructive unimportant emotions, reinforcing commercial fraud, and producing narrowly appealing designs for the sale of customer data. They emphasize that the skills should be used in areas such as human rights, civil liberties, and humanitarian aid (Benuğur, 2014, p.210). In his 2014 manifesto, Peters advocated the

production of meaningful and useful work by moving away from profitable business models and putting companies in front of individuals with a new style. The developing technology and considering the issues related to privacy, security, and freedom of expression and their relationship with the design industry brought up the necessity of reevaluating the activist role of designers.

It is possible to say that the public interest and human-oriented works of the designers are indirectly related to the content of the First Things First manifestos. In this context, manifestos have played an effective role in the creation of works that will produce solutions to social problems. The First Things First manifesto, which reminds us that designers can make humane and conscious designs for society instead of only designs for sale, was rewritten and edited after 1964, and the signature of many contemporary designers under

each manifesto is a sign of how important it is and that it will not lose its importance for a long time. The re-emergence of the First Things First manifesto in 2020 is the most important proof of this. The First Things First manifesto has been rewritten in 2020, the 50th anniversary of Earth Day, taking into account the emergency that has arisen due to the effects of the climate crisis, which is taking place in front of the whole world in a much more devastating way than in the past. The manifesto was updated by Marc O'Brien, Namita Dharia, and Ben Gaydos with support from Sarah Harrison, Julia Yezbick, Karen Stein Shanley, Rachel Cellinese, and Rich Binell. Cast Iron, a brand studio with an emphasis on eco-design, created the identity and website of the new manifesto with the help of web developer Cody Whitby (The Brand Identity, 2021).

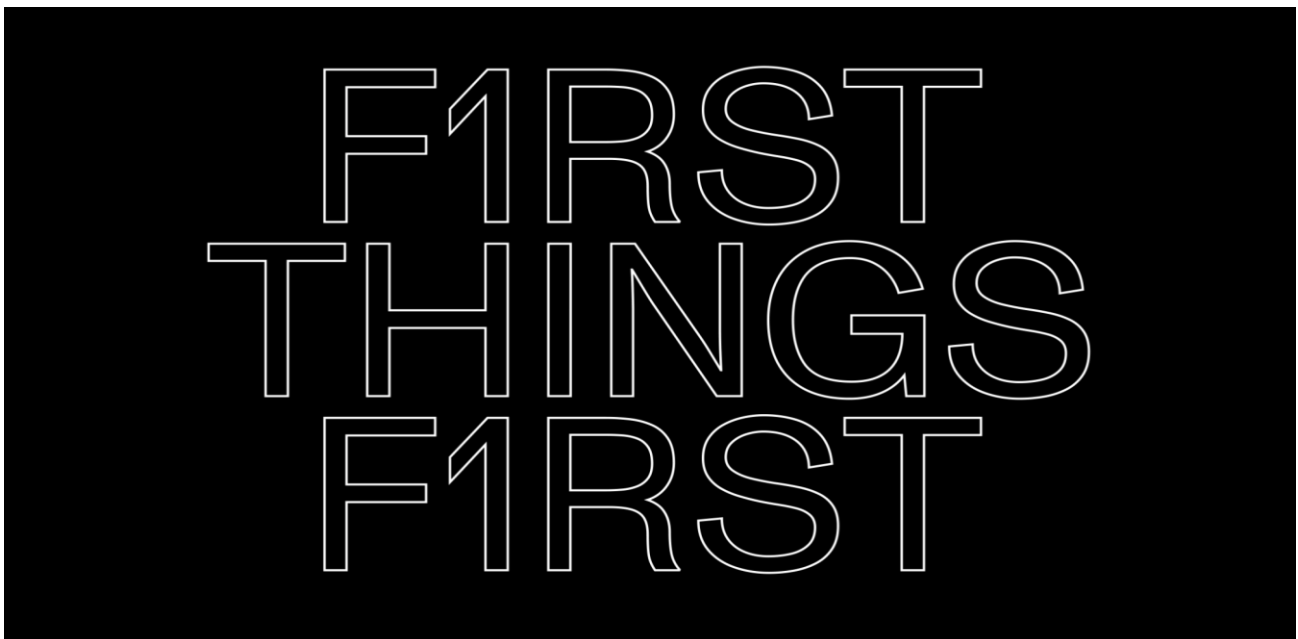


Image 2. First Things First 2020 Manifesto (Source: <https://www.firstthingsfirst2020.org/>)

Preserving the narrative language and vision of the original manifesto, First Things First 2020 was written with a sense of urgency brought on by the climate crisis, in line with the expectation that this decade is crucial to bring people together around the climate movement based on social and environmental justice. So, similar to the previous updates and revisions, the latest version of the manifesto included contemporary issues and concerns and tried to provide a perspective for the

designers in terms of their responsibilities against society.

Conclusion

This article summarized the contents of the First Things First manifestos in order to provide a vision of social responsibility to graphics designers and other professionals in the field of communication design. First Things First manifestos focused on

the broader implications of graphic design dominated by commercial design. The common purpose of these manifestos is that the designers do not only work for profit; they emphasize how important it is for them to use their talents in solving social, cultural, and environmental problems and to increase the sensitivity of the designs for the benefit of society while judging himself morally. While aiming that the products or services are for the needs of all people rather than just the needs of the individual, it is argued that the designers should use their time and services in education, cultural and social areas as a key point and that they should use their talents in this direction for more social gain. To reach its aim, it brought together groups of design professionals to express their concerns about the direction of society and raised the question of whether designers could act together to improve social conditions. The first manifesto resonated with the design community, and the issues it raised are still vital today. While the First Things First manifesto is still important, revisions have been made to support the content and purpose of the manifesto, and new manifestos have been signed under the leadership of many design associations and designers. In this respect, it can be said that this manifesto has a modern and renewable ideology. So, the field of graphic design should become more society-oriented, morally, and ethically responsible and it should start from professional education.

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Level of Knowledge and Awareness of Pregnant Women about the Coronavirus Pandemic (COVID-19): An Assessment from a Developing Country

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Abstract

Pregnant women may experience psychological difficulties during the pregnancy experience. Being pregnant during the Covid-19 pandemic process carries pregnancy experiences to a different dimension. Pregnancy is among the vulnerable groups against respiratory tract infections. Health systems support services should be provided to women of reproductive age and pregnant women during the COVID-19 pandemic. This study aims to determine the information needs of pregnant women during the COVID-19 epidemic and to contribute to increasing the quality of health care services to be provided. The sample of this study consisted of 254 pregnant from Trakya University Medical Faculty Obstetrics Clinic in Turkey. The study was conducted from December 2019 to October 2021. Two scales were used in our study. Participants were first evaluated with a personal information form. The scales we used in our study, Perceived Stress Scale-10 (PSS-10), Beck Anxiety Inventory (BAI) were used. In our study; concerns of pregnant women for their own health, their unborn baby (children) and the postpartum period were significantly higher during the COVID-19 pandemic. In addition, the COVID-19 pandemic has demonstrated the need for optimal community use of maternal and child health services. As the time of birth approached, the feeling of pregnant women was increasing. Developing countries may be the weakest part of the chain to stop the spread of current and future epidemics. It is necessary to carry out a well-planned, high-quality and structured training program in order to increase the level of social awareness and contribute to better process management in pregnant women.

Key Words: Developing Country, Pregnancy, The Perceived Stress Scale, Coronavirus Pandemic (COVID-19).

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Öz

Gebe kadınlar, gebelik deneyimi sırasında psikolojik zorluklar yaşayabilmektedir. Covid-19 pandemisi sürecinde gebe olmak, gebelik deneyimlerini daha farklı bir boyuta taşımaktadır. Gebelik dönemi solunum yolu enfeksiyonlarına karşı hassas gruplar arasında yer alır. Sağlık sistemleri COVID-19 pandemisinde, üreme çağındaki kadınlara ve gebelere maddi ve manevi destek hizmetleri sağlanmalıdır. Bu çalışma, COVID-19 salgını sırasında gebelerin, bilgi ihtiyaçlarını belirlemeyi ve verilecek sağlık bakım hizmetlerinde kaliteyi arttırmaya katkı sunmayı amaçlamaktadır. Bu çalışmanın örneklemini Türkiye'deki Trakya Üniversitesi Tıp Fakültesi Kadın Hastalıkları Kliniği'nden 254 gebe oluşturmuştur. Çalışma Aralık 2019 ile Ekim 2021 tarihleri arasında gerçekleştirilmiştir. Katılımcılar öncelikle kişisel bilgi formu ile değerlendirilmiştir. İki ölçek kullanılmıştır. Çalışmamızda kullandığımız ölçekler, Algılanan Stres Ölçeği-10 (PSS-10), Beck Anksiyete Envanteri (BAI) dir. Çalışmamızda; COVID-19 pandemisi sırasında hamile kadınların kendi sağlıkları, doğmamış bebekleri (çocukları) ve doğum sonrası dönemleri ile ilgili endişeleri önemli ölçüde daha yüksekti. Ayrıca, COVID-19 pandemisi, anne ve çocuk sağlığı hizmetlerinin toplum tarafından optimal kullanımına duyulan ihtiyacı göstermiştir. Doğum zamanı yaklaştıkça hamile kadınların pandemi kaynaklı endişesi artmakta idi. Gelişmekte olan ülkeler, mevcut ve gelecekteki salgınların yayılmasını durdurmak için zincirin en zayıf parçası olabilir. Gebelerde toplumsal farkındalık düzeyinin artırılması ve daha iyi süreç yönetimine katkı sağlanması için iyi planlanmış, kaliteli ve yapılandırılmış kadın sağlığı eğitim programlarının yürütülmesi gerekmektedir.

Anahtar Kelimeler: Gelişmekte Olan Ülkeler, Gebelik, Algılanan Stres Ölçeği, Coronavirus Pandemisi (COVID-19).

Introduction

Psychological stress results from an imbalance between an individual's perception and external environmental demands. The studies, psychological stress; It shows that it is closely related to anxiety, depression and physical conditions such as cardiovascular diseases and cancer (Lu et al., 2017a).

Psychological stress reflects a subjective assessment of one's ability to cope with demands. People, their resources and power; When they perceive that they are inadequate to cope with a situation, they experience stress.

During pregnancy, the anxiety and related stress levels described by pregnant women are more common than non-pregnant women, even under normal conditions (Naurin et al., 2021). Before birth; Concerns about the baby's health continue throughout pregnancy. This situation, which has many common points universally; Of course, it manifests differently in different societies (Qiao, 2020). During pregnancy; Anxiety and stress in pregnant women lead to various negativities. At the beginning of these; preterm labor, intrauterine growth retardation, low birth weight. It is also known to be associated with adverse pregnancy outcomes such as early negative responses in postpartum neonates (Qiao, 2020). Some of these risks, by providing a calm and stress-free life during pregnancy; has been shown to decrease.

All countries of the world are facing the third coronavirus crisis in less than two decades. SARS-CoV emerged in 2002 (Zhong et al., 2003), followed by MERS in 2012 (Al-Ahdal, Al-Qahtani, & Rubino, 2012) and now nCoV (Wuhan) at the end of 2019.

Lessons learned from the days of SARS provide invaluable experiences today. At a remarkable speed; the genome of the Covid-19 virus was sequenced and presented to the public by the China Novel Coronavirus Research and Research Team (Kelvin & Rubino, 2020; Zhu et al., 2020).

Reciprocal flights from many parts of the world to each other have been cancelled. Many

countries have organized special trips to bring their citizens back to their countries from the quarantined areas. However, the steady increase in the number of cases, as well as epidemiologists, hospital staff; forced even the governments of powerful states (Kelvin & Rubino, 2020; Porcheddu, Serra, Kelvin, Kelvin, & Rubino, 2020).

The chain of transmission to humans was thought to be zoonotic, with a possible implication. Increasing case numbers and wet wildlife contact and contact investigations for many patients have created a strong case for human-to-human transmission (Kelvin & Rubino, 2020).

The World Health Organization's (WHO) declaration of a "pandemic" and the identification of third-generation human-to-human transmission have brought back vivid, painful memories of the days of SARS (Ihlen & Fredriksson, 2018; Naurin et al., 2021).

This is also the case in developing countries; especially women; in the whole society; led to a civil crisis with violence and social anxiety.

Anxiety levels of pregnant women were examined during the COVID-19 pandemic. Studies show that the coronavirus pandemic; demonstrated the potential to increase anxiety in the pregnant population (Gur et al., 2020; Ravaldi, Wilson, Ricca, Homer, & Vannacci, 2020). However, there were studies evaluating the pregnant population and anxiety prior to the COVID-19 pandemic. One study followed 200 Italian women and found that their feelings of anxiety increased significantly (Ravaldi et al., 2020).

Especially in developing countries; there is a fight against Covid-19 infection for themselves and their families, which most pregnant women have to cope with. Pregnant women are sensitive to stress and the added burden of the pandemic may unfortunately affect them negatively. Indeed, studies have shown high levels of Corona-induced stress and depression in pregnant women in developing countries.

Research Question and Objectives

In order to evaluate the mental health status of pregnant women in difficult days in Turkey; We evaluated the perceived stress levels of pregnant women. Perceived stress has not been measured and validated in this population, to our knowledge, in this respect in our country.

Methodology

Study Design and Participants

The sample of this descriptive cross-sectional study consisted of 254 pregnant from Trakya University Medical Faculty Obstetrics Clinic in the north west region of Turkey. The study was conducted from December 2019 to October 2021. The age range of the pregnant was 19- 41 years. Participants were given the freedom to terminate the survey anytime.

Participants who did not consent to participate in the study, and/or did not answer the questions of the study, were excluded from the study. Those who have had Covid-19 before themselves or their husbands were not included in our study. Pregnant women who were actively infected with Covid-19 were not included in the study.

Material and Methods

Two scales were used in our study. Participants were first evaluated with a personal information form. The scales we used in our study, Perceived Stress Scale-10 (PSS-10), Beck Anxiety Inventory (BAI) were used (Beck, Epstein, Brown, & Steer, 1988)(Leyfer, Ruberg, & Woodruff-Borden, 2006).

Perceived Stress Scale-10 (PSS-10): The Perceived Stress Scale (PSS) was developed by Cohen, Kamarck and Mermelstein (1983) (Cohen, Kamarck, & Mermelstein, 1983).

Consisting of 14 items in total, the PSS was designed to measure how stressful some situations in one's life are perceived. Participants evaluate each item on a 5-point Likert-type scale ranging from "Never (0)" to "Very often (4)". 7 of

the items with positive expressions are scored in reverse. In addition to its 14-item long form; There are two more forms of PSS as 10 and 4 items (Eskin, Harlak, Demirkıran, & Dereboy, 2013).

In this study, the PSS-10 scale with 10 questions with proven reliability and validity was applied. The scores of the PSS-10 range from 0 to 40. Getting a high score from the scale; indicates an excess of one's stress perception(Lu et al., 2017a).

PSS-10 has many advantages in terms of scale. Its main advantages are: 1) it only takes a few minutes and is easy to score; 2) items can be easily understood; 3) it is not limited to a specific situation and can be used for past or ongoing events; 4) can be used to study changes over time in response to stressful events; and 5) PSS-10 can be used as an outcome variable(Lu et al., 2017b).

Beck Anxiety Inventory (BAI): In this study, Beck Anxiety Inventory (BAI) was also used to determine anxiety and depression groups. The BAI, Beck et al. (1988) was developed by. It was determined that the scale had sufficient reliability and validity(Beck et al., 1988).

The purpose of the Beck Anxiety Inventory is screening rather than diagnosis. The questions in the Beck anxiety scale are related to anxiety symptoms. The person who answered the test answers the questions by choosing one of four options: "none, mild, moderate, serious". The marking of the options is done by considering the last week.

While scoring the Beck Anxiety Scale, attention is paid to the following: The answers given to the questions in the Beck anxiety scale have scores. None is 0 points, mild is 1 point, moderate is 2 points, and severe is 3 points. At the end of the test, the scores are added up.

1. Mild anxiety symptoms between 8-15 points,
2. Moderate anxiety symptoms between 16-25 points,
3. It is categorized as severe anxiety symptoms between 26-63 points.

Data sources

The sociodemographic characteristics, reproductive health and lifestyle behaviours, and knowledge about Covid-19 of the pregnant women were assessed using self-report forms. We received written informed consent from the pregnant women who participated voluntarily in the study.

Ethical Consideration

Approval for this study was obtained from Trakya University Medical Faculty Ethics Committee on Scientific Research and informed consents were obtained from all volunteers (Discussion No: E.381804).

Statistical Analysis

All statistical analyses were performed using the IBM SPSS (Statistical Package for the Social Sciences) 21.0 package program. The normal distribution assumption in the statistical analyses was investigated using the Shapiro-Wilk test.

Student's t-test was used for group comparisons. Relations between categorical variables were investigated using Pearson's Chi-square test. The relationship between the quantitative variables was examined using Pearson's correlation coefficient.

The data were evaluated with appropriate descriptive statistics. Mean and standard deviation were used for quantitative variables and percentage and frequency were used for qualitative variables as descriptive statistics. The level of significance was determined as 0.05 in all statistical analyses.

Results

This study demonstrated the knowledge level of pregnant women in a Turkish University Medical Faculty about Coronavirus infection and vaccines. Among the 254 subjects, 163 (64.17%) were in

third trimester and 91 (35.82%) were in second trimester. More third trimester pregnant women were willing to participate in the study than second trimester pregnant women.

Pregnant women who have routine pregnancy check-ups were selected for this study because they constitute a delicate group of society. Acknowledging or understanding the importance of Covid-19; It is easier for pregnant women who have routine pregnancy check-ups than those who do not go to regular obstetricians.

The sociodemographic characteristics of the pregnant women were evaluated (Table 1). When the participants are evaluated according to their residence in the village, province or district; There was no statistically significant difference for PSS-10 ($p=0.289$)(Table 1).

254 participants were included in our study. Number of participants in the second trimester was 163; and number of participants in the third trimester.

The mean of the pregnant women in the second trimester for PSS-10 was $27.50 (\pm 2.94)$. In terms of PSS-10; there was no statistically significant difference in the second and third trimesters ($p=0.877$).

It was checked whether there was a relationship between the age of the pregnant women and PSS-10. There was no statistically significant difference ($p=0.590$).

When evaluated in terms of the number of previous pregnancies, no statistically significant difference was observed for PSS-10 ($p=0.714$). The average of primigravida ($n=70$) is $27.52 (\pm 2.85)$; The average of those with second pregnancy ($n=113$) was $27.57 (\pm 2.75)$; The average of those with third pregnancy($n=40$) was $27.17 (\pm 3.76)$; Mean of those with 4th or more pregnancy ($n=31$) was $28.03 (\pm 0.17)$ (Table 1).

A statistical significance was found for PSS-10 according to the education level of pregnant women ($p=0.024$).

The school level at which they are the last distance; The PSS-10 score average of those at primary education level ($n=165$) was $27.92 (\pm 1.34)$.

The school level they graduated from; The mean score of pregnant women at secondary education level ($n = 80$) was $26.95 (\pm 4.14)$. The mean score of the pregnant women who graduated from university ($n = 9$) was $26.11 (\pm 5.66)$.

According to the number of pregnancy follow-ups, no statistical significance was found in relation to the PSS-10 ($p = 0.324$).

PSS-10 mean score of those who had pregnancy follow-up once in a month ($n = 108$) was $27.70 (\pm 2.30)$.

The average score of those ($n = 127$) who had pregnancy follow-up twice in a month during pregnancy, in state hospitals, was $27.35 (\pm 3.32)$.

The average score of those who had pregnancy follow-up three times in a month during pregnancy, ($n = 19$) was $28.05 (\pm 0.22)$.

With the systemic blood pressure values of pregnant women; the relationship between PSS-10 was examined. Those who stated that the systemic blood pressure was borderline high during pregnancy ($n = 29$); mean scale score was $27.41 (\pm 3.15)$. The mean score of those who used drugs for hypertension during pregnancy ($n = 69$) was $28.01 (\pm 0.12)$. The mean PSS-10 score of those who did not experience systemic hypertension during pregnancy ($n=156$) was $27.37 (\pm 3.29)$. There was no statistically significant difference ($p = 0.536$).

The characteristics of the participants were examined according to the socioeconomic level. Of 28 pregnant women whose families have a low income; mean PSS-10 score was $28.02 (\pm 0.55)$. The PSS-10 score of 23 pregnant women with good family income was $25.78 (\pm 5.85)$. Pregnant women who stated that they were at the middle income level; scale mean score ($n=203$); It was $27.69 (\pm 2.38)$. No statistical significance was found ($p = 0.437$).

When asked about the occupations in which they mostly make a living, 199 respondents were housewives. The mean PSS-10 score was $28.02 (\pm 0.02)$. The mean of 41 pregnant women working in permanent status as civil servants or workers was $28.02 (\pm 0.15)$. 14 participating tradesmen were self-employed and the average score they

got from the scale was $27.42 (\pm 3.15)$. Among the 254 subjects, 163 (64.17%) were in third trimester and 91 (35.82%) were in second trimester.

Looking at the values for The BAI; Third trimester mean scores were $24.38 (\pm 14.15)$; Second trimester mean scores were $21.49 (\pm 11.47)$ ($p = 0.296$). With the distribution of the participants according to their geographical regions; there was no significant relationship between both PSS-10 and the BAI ($p = 0.354$)(Table 1)..

The BAI averages were evaluated according to their previous pregnancies. BAI scale score of primigravid pregnant women was $21.28 (\pm 12.22)$; The BAI score of those with 2nd pregnancy is $24.26 (\pm 14.19)$; The score of those with a 3rd pregnancy is $23.20 (\pm 11.23)$; The score of those with 4th or more pregnancies was found to be $24.83 (\pm 14.77)$. It was observed that BAI scores did not make a significant difference in terms of the number of pregnancies ($p = 0.458$)(Table 1)..

There was no significant difference between the BAI scores and the last graduated school levels of the pregnant women ($p=0.939$).

Looking at the BAI average; A statistical significance was found according to the number of regular pregnancy follow-ups ($p = 0.023$). The BAI mean score of the pregnant women ($n = 108$) who did not have regular and careful follow-up of pregnancy was $23.53 (\pm 12.26)$. The average score of those who followed their routine pregnancy check-ups in state hospitals ($n = 127$) was $22.07 (\pm 13.37)$; The mean score of the pregnant women ($n = 19$) who had their pregnancy check-ups in private hospitals was $30.73 (\pm 16.53)$.

There was no significant relationship between the increase in the number of children they had before and The BAI ($p = 0.942$).

There was no significant relationship between the participants' history of high systemic blood pressure and The BAI ($p = 0.632$).

When looking at the relationship between The BAI and the socio-economic levels of pregnant women, no significant correlation was found ($p = 0.943$) (Table 1).

In our study, the scale scores of the participants were examined according to whether the family attitudes were traditional or modern. A

statistically significant difference was found in terms of family attitude and The BAI scores ($p=0.005$).

The mean BAI score of those with traditional family attitudes ($n = 147$) was $24.89 (\pm 13.58)$. The mean BAI score of those with moderate family attitudes ($n = 31$) was $23.19 (\pm 14.56)$. The mean BAI score of those with a modern family attitude ($n = 76$) was $20.40 (\pm 11.81)$.

Statistically significant difference; were found to be among those with traditional and modern families. When the participants were asked about

their profession, 199 people were housewives. The BAI mean score was $24.44 (\pm 13.64)$. The average of 41 participants working as civil servants or workers with permanent status was $18.00 (\pm 9.31)$. 14 people lived with tradesmen or self-employed and their mean scale score was $27.88 (\pm 17.73)$ ($p < 0.001$).

When the relationship between The BAI and the participants' ages was evaluated, no statistically significant relationship was found ($p=0.463$) (Table 1).

Table 1. Participants were first evaluated with two scale. The scales we used in our study, Perceived Stress Scale-10 (PSS-10), Beck Anxiety Inventory (BAI) were used (n=254)

Parameters	Scales	PSS-10		BAI	
	n (%)	Mean	P	Mean	p
Trimester					
Third	163 (64.17%)	27.50 ± 2.94	0.877	24.38 ± 14.15	0.296
Second	91 (35.82%)	27.64		21.49 ± 11.47	
Gravida					
Primigravid	70 (27.55%)	27.52 ± 2.85	0.714	21.28 ± 12.22	0.458
Second gravid	113 (44.48%)	27.57 ± 2.75		24.26 ± 14.19	
Third gravid	89 (35.03%)	27.17 ± 3.76		23.20 ± 11.23	
Fourth or more	31 (12.20%)	28.03 ± 0.17		24.83 ± 14.77	
The school level at which they are the last distance					
Primary Education	165	27.92 ± 1.34	0.024*	23.03 ± 13.12	0.939
Secondary Education	80	26.95 ± 4.14		23.86 ± 13.99	
University	9	26.11 ± 5.66		24.44 ± 12.28	
Pregnancy follow-ups					
Once in a month	108	27.70 ± 2.30	0.324	23.53 ± 12.26	0.023*
Twice in a month	127	27.35 ± 3.32		22.07 ± 13.37	
Three times in a month	19	28.05 ± 0.22		30.73 ± 16.53	
Systemic blood pressure values during pregnancy					
Borderline high	29	27.41 ± 3.15	0.536	24.13 ± 14.19	0.632
Who used drugs	69	28.01 ± 0.12		22.36 ± 13.75	
who did not experience hypertension	156	27.37 ± 3.29		23.63 ± 11.89	
Socioeconomic level					
Low income	28	28.00 ± 0.55	0.437	23.45 ± 13.72	0.943
Middle income	203	27.69 ± 2.38		21.85 ± 9.75	
Good income	23	25.78 ± 5.85		24.21 ± 13.65	
When asked about the professions of pregnant women					
Housewives	199	28.00 ± 0.02	-	24.44 ± 13.64	<0.001*
Working in permanent status	41	28.02 ± 0.15		18.00 ± 9.31	
Self-employed	14	27.42 ± 3.15		27.88 ± 17.73	
The participants were examined according to whether the family attitudes were traditional or modern					
Traditional family	147	27.43 ± 3.09	0.437	24.89 ± 13.58	0.005*
Moderate family	31	27.54 ± 3.09		23.29 ± 14.56	
Modern family	76	27.78 ± 1.95		20.40 ± 11.81	

**Perceived Stress Scale-10 (PSS-10), Beck Anxiety Inventory (BAI)

There was no statistical significance between PSS-10 and the BAI ($p = 0.401$).

In our study; concerns of pregnant women for their own health, their unborn baby (children) and the postpartum period were significantly higher during the COVID-19 pandemic. In addition, the COVID-19 pandemic has demonstrated the need for optimal community use of maternal and child health services. As the time of birth approached, the feeling of pregnant women was increasing.

Table 2. Evaluation of the scores obtained from the answers given by the participant pregnant women in terms of two different scale scores (n=254)

Scale	BAI	SFI
	p	p
PSS-10	0.401	0.364
BAI	-	<0.001*

**Perceived Stress Scale-10 (PSS-10), Beck Anxiety Inventory (BAI)

These results are valid for Turkey, where confidence in healthcare services has increased during the pandemic. Some subgroups were more concerned about their health than the average pre-pandemic participant. Being at a low socioeconomic level and having a low education level caused more stress in pregnant women. This supports previous studies that concluded that certain groups were particularly exposed to feelings of anxiety during pregnancy (Lebel, MacKinnon, Bagshawe, Tomfohr-Madsen, & Giesbrecht, 2020). During the pandemic, the only group of pregnant women who were more concerned about their own health were women with a university education level and above. Pandemic among pregnant women, those with low confidence in health services and those with socioeconomic difficulties; led to higher levels of concern for his own health.

Limitations

Our study is limited by the small sample size; future studies should evaluate this issue using larger sample sizes.

Discussion

In our study, pregnant women who applied to a University Medical Faculty hospital in Turkey; The perceived stress of pregnant women against the pandemic was evaluated.

Our study was carried out with volunteer pregnant women who came to the obstetrics outpatient clinic in a university hospital in the northwest of Turkey for routine control. It revealed high levels of perceived stress in pregnant women, which correlated with anxiety and depression.

Studies have shown that PSS-10 is significantly and moderately associated with anxiety and depression in participants

Other studies, PSS-10; It has been shown to have concurrent validity with the Beck Depression Inventory (Lu et al., 2017b; Wongpakaran & Wongpakaran, 2010). In our study, too; PSS-10 showed a positive correlation with the BAI in the same direction.

The second important result of this study is in the context of a target-oriented change; It is important in developing the resilience of women who will become mothers against acute situations.

It is necessary to integrate solution-oriented thinking into basic counseling in the education of pregnant women. This model; recommends that pregnant women should be careful about creating a solution-oriented thinking ability instead of spending too much time on problem analysis. Indeed, past research has shown that problem-focused coaching approaches improve well-being and facilitate goal progression; proved to be much less effective than solution-focused approaches (Qiao, 2020).

Many issues regarding the stress level of pregnant women and coping methods have been discussed many times in the literature. However, our current research has evaluated women who may encounter infections in a targeted context.

Our work; even women in society, with new pandemics; against the changing time; It tries to predict the attitudes they will take, whether they are pregnant or not. The women; It is seen that they should adopt an approach that jointly

develops self-regulation and solution. Birth and having a baby of your own are among the most important events in a woman's life. Naturally, a certain level of concern for the protection of the health of the baby and the mother is seen in all families. However, the most important thing is not to reflect this concern to the pregnant woman. As evidenced by our results, the anxiety levels of pregnant women were high after the onset of the pandemic.

Pregnant women may encounter many sources of stress. All of these can lead to significant psychological dysfunctions. The changing environment, lifestyle changes, material and moral burdens and relationships between spouses are at the forefront in the lives of pregnant women. Parameters affecting pregnant women; is distributed over a wide range (Lu et al., 2017b).

Adding the pandemic process on top of the unique stress of pregnancy; showed the high level of stress of the participants. It is the pandemic process that brings together all these factors (i.e. personal and social changes) that require change and adaptation to life (Naurin et al., 2021). Pregnant women were concerned about both maternal and fetal health. Pandemic; it is a major stressful life event that increases the risk of long-term health deterioration for postpartum women, newborns and even fathers of babies. This is a situation that needs attention at the national and international level.

In maternal or postpartum periods; extra clinical attention should be given to this generation of women, babies, children and partners in medical care visits.

In national and international health events in the field of women's health, diseases and obstetrics; In the context of change, solution-oriented thinking should be provided to facilitate its development (Qiao, 2020).

Developing countries may be the weakest part of the chain to stop the spread of current and future epidemics.

The disease is spreading rapidly, especially in countries where there is insufficient infrastructure to identify the virus using real-time PCR diagnostic tools and public health infrastructure

to implement and quarantine (Kelvin & Rubino, 2020). In order to prevent the deaths of millions of people, priority and adequate investments should be made in these countries.

For satisfactory psychometric results of Turkish pregnant women; we advocate that PSS-10 should be widely applied to women receiving health services in other regions of our country.

However, due to differences in cultural levels and social, economic and educational differences between regions; Additional studies should be performed in different geographic regions to confirm the generalizability of our results.

Conclusion

As a result, we evaluated the stress levels of pregnant women due to Covid-19 in the Turkish cultural context with PSS -10. In addition, in women during pregnancy; We identified high levels of perceived stress due to Covid-19 in situations associated with anxiety and depression.

All of the participants in our study were pregnant women who applied to the 3rd level health institution. But; Studies should also be conducted with pregnant women living in different pregnancy clinics, in different geographies and at different sociocultural levels. Thus, a positive contribution will be made to increase pregnant and maternal health, which is an important area of public health.

Different levels and types of stress can be experienced by women before, during and after pregnancy. This requires different assessments. For example, pregnant women of different intellectual levels may have to cope with psychological stress at different heights due to the accumulated Corona burden and media pressures.

Second, construct validity was limited to reported measure comparisons. Third, we did not assess the discriminant validity of the PSS-10, BAI, in this study. Therefore, in our country and even in the world; These questions must be addressed in various populations. To improve the psychometric quality of the results, objective measures should be applied.

The results of this study showed that; at the beginning of the social units to be targeted for education programs related to COVID-19; pregnant or reproductive age women. Better quality information is needed on a range of questions to be answered, including the mode of transmission of the virus, symptoms, the incubation period and reinfection and vaccination. For this reason, we think that it is necessary to carry out a well-planned, high-quality and structured training program in order to increase the level of social awareness and contribute to better process management in pregnant women.

During the pandemic process, pregnant women and women planning a pregnancy; must follow the instructions of scientists. Avoid close contact with others, especially those who are immunocompromised. Also, frequent hand washing and strict personal hygiene measures are necessary to control virus transmission. This study based on pregnant women; It can provide basic data to the literature for preventive measures in case of future outbreaks. Future studies may investigate important parameters related to SARS-CoV-2 infection in preconception planning. We also suggest investigating the relationship between awareness level and health status of reproductive age, infected and uninfected women.

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