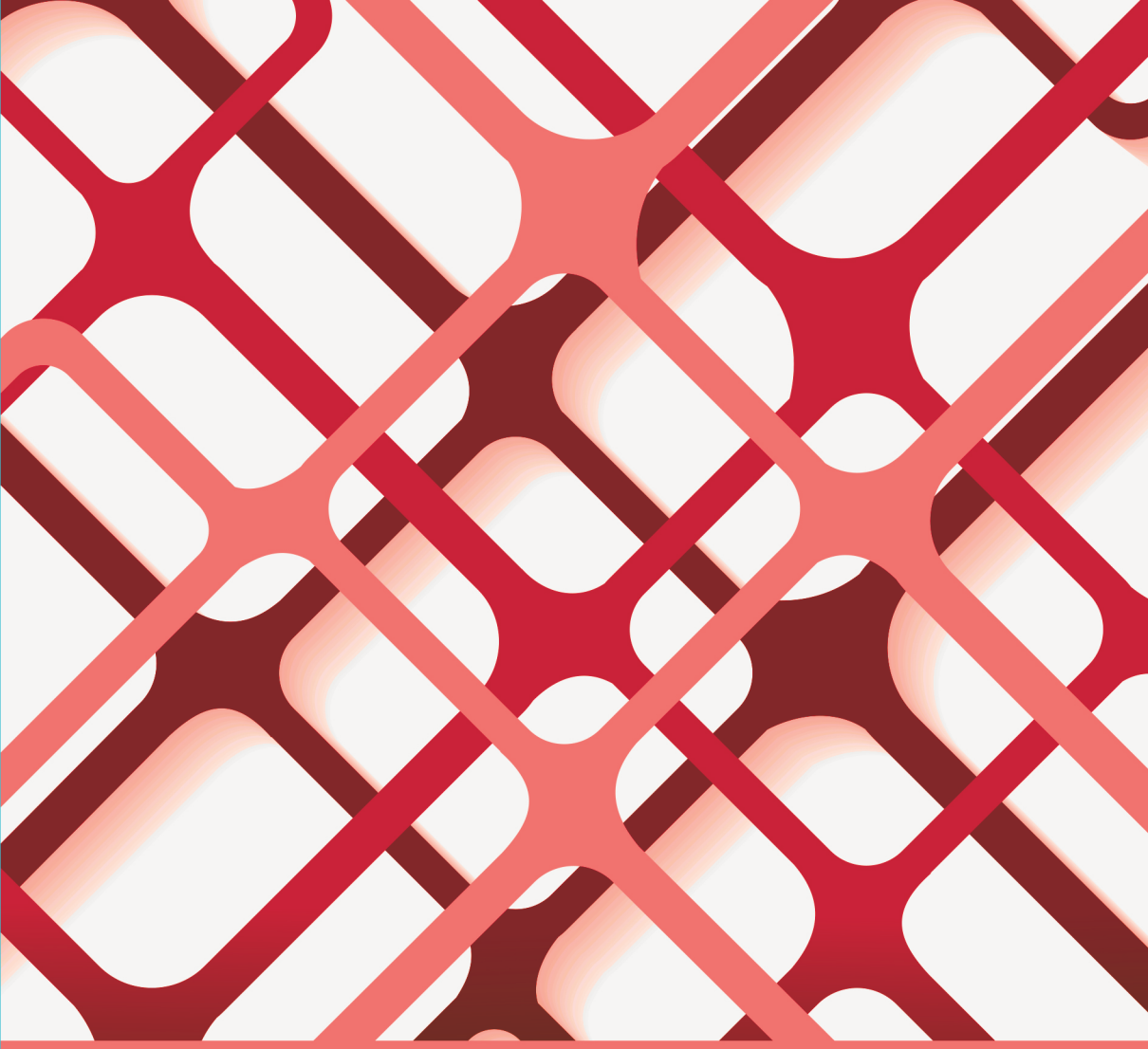

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CONTENTS

Chapter 1

EFFECTS OF COVID-19 ON EDUCATION SYSTEMS OF THE COUNTRIES AND ATTITUDES AND PERCEPTIONS OF THE STUDENTS TOWARD ONLINE EDUCATION

Ebubekir BOZAVLI[1]

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Introduction

The Covid-19 pandemic, which first appeared in Wuhan, China in December 2019 and spread to all countries in the world in a short time with its contagious feature, caused millions of people to become sick and thousands of people to die and still continues its social, cultural, economic effect etc. has turned into a deadly pandemic that paralyzes daily life. One of the areas most affected by the pandemic is education. Education institutes across all levels (pre-primary, primary, secondary and tertiary) have closed in 188 countries across the globe, impacting over 91 % of the world's student population (Longhurst and others, 2020). Only 1 % of institutions is open as usual, no special measures in place for Covid-19 -it is Higher Education Institution (HEI) in Burundi - 10 % of institutions are open as usual, but containment measures have been put in place to avoid spread of Covid-19; 30 % of institutions is partially open, but there are major disruption; 59 % of all campus activities have stopped and the institution is completely closed (Simakhova and Stukalo, 2020). Educational institutions around the world have had to move from face-to-face to online teaching. This obligation, in a sense, characterizes the transition from the traditional teaching to a new alternative teaching method. This also means transformation of a society where the school exists into that where there is no physically school. Covid-19 pandemic left the people with the idea of a society without school, which pundits like John Taylor Gatto (2012), Ivan Illıch (1983), Alexander Sutherland Neill (1990), John Holt (How Children Fail, 1964), Everett Reimer (School is Dead, 1971) support. Gatto and Illich, who object to the world public education system and claim that the school system leads to a monopoly in the distribution of opportunities instead of giving people equal chances, believe that de-schooling will lead to the liberation of human beings. Undoubtedly, the pioneers of this trend did not think that the whole world would resort to online education in the case of the pandemic for homeschooling and similar models they placed in front of the school.

Online learning is widely used but with a variety of meanings. First, online learning refers to learning that is mediated by the Internet. It is wider than "networked learning"; while networked learning focuses on human-human connections, online learning lacks such specificity. It is narrower than "eLearning" and "digital education" which include the full range of digital tools and resources, not just the Internet and a focus on digital competences development (Hidayati and Saputra, 2020). According to Ally (2008) online learning include e-learning, Internet learning, distributed learning, networked learning, tele-learning, virtual learning, computer-assisted learning, web-based learning, and distance learning. All of these terms imply that the learner is at a distance from the tutor

or instructor, that the learner uses some form of technology (usually a computer) to access the learning materials, that the learner uses technology to interact with the tutor or instructor and with other learners, and that some form of support is provided to learners.

Literature Review

On February 11, 2020, the World Health Organisation (WHO) proposed an official name of the virus as Covid-19, an acronym for Coronavirus disease 2019. It was first identified in Wuhan, China on December 31, 2019 (Jena, 2020). Coronavirus is an enveloped and single-stranded ribonucleic acid named for its solar corona-like appearance due to 9–12-nm-long surface spikes. Common symptoms include fever, cough, myalgia, and fatigue (Zu et al.,2020). It has been found that thousands of researchers from different nations have contributed significantly to the literature with numerous scientific publications on Covid-19, which affects the whole world. In addition, new publications are added every day. Publications mainly cover the definition, characteristics, symptoms, course of the disease, medication and treatment, etc. However, researches are also being conducted on its different effects in society. Most of the research in the field of education is on online (distance) education.

Distance education is not a new way of teaching. It can be traced back to as early as 18th century. Its evolution and progression over the last 300 years run parallel with innovations in communications technology and distance learning continues to grow in popularity. Distance education was common beginning in the late 1800s, but its rapid growth began in the late 1900s with the advance of the online technical revolution (Kentnor, 2015). Distance education, which started by correspondence with letters, has been realized through radio, television and teleconferencing with the development of audio-visual tools, and in recent years, it has been transformed into an online form with an Internet-Web-based method together with information technologies. (Bozkurt, 2017). The distance education, which is used for supportive purposes to reinforce the education given at school, has become a mandatory system during the pandemic (İşman, 2011). For this purpose, Covid-19 has turned these types of studies on distance education into practice, which have been previously conducted and remained mostly in theory because both institutions and learners will probably soon acquire some new behaviors as a result of the effects of the pandemic (Dhawan, 2020; Nguyen et al., 2020, Teras et al., 2020, Unesco-Iesalc, 2020**)** Will Covid-19 change the outlook of capitalization as a result of these acquired behaviors eventually? Will online institutions or systems replace offline education institutions? Will educational institutions abandon offline education on the grounds that it is more profitable and turn to online teaching entirely? Will digitalization be the winner of this chaos? On the

other hand, will learners acquire autonomous learning competencies? The winner will undoubtedly determine the course of Covid-19. If the pandemic continues for a long time around the world, it will be inevitable that we will experience changes in the education.

Significance Of The Study

The research aims to determine the general effect of Covid-19 on the education systems of countries and the perceptions and attitudes of students towards online learning. Undoubtedly, one of the areas most affected by Covid-19 worldwide is education. With the closure of schools, millions of students were deprived of face-to-face education and suddenly found themselves in a new learning model they were not used to before. They had to change their learning habits as homes turned into schools and rooms into classrooms. As the duration of pandemic extends, it will be inevitable for students to display different attitudes and behaviors in the face of the new learning model. Therefore, countries will have to reconsider and even modernize their education systems, taking into account students' perceptions on online teaching. Likewise, as Covid-19 affects the whole world with its contagious feature, the experiences of nations in this process will undoubtedly affect the post-epidemic teaching strategies of the whole world. In this context, the current research is important in terms of synthesizing the experiences of countries in the field of online education and drawing a general teaching perspective.

The research is shaped around the following purposes.

Objectives

- To examine the effects of Covid-19 on the education systems of countries,

- To determine students' perceptions and attitudes towards online education,

- To draw a general perspective on the problems encountered in online education,

- To make an assessment on the future perspective of teaching.

Methods

The research is based on literature and document analysis. Document analysis is a qualitative research method used to diligently and systematically analyze the content of written documents. Document analysis is a systematic method used to examine and evaluate all documents, both printed and electronic materials. Like other methods used in qualitative research, document analysis requires the analysis and interpretation of data in order to make sense, to create an understanding of

the relevant subject, and to develop empirical knowledge (Kıral, 2020). The researches were collected by scanning method, conducted by researchers from different countries and published in journals indexed in international databases such as SSCI, ESCI, ERIC etc . The data were analyzed after they were classified by thematic method and interpreted with descriptive analysis (Giroux and Tremblay, 2002).

The data on the countries and regions where the research has been conducted are given in Table 1; information related to the journals in which the sources obtained as a result of the scanning is given in Table 2 while information about the education levels that constitute the subject of the research is given in Table 3.

Table 1 shows the countries and regions on which research has been conducted on online education during the pandemic. Due to the limitation of the article, 16 countries were included in the study. 2 of the countries are located in Africa, 8 in Asia and 4 in Europe. The other two countries are those whose lands are in both Europe and Asia.

Regions	Countries
African region	Nigeria, Ghana,
South East Asia region	India, Indonesia, Vietnam
European/Asia region	Turkey, Georgia
European region	Ukraine, United Kingdom, Spain, Greece
South Asia	Pakistan
East Asia	South Korea, China
Asia	Yemen, Egypt

Table 1. Summary of countries

Table 2 shows the information about the resources included in the study. 23 articles on online education during the pandemic period have been published in different international journals in 2020. 8 of the journals are indexed by Eric (Education Resources Information Center), 3 by SSCI (Social Sciences Citation Index), 1 by ESCI (Emerging Sources Citation Index), 3 by Ulakbim TR and 8 by other related databases. 3 articles on Turkey and India, 2 on Ghana, China, Greece, 1 study on each of the other countries. Studies on Turkey are related with “Higher Education, Vocational High School and Secondary School” levels while the ones India, China, Greece are concerned with “Higher Education” level. Studies on Ghana include “Higher Education, High School” levels.

Source Type	Indexing and Abstracting	Journals published research paper	Grade of Education	Country
Articles	Other related databases	Electronic Research Journal of Social Sciences and Humanities	Higher Institutions	Nigeria
	ERIC	Universal Journal of Educational Research	Higher Institutions	Indonesia
	Other related databases	Journal of Pedagogical Sociology and Psychology	Higher Institutions	Pakistan
	ESCI	Data in Brief	Higher Institutions	Vietnam
	Other related databases	Asian Journal of Education and Social Studies	High School	Ghana
	Other related databases	International Orthopaedics	Higher Institutions	South Korea
	ERIC	Universal Journal of Educational Research	Higher Institutions	Ukraine
	Ulakbim TR	Turkish Studies	Vocational High School	Turkey
	ERIC	Pedagogical Research	Private School	Georgia
	SSCI	Sustainability	Higher Institutions	Egypt
	Other related databases	International Journal of Advanced Education and Research	Higher Institutions	India
	SSCI	Children and Youth Services Review	Higher Institutions	India
	SSCI	Children and Youth Services Review	Higher Institutions	China
	Ulakbim TR	Turkish Studies	Secondary School	Turkey
	ERIC	European Journal of Education Studies	Higher Institutions	Greece
	SCI-E, ERIC	Anatomical Sciences Education	Higher Institutions	United Kingdom
	Other related databases	Human Behavior and Emerging Technologies	Higher Institutions	China
	ERIC	European Journal of Education Studies	Higher Institutions	Greece
	Other related databases	Plos One	Higher Institutions	Spain
	Other related databases	International Journal of Current Research	Higher Institutions	India
	ERIC	European Journal of Education Studies	Higher Institutions	Yemen
	Ulakbim TR	Turkish Studies	Higher Institutions	Turkey
	ERIC	European Journal of Education Studies	Higher Institutions	Ghana

Table 2. Sources used for findings

As seen in Table 3, 19 of online teaching researches during the pandemic are related to higher education, one to vocational high school, one to high school, one secondary school, and one to private school level.

Higher Institutions	19
High school	1
Vocational high school	1
Private School	1
Secondary School	1

TABLE 3. Number of research papers

Finding

The findings are organized by continent and presented below.

General Conception	Strength	Weakness	Continent
Technology		Lack of effective technology,	Asia
	Creating alternatives approach, use of social media for online learning	Lack of technological platforms, formal online learning management systems	Africa
	Upskilling in new technologies, use of multimedia and various	Lack of expertise in the new technologies	Europe
	Live transmission of lesson through Tv channel	Lack of expertise	Europe/Asia
Online Education	Promote and authorize online learning	Lack of digital literacy training, ineffective learning system	Asia
		Creating teaching and learning gap	Africa
	Additional autonomous activities and strategies	Lack of experience regarding this type of education, time constraints	Europe
		Lack of experience, time constraints	Europe/Asia
Geographic Infrastructure		Inadequate network factors, weak technological infrastructure	Asia
		Poor internet services	Africa
	Adequate network system		Europe
			Europe/Asia

Feeling of learning online		Lack of motivation	Asia
			Africa
	Time and Money saved on commute	Difficulty in paying attention to the lesson	Europe
		Lack of motivation	Europe/Asia
Student satisfaction with online learning		Unsatisfactory learning	Asia
			Africa
	Satisfactory, improvement of learning performance		Europe
	Nearly satisfied		Europe-Asia
Learning programs		Lack of adequate curriculum	Asia
			Africa
	New learning methodology		Europe
			Europe/Asia
Skills of communication		Lack of socialization, lack of proper interaction with instructors	Asia
			Africa
		Lack of interaction in classroom	Europe
		Lack of interaction	Europe/Asia
General Education Policy		Absence of strategic planning, non-compulsory method, limited resources and funds, financial dysfunctional	Asia
		Loss of manpower, cut in budget, reduction in international education	Africa
	Incorporation of blended learning in future curriculum		Europe
			Europe/Asia

During the pandemic, the weakness in the "Asia and Africa" continents in online education mostly emerges in the field of technology and financial support. In "Europe and Europe-Asia" countries, the weakness shows itself in the lack of experience with this new technology, motivation problems in online lessons, and inadequate interaction between student/student and student/teacher. The strengths of online teaching, albeit limited, can be considered as the emergence of new alternative teaching approaches and strategies, shaping a possible new system that can rival face-to-face teaching or be used with face-to-face teaching in the future.

Perception concepts	Distance Learning	Face-to-face education	Continents
Learning	Ineffective	Effective	
Interaction/Socialization	Weak	Strong	
Motivation	Insufficient	Acceptable	All
Educational Inequality	Excessive	More than expected	
Study System	Irregular	Regular	

Table 4. *Perceptions of the students on distance learning*

As seen in Table 4, learners' perceptions on distance education are contextualized in terms of learning, interaction / socialization, motivation, educational inequality and working system. Students think that learning in distance education is not effective, socialization is weak, motivation is not sufficient. In addition, students believe that distance education increases the inequality of opportunity in education and disorganizes their study systems. These considerations do not differ at continental level.

Discussion

The inequality of opportunity that emerges in face-to-face teaching is much more pronounced in online education in digital environment. The concept of "equality" is emphasized in the fundamental principles of the National Education of the countries and in the Universal Declaration of Human Rights. Although the principle of equality has adopted the idea that "every citizen has the right to education and training without any discrimination, and no individual, family or group can be given privileges in education", in reality the existence of inequality in education cannot be denied due to many factors. This inequality is often considered on a socio-economic basis. Educational inequalities are evaluated from two aspects: students' level of achievement and situation of population benefiting from education. (Kılıç, 2014). Although the students study at the same time and for the same duration, their achievement levels are different from each other. On the other hand, it is possible to find many individuals who have never attended school or who have dropped out of school. Undoubtedly, this is a phenomenon that exists in every developed, developing or underdeveloped societies even though the extent is different. The inequality gap seen in face-to-face teaching across the world deepens in online education, especially against underdeveloped countries. For example, Yemen is suffering from the speed of internet connection with (0.38 MBPS) which put the country at 207th in the World ranking as the slowest internet connection. In addition, there is relatively low number of internet users 7,88 million which represents 27% of the total population. As a result, some scholars express alarm regarding online education.

"The progression of the existing efforts to move to online learning in view of the underdeveloped infrastructure and the lack of training needed for the parties in the learning process does not gain scientifically and academically (Baadani and Abbas, 2020). Similarly, the problems are also seen in Egypt. Universities in Egypt are suffering from a lack of technological platforms and formal online learning managements systems (LMS) for communication with students or with their faculty members. Various universities in Egypt, for instance, have encouraged their faculty members and their students to use free communication platforms, e.g., google classroom, zoom, social media, e.g., facebook, whatsapp and youtube (Sobaih et al., 2020, Thus, thanks to these platforms, which are easier to access, teachers and students will be able to communicate in lessons. On the other hand, in South Korea, which is on the same continent with Yemen, "online based teaching methods including webinar and online symposium, telecasting of recorded lectures were increased during the Covid-19 pandemic (Chang et al., 2020). This difference is directly proportional to the development levels of the countries. South Korea ranks 10th in 2020 in the ranking of the world's largest economies and 22nd in the ranking of developed countries as of 2018. According to the GNI per capita, South Korea ranks 26th among 54 countries in the high-income group. Egypt is in the low-income group; Yemen is in the very low-income group. According to World Bank data (Worldbank), annual GNI is 30,620 dollars in South Korea, 2,800 dollars in Egypt and 1,460 dollars in Yemen. Despite the pandemic, online education, online teaching technology and sufficient technological infrastructure in European countries or Asian countries with relatively better economies, learning success is affected by "affectivity". Classroom socialization and interaction among learners or with teachers do not occur as in face-to-face teaching. Lack of interaction causes low motivation in learners. In a study conducted with more than 10,000 parents and students (Karsenty, et al., 2020), 4830 parents stated that their kids' motivation decreased in online classes and that they almost sat in front of the screen and negotiated with them to listen to their teachers. According to the parents, this situation is caused by the lack of face-to-face communication.

This research reveals that some of the less developed and developing countries experience technological problems, and developed countries experience problems in terms of online learning mentality. There is not yet an alternative education system that can replace the school for the whole world. In fact, in the second wave of Covid-19, unlike the first wave, countries such as France and Germany preferred to keep the school open despite restrictions in many areas of social life. This can be considered as an indication that distance learning is not successful compared to face-

to-face education. In addition, this situation invalidates the idea of de-schooled society, which some educators such as Illich (1983) and Gatto (2012) advocated.

It seems that after the pandemic, two different educational approaches will take place around the world. The first understanding is about technology. Countries that do not have online education technology will seek to integrate this system into their existing education as much as possible. The second approach is related to literacy of technology. Countries with technological infrastructure will try to make use of online education and increase success in teaching effectively.

Conclusion

In online teaching conducted in different continents during the Covid-19 outbreak, the weaknesses are more evident than the strengths. Weaknesses in the evaluation of online education at the continental level within the framework of eight general concepts in Asian countries are classified as "lack of effective technology, lack of digital literacy training, inadequate network factors, weak technological infrastructure, poor internet service, lack of motivation, absence of strategic planning, limited resources and funds, financial dysfunctional". Weaknesses in African countries are "lack of technological platforms, formal online learning management systems, learning gaps in education, loss of manpower, cut in budget, reduction in international education, financial problems and difficulties". On the other hand, European and Eurasian countries generally experience "lack of expertise in the new technologies, time constraints, difficulty in paying attention to the lesson, lack of interaction in classroom" in online education. The strengths of online education in European countries are "adequate network system, time and money saved on commute, improvement of learning performance, new learning methodology, incorporation of blended learning and additional autonomous activities and strategies" while in Europe- Asia countries they are "live transmission of lesson through TV channel and adequate online learning system". In the majority of Asian countries, especially in almost all African countries, online teaching technology has not yet been integrated into education systems, so the strengths of online teaching are negligible. Based on these determinations, it can be suggested that online education during the pandemic was affected by financial problems in Asia and Africa and by the relationship of affectivity in learning in other continents.

In addition, whether the countries have technological infrastructure or not, distance learning carried out throughout the Covid-19 pandemic reveals that students around the world have not yet reached the required competencies. First, students have great trouble in being motived in the

lessons in distance education and they cannot communicate face-to-face required for effective learning. Communication of students between themselves and with the teacher cannot reach a sufficient level. Researches show that students generally develop a positive attitude towards distance education, but still prefer school. Students believe that face-to-face education is more beneficial than distance learning and that face-to-face interaction is essential for good education.

The perceptions of students on distance learning can be listed as follows:

- At school, students learn better when face to face, under the supervision of the teacher and with feedback. Distance education cannot provide the same effect.

- Distance learning affects socialization.

- Lack of teacher in distance education is deeply felt.

- Distance education affects studying and causes laziness.

- Distance education incites learning inequality.

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Chapter 2

EARLY INTERVENTION AND EARLY CHILDHOOD SPECIAL EDUCATION: HOW TO ESTABLISH GOOD PRACTICES?

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Introduction

Early intervention (EI) and early childhood special education (ECSE) for the children with special educational needs has been strongly recommended. Every child, especially at a younger age, is determined by its biology and the environmental factors that surround it (Ramo-Akgün, 2021). Professionals in scientific, medical, psychological, and educational fields have reported the importance of the age between birth and the age of five for learning. The most precious time is before the child goes to school because the development of the brain is the most intense then (Akgün &Girgin, 2019). If the child is having any risk of disability, the importance of these early years is even more critical (Lerner, Lowenthal & Egan, 2003). Evidence suggests that the earlier the onset of intervention, the greater likelihood of an improved developmental trajectory (Çolak et al, 2020). It is argued that early intervention as well as the early childhood education is more costing and time efficient than a "wait and see" approach (Koegel, Koegel, Ashbaugh & Bradshaw, 2014).

Early childhood interventions are implemented for children from birth to the age of three of five who are living with developmental delays or disabilities, have low birth weight, are malnourished, or have chronic illnesses (Çolak, 2021). In order to develop their existing potential, activities for developing children's motor and cognitive skills are extremely important from early childhood (Ramo-Akgün, 2020). The foundation of early childhood interventions is having a team for every child's individual needs. In the most effective models, the early interventionist is supported by professionals from other disciplines and takes a leading role. The special educator and the early interventionist work with the family within an ecological context.

1. Current trends regarding policy and practice in Early Childhood Special Education and Early Intervention in the US

1.1. Current trends in ECSE

The goal of early childhood special education (ECSE) is to use the most positive practices to enhance the impacts for young children and infants at risk for delays and their families (Odom, 2009). In the past two decades, fundamental area for researchers in early childhood have become the evidence-based practices (EBP) (Buysse, Wesley, Snyder, & Winton, 2006).

In Virginia and in many other states in the US there is a flexibility model. In early childhood classrooms, K and 1, it is contracted by hours of service, that the student receives support by a special education teacher. So, depending on how many hours of service a student receives it can look

like the special educator is coming into the classroom and supporting and being around the whole period during the day or it could be that the special education teacher comes in and takes small groups with her/him to work on accommodating or supporting students in that perspective.

"If they are found eligible and they need the intensity of a school-based program, then they will be placed in the public school. If they are found eligible for service but they don't need the intensity of a school-based program, then they could receive resource services in wherever they are going (home…). And VA makes it a little bit grayer because in VA we start serving twos in the schools. So, if the child is two years old and is found eligible for part B services, they can go into the school system. So, two to three is a grey area in VA. In some states is cut and dry-it doesn't start until three but in VA, parents really have a choice." – ECSE director

Research has shown that the current trend is inclusion although early childhood special education varies across states.

"There's also state differences regarding the delivery of spec ed services so although part of spec ed law is placing children in their least restrictive environment or the environment which most closely resembles their peers who are typically developing we see more inclusion in some states than others, so that's still an area where we have a lot of work to do." – ECSE director

Students who are ready and have certain abilities are included in the programs of the regular education. Part-time placements, peer tutors, special ed teachers, resource teachers and many other opportunities are available, all with the aim to meet the child's individual needs. While separated options still exist, and are visited only by students needing those settings until they develop knowledge, grow, and acquire skills to succeed in more challenging environments. In the states there are placement variants so that educational setting can be obtained for any student appropriate to his/her individual needs. Students are moving along these variants or a so-called continuum, constantly aiming for the most adequate education setting.

"I feel like inclusion is a pendulum, so depending where we are at any given time, the focus is more on inclusion or the focus is more on exclusion and pull-outs. Right now, I feel that the current trend is on inclusion and having more children supported in the general education environment when at all possible." – ECSE provider

Some professionals who work in the field of inclusion believe that it shouldn't be at the discretion of states to make educational choices and that the federal government shouldn't be hesitant to define inclusive practices as a overruling philosophy.

"So, the current trend is inclusion, but it is not happening. Because it's a choice." – TTAC expert

The overarching idea regarding Early Childhood Inclusive Education is that inclusion should be mindful and set on evidence-based research and practices. Far more important is the continuum of services.

"Inclusion needs to be mindful. Not, just let's put all kids in gen ed. Some kids will not benefit from it, some kids will benefit from a pull out much more than they will in the gen ed. Some will benefit most from a self-contained classroom where they only have PE and music with another class. Obviously, most kids benefit from inclusion, but not everybody. You really have to be mindful in order to work. Then of course you need resources." – SPED scholar

1.2. Current trends in early intervention

Since the 1990s in the US (Odom & Wolery, 2003) and afterwards in Europe, an international approach has been developed, an approach that aims for family-centered practices (Espe-Sherwindt, 2008; Soriano & Kyriazopou-lou, 2010). Changes in the roles of practitioners and the families of children with developmental delays are enabled by this approach, in the way how practitioners use their knowledge and skills, and how practitioners pose the decisions, to families, regarding the outcomes that needed to be achieved (García-Sánchez, Escorcia-Mora, Sánchez-López, Orcajada & Hernández-Pérez, 2014). In the view of this family-centered practice, practitioners see families as partners that are equal and collaborators as well in order to get endorsement and enhance their child's development. According the needs of the child and the family the intervention is always individualized, as well as flexible and responsive. The early interventionists do not identify the needs, rather families and practitioners that are working together. The working goals are the involvement of the family involvement and the partnership with the interventionists (Escorcia-Mora et. all, 2016).

"As far as methods of delivery go, they are very naturalistic, you go into children's homes, community settings. If the children spend a lot of time at the park, then we know that that's where services should take place. It is a family centered model so IFSPs include family outcomes and goals as well as child outcomes."- EI expert

1.3. More inclusive opportunities within programs for low-income families

Since the middle of the 1960s, early education for some percentage of young children in this country who were living in poverty has been provided by the Head Start program. In 1972, in order to be available for children with disabilities, the Head Start program was required to set aside

10% of the Head Start finances (Smith, 2000).

"You can access Head Start based on your income and but now part of the law regarding head start, is that at least 10% of the children have to have an identified disability so we are seeing more inclusion within head start so when we don't see universal preschool globally head start has actually been an avenue for more inclusion, because of the 10% requirement." – EI scholar

1.4. Universal preschool opportunities

There is an international interest in enabling Universal preschool education in many countries. Lasser and Fite (2011) believe that when we are addressing educational challenges in the new century, the universal preschool education (as free preschool education available and attainable for all children) is the finest approach. The universal preschool education requires high quality and high quality teachers.

"Many state have implemented what could be called globally -universal preschool and different states call it by different names but what universal preschool is a state funded preschool for children who aren't yet in kindergarten, and what that looks like across states varies because its state implemented so for example there are states who do not have a state funded preschool program but there are several states that do, and what that means that children whether they have a disability or not, children can go to preschool for free." – ECSE director

2. Methods of service delivery for infants and toddlers with disabilities and their families (key aspects of service coordination, consultation, family-centered services and interdisciplinary collaboration)

Using collaborative team process in giving EI services is a recommended practice (Bruder, 2010). A key component of early intervention that is family-oriented, which means the family is equal team member and integrated into aspects of planning, assessment, and intervention.

2.1. Transdisciplinary approach vs. multidisciplinary approach

The transdisciplinary (TD) teams implement wide collaboration and they ask the team members to understand their subjective capabilities, have expertise in different areas, and a desire to work collectively in providing EI services (Boyer&Thompson, 2014). The multidisciplinary model is defined as all providers of early intervention maintain their independence in the assessment and planning of the treatment, but are sharing information of their ideas or frameworks (Stepans, Thompson,

& Buchanan 2002; Woodruff & McGonigel, 1988). The transdisciplinary model has been pointed out as best practice.

"So if we do the math of the child who goes to the clinic one hour a week, versus the child who has the EI provider who comes to the home and shows mom and dad, or grandma and grandpa, or brother and sister or the pet, of how they be a part of the intervention, or how they can provide services when the EI provider isn't there, that home-based, routines-based service-delivery model is going to win every time in terms of the amount of intervention the child is going to receive."– EI/ECSE scholar

"I/T connection and the EI program throughout the nation looks at the parents' resources, priorities and concerns and based on their priorities they then provide services to the families not directly to the children." – EI/ ECSE expert

The intense cooperation between team members in the transdisciplinary model leads to releases of roles, which is a key component of this model (King et al., 2009; Stepans et al., 2002). Role release happens when the team members release knowledge from their specific disciplines to another EI provider. Role extension is defined as the process where each EI provider becomes more involved in their own specific discipline through new education and more involvement (Woodruff & McGonigel, 1988).

"...and it's more work, so if I am teaming with you a 100% of the time, we've got a time to plan, to team, to share the information, to merge our practices, and to have role release"- TTAC expert

2.2. Difficulties with transitions from a multidisciplinary to a transdisciplinary model

Although early interventionists report that they firmly believe in the participation-based practices, research has shown that sometimes they do not participate in a way that shows those perceptions (e.g., McWilliam, 2000; Dunst, Trivette, Humphries, Raab, & Roper, 2001;).

"Although we recognize the transdisciplinary approach as best practice from a research point we also see multidisciplinary approach taking place and again this is one of those differences based on states...in other states is more based on what the family needs or wants and based on what the disability is, they can have three or four service providers coming into their home, which can be overwhelming, and when you think about service continuity, you can be hearing different things by different providers and those providers might not be collaborating..."- EI/ECSE scholar

Researchers have found that some EI practitioners do not facilitate caregiver-child teaching interactions and they don't incorporate interventions within the family's day to day activities and home-based routines (e.g. Peterson, Luze, Eshbaugh, Jeon, & Kantz, 2007; Campbell & Sawyer, 2007). Research has shown that practitioners directly teach children as in clinical settings.

„Now, that still being talked a lot, but the truth is that we have not implemented it, we are working towards that but if you would talk to an EI system you would see that there are probably sometimes multiple people going in and out. It takes a long time to change practice." – EI director

2.3. Coaching of families

There are two approaches in coaching families: early childhood coaching approach by Rush and Shelden (2011) and caregiver coaching guided for the families and based on routines intervention approach (Woods& Goldstein, 2007). Both approaches are based in the same research and accentuate doing reflection, active participation of parents during home visits, solving problems collaboratively etc. Still, a lot of early interventionists are still working directly with the child and collaborating/ coaching parents. However, every home visit is different and it challenges EI providers to adapt their skills and knowledge in different ways.

"...within that transdisciplinary umbrella or approach, we recognize the importance of family coaching and that something that's come a long way since 1986. So, when we first saw part C, EI services, we saw more clinic-based services where the child might be left with the service provider in a clinical based setting...the EI has to work on whatever the child needs. But now what we recognize as best practice is that we recognize everyday practices and routines to embed possibilities for the child to practice target skills." – EI expert

The current trends in the US in early intervention involve the use of coaching practices to strengthen caregiver capacity to encourage their children's development during every day routines and interactions. Coaching is very popular, though service providers are struggling somewhat to implement it.

"In Virginia, over the last 10 years there is a real shift towards coaching, It has always been natural environments but it really differs from system to system." – EI/ECSE administrator

RECOMMENDATIONS FOR ESTABLISHING QUALITY EI/ECSE SERVICES

1. Transdisciplinary model as best practice

In many developing countries there is a high need for family-oriented early intervention services. The transdisciplinary model is the most appropriate and evidence-based practice that will cost-efficient and beneficial for all children with developmental delays and also for their families. In that respect, there should be a smooth shift from the medical multidisciplinary model towards the transdisciplinary model. Otherwise, we will have clinics in homes. There should be high access to these services so that more families can benefit from this system.

2. Defining criteria

In order to have continuity in services and to ensure that all children that need services-receive them, initially we need to create clear criteria for eligibility. At least 25% delay in one area eligibility criteria can be most beneficial for all contexts. The second criteria that needs to be defined is the assessment tools that will be used as well as what is least restrictive environment in different contexts. We need clear definitions on what our response to intervention multi-tier system would look like and how we can utilize the universal design of learning into our preschool special/inclusive education.

3. Universal early screening.

There is no doubt, that the earlier the child is identified, and the earlier the intervention starts, the better the outcomes for those children born at-risk or children with disabilities will be. We need to create an array of early detection strategies and a unified system of child-find. Well defined screening instruments should be agreed upon.

4. Coaching in Early Intervention

One of the methods of working with the parents has to be based on coaching. Parents, within this transdisciplinary method have to be coached in the best routine-based ad activity-based activities within their homes.

5. Universal preschool

Research showed that the best inclusive opportunities can be mostly created in states that have mandated the universal preschool design. This type of preschool offers opportunities and slots for children with special needs within the general mainstream settings. Creation of quality child care programs for every child in this country should be at the public's expense. Such action would more than pay for itself by ensuring that all children would experience a safe, stimulating, and nurturing environment.

6. Inclusion as a state priority

There needs to be clear directions for inclusive education mandated from the state. The state shouldn't be hesitant to tell practitioners and experts that inclusion is the direction we need to take. This can be done through a joint statement of all relevant institutions.

7. Highly qualified EI/ECSE professionals

One of the objectives for good early intervention and early childhood special education practices is to have more professionals that will deliver services. However, one the premises has to be that these special educators have to be trained to deliver evidence-based practices. The best practice is to train small groups of implementation teams who can deliver home-based, routine-based services. Additionally, there has to be fidelity checks that will ensure continuation of evidence-based practices. The need for quality child care, in turn, would require well-trained and experienced professionals to deliver services.

8. Dual Licensure

The field research as well as the desk-top research clearly showed that dually licensed early childhood educators will have the knowledge and skills to work in inclusive settings. There needs to be a change in the way we train pre-service special educators as well.

9. On-line certification through on-line professional development modules

Education needs to shift towards the use of on-line tools in the area of professional development. When it comes to professional development that is not organized through on-line courses, the best method is coaching the professionals and one-on-one trainings rather than large auditoriums training courses.

10. Joint staff development

This research showed that EI and ECSE staff are best trained when the staff development courses are joint so that they can share their different views and different perspectives and see that there are more alike than that they differ. Cross-disciplinary and interdisciplinary training programs should be created because the best practice is for professionals to work in teams. This should also be related to the manner we train our pre-services special educators.

11. Broadening the role of special educators

Special educators need to make a shift from their traditional roles in teaching in self-contained classrooms or doing pull-ins and push-outs as a

manner of mainstream education for the children that have special needs and meet new multitiered instructional programming demands to best address all students' needs. They also need to take more challenging roles, like AAT specialists and dyslexia specialist. These changes can be made by updating of the Special Education studies in high education institutions.

12. Clearly defined roles of the Department of Health, Department of Education and the Department of Labor and Social Policy

These three departments should have clearly defined roles in the EI/ECSE processes. As the research showed, the Department of Health should have the most important role in the birth-to-three population having in mind that usually the services will be billed through the health insurance. The child-find services as well as the resource teachers should be housed in the Department of Education and the Department of Labor and Social Policy having in mind the preschool education in Macedonia currently is governed through these two Departments.

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Chapter 3

OUT-OF-SCHOOL LEARNING

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1. INTRODUCTION

Human beings, who have been intertwined with education since their existence, taught what they knew to each other by way of demonstration of how to do the things in the early ages. A person who was believed to be knowledgeable during the periods when education was not conducted systematically shared their knowledge with people who wanted it. Education, which has started to institutionalise in the recent years and reached the present day, is defined as "the process of deliberately creating desired changes in a person's behaviour through their own life" (Ertürk, 1979). As learning can take place in any environment, anywhere outside school and where human beings interact can be considered as educational environment. In this sense, it has been revealed that informal education and informal learning environments, which take part in the structuring of knowledge, should also be included in educational practices in addition to formal education. Informal education is defined as the learning process taking place in areas called informal learning environments outside classroom (TV, programmes, radio, newspaper, internet, sport centres, field trips, museums, science centres, art galleries, historical places, zoos). Accordingly, informal learning takes place at anytime anywhere (Türkoğlu, 2009). In the literature, the concept of out-of-school education is emphasised as a source of informal education used in formal education. Salmi (1993) explained out-of-school education as the education taking place in institutions and settings outside the physical areas of the school in parallel with the curriculum and within the scope and period of school. In addition, Salmi also emphasised that informal learning environments such as TV, museums, science centres, factories, aquariums, zoos etc. could be called as out-of-school learning environments (OSLE) on the condition that they were employed within the framework of predefined goals and learning outcomes in a planned and systematic manner for educational purposes. Briefly, out-of-school education is a type of education where the resources of informal education are combined with the formal education. In this sense, the resources of informal education used are called as OSLE.

The science course in effect was designed based on the research-inquiry-based learning approach in the curriculum. With this curriculum, the aim is that students obtain knowledge through actions, experience, exploration and creating knowledge in their minds as scientists do, instead of absorbing a ready-made knowledge. In particular, the fact that the science course is based on conduct of more practical applications than other courses has made it necessary for students to take an active role in their learning. This situation has made the need for OSLE more apparent. During the planning and implementation stages of the science course in the curriculum in 2013, it was stated that OSLE such as science, art and

archaeology museums, zoos, and natural habitats etc. should be benefited (MoNE, 2015). Accordingly, it is considered that teachers of science should perform educational activities not only in settings containing school stimuli but also in out-of-school environments through associating the learning outcomes included in the curriculum of the science course with the activities of OSLE.

In the literature, there are numerous research studies proving that informal education and education environments enable students to be intertwined with the real world and their environments, arouse students' curiosity and interests and ensure the knowledge acquired to have a meaningful place in students' memories thanks to allowing for the use of many sensory organs (Bakar, 2013; İlhan, Doğan & Tosun, 2017; Ramey Gassert, 1997; Yavuz, 2012); affect students' development positively in terms of curiosity, asking questions, research and exploration through experiments and observations, and structuring knowledge (Altıntaş, 2014); contribute to permanent learning, motivation and academic success of the students (Doğan, Çiçek & Saraç, 2017; Türkmen, Topkaç & Atasayar Yamık, 2016; DeWitt & Osborne, 2007; Sidars, 2007; Braund, 2006); contribute to achievement of learning outcomes in curricula (Braund & Reiss, 2006; Davidson, 2006; Falk & Adelman, 2003) and to active and self-regulated learning (Hoekstra, Brekelmans, Beijaard & Korthagen, 2009); and that students are more active when they have full control during learning process (Pozgaj, 2008).

Informal environments are seen as year-end trips in our country. Such trips are perceived only as moments for fun and whiling rather than a learning environment as they are not associated with the curricula. However, new research studies reveal that planning trips to be organised in line with the goals of the curricula, at the end of which an evaluation will be made as to whether learning has been acquired, is of importance. It can be stated that when the visits to OSLE are associated with curricula, planning the activities to be conducted before, during and after the visit will have an impact in the students' success.

2. OUT-OF-SCHOOL LEARNING

2.1. Definition

At such an era as the one when learning resources are abundant, it is henceforth challenging for students to learn within four walls. Learning cannot always be expected to take place in the classroom environment. (Özyıldırım & Durel, 2017). Students can sometimes learn the same subject and phenomenon from different settings such as in-school and out-of-school environments (Fallik, Rosenfeld & Eylon, 2013). Therefore,

it is imperative to make use of every opportunity to teach (Türkmen, 2010).

Informal learning should be paid sufficient attention in addition to formal learning. Students can develop their learning outcomes acquired in the classroom through such meaningful activities as direct experience, personal observation etc. (Atmaca, 2012). Learning acquired at school in a planned and systematic manner is defined as formal learning while learning acquired independently from a certain space defined as informal learning. As for out-of-school learning, it is seen as the connection that combines formal learning with informal learning (Bozdoğan, 2017).

Out-of-school learning is a learning journey, which is managed in cooperation with the institutions and organisations outside school on the basis of the curricula in line with other disciplines, as well (Salmi, 1993). It offers the opportunity to learn in different ways as a supplementary education to in-class education in the schoolyard, around the school or outside the school. These activities comprehend such areas as museums, zoos, botanical gardens, and aquariums.

In OSLE, students increase permanence of the knowledge they have acquired through personally wondering, researching, and experiencing. Additionally, based on the examination of the research studies and observation of out-of-school education and evaluation results, it is seen that out-of-school learning helps students develop and increase the success substantially.

2.2. Foundations

Historically, out-of-school education began with the emergence of the concept of school. Free folks in Athens would send their sons to private schools. Pedagogues would give these children some basic skills. For example, when walking down the road, they would greet, take garden walks. One of the schools founded in Ancient Greece during Hellenistic period is the school of those following the teaching of the Epicurus. The founder of the school is Epicurus from Samos. Since he gave lessons in garden gathering students there, people who supported this idea were called “garden philosophers” (Aytaç, 1980).

Use of out-of-school environments for educational purposes emerged as a reformist approach around the 17th century. In this regard, it is not very new approach; however, its importance has started to be understood better. This concept, which includes all the activities conducted outside the four walls of a classroom, ensures that the people can experience more activities hands-on as such a continuous interaction with learning is sustained (Şen, 2019). Looking into historical development, it is seen that

out-of-school learning practices are involved in the end of the 19th century and in the beginning of the 20th century. It is claimed that such practices started towards the end of the 19th century in Broadoaks Schools in the USA. The idea of employing the nature itself as a laboratory for courses, which was set forth by Ada Imelde Brooks Brothers, started to take place in out-of-school learning curricula for the first time in 1912 (Şimşek & Kaymakçı, 2015).

As of the nomadic life of the people in Turkish history, out-of-school learning activity has been visible in such activities as martial arts and hunting (Akyüz, 2009). It is seen in the last years of the Ottoman Empire and first years of the Republic that out-of-school learning activities were used to train especially teachers for the villages. There were such out-of-school activities as the museum courses of Ihsan Şerif, local visits to historical places conducted by Muallim Cevdet, a botanical garden founded by Esat Şerafettin in the university, tree fests of Ethem Nejat. Village Teacher Training Schools established in 1937 and village institutes established with the law dated 1940 were the formal education institutions where this kind of activities were carried out substantially (Okur Berberoğlu & Uygun, 2013).

2.3. Importance

Out-of-school learning is learning what is there outside the school and enriching the curriculum with clear experience. In this regard, science and mathematics are not two separate disciplines within the context of the predefined objectives and they both have the learning environments that provide the opportunity to experience. They both provide sound and deep experience about solving real life problems and natural environment (Quay & Nicolson, 2007). Out-of-school learning provides benefits and is of importance for the individuals in many ways. Out-of-school learning provides settings that increase eagerness to learn, develop motivation and attitudes and it contributes to the socialisation of the students. Students undertake responsibility in the activities carried out outside the classroom, which, in turn, invokes a sense of responsibility (Köse, 2004). The importance of OSLE in learners' acquiring affective behaviours such as motivation, interest, curiosity, eagerness to learn, which are sometimes ignored at school, is emphasised by the researchers (Pedretti, 2002; Ramey-Gassert, Walberg & Walberg, 1994). Out-of-school learning programmes play an important role in equipping learners to make the most of school, helping them develop high self-esteem, nurturing their unique strengths and qualities, and increasing their enjoyment of school and life in general. It also has functions to help learners develop their skills, strengthen their ability to cope with the challenges of life, and help them feed their passions

(Shale, 2005).

OSLE provide individuals with positive skills in many mental, physical, and social aspects. The effects of trips to OSLE and activities in these environments on students have been defined as long-term effects and learning-enhancing effects (Anderson, Kisiel & Storksdieck, 2006). OSLE carry the educational environment outside the classroom in order to achieve the goals and learning outcomes of the course. The educational environment carried outside the classroom in this way provides enriched learning settings in real life with real objects. As such, this educational environment ensures that students interact with phenomena, events and objects, that they put into practice their knowledge and implement them in their daily lives. In addition, it ensures that such senses as curiosity, interests, attitudes, and motivation of learners are kept alive (Meredith, Fortner & Mullins, 1997; Pedretti, 1997; Ramey-Gassert, 1997). Activities performed in OSLE also encourage learning in different ways that traditional environments cannot (classroom environment) do; in addition, they help each student learn at their own pace (Melber & Abraham, 1999).

OSLE contribute greatly to close interest of learners in science, arousal of curiosity, and learning through observations as well as encouraging learners' curiosity towards OSLE (Armağan, 2015). It has been found out that OSLE are effective in learners' constructing strong memories to be remembered later within sociocultural context (Falk & Dierking, 2000). Courses covered in OSLE have been found out to embody abstract concepts and enrich educational environment and science at school, to contribute to the development of science skills of learners and to support associating acquired information with everyday life (Bozdoğan, 2007; Chin, 2004). A properly planned and effective trip has positive effects on meaningful learning at a cognitive and affective level (Anderson, Lucas, & Ginns, 2003; Ash, 2003; Griffin, 2004). In addition, out-of-school activities allow students to examine events in detail with their senses as well as contributing to gaining environmental consciousness (Sergeant, Topsakal Umdu & Oztuna Kaplan, 2013).

OSLE contribute positively to the development of students' academic achievements, emergence of leadership qualities, their moral and social development, making use of free time efficiently, and the understanding of school culture and structure (Köse, 2004). Activities conducted in OSLE help each student learn at their own pace, encourage learning (Melber & Abraham, 1999), and support education at school (Gerber, Marek & Cavallo, 2001). Schauble et al (2002) stated that the impact of out-of-school environments on students included results such as an expanded sense of aesthetics, development of motivation and arousal of interest, establishment and sensitisation of critical standards, and development of personal identity.

Nichols (1982) listed the important characteristics of course activities in out-of-school environments as follows: They take place outside the school walls. Learners participate in activities hands-on. Real objects are in place. Lessons are associated with real events. Such activities appeal to many senses. Since activities are fun and interesting, they encourage student participation. Moreover, it is noted in the studies that OSLE provide learners with the opportunity to live hands-on experience by using many of their sensory organs, that they contribute greatly to making association between the subjects and daily life (Ertaş, Şen & Parmaksızoğlu, 2011). In line with the aforementioned information, it can be stated that OSLE are effective in acquiring skills that may be necessary for many areas of life.

3. TEACHING AND LEARNING PROCESSES IN OUT-OF-SCHOOL LEARNING

Since out-of-school learning takes place outside the classroom, it falls within the scope of informal education while it also falls within the scope of formal education as it is based on a planned and systematic education (Bakioğlu & Karamustafaoğlu, 2020; Bakioğlu, 2017; Türkmen, 2010). Formal education has its purposes. It is performed within the framework of a predefined curriculum, through teaching, and education process is planned, implemented and monitored by a teacher. Formal education is implemented within a specific framework in a controlled manner and involves periodic evaluations, and it takes place in a certain area (Fidan, 2012). In out-of-school learning, there are activities planned and structured in line with the learning outcomes that are planned and covered within the classroom. These activities are accompanied by a teacher or guide (Ertaş & Şen, 2017). Trips that are planned as a learning environment do not serve as a place where learning takes place all by itself; quite the contrary, they should be defined as the activities to be organised within a predefined plan and for certain purposes (Şimşek, 2011).

It is criticised to imprison students in the classroom and remove them from real life during their educational life (Özür, 2010). Dewey describes school as follows: It must have benches, laboratories, fields, stables. The purpose must be ensuring that children learn through experience rather than teaching them a craft or a profession (Özür, 2010). Based on this idea, activities outside the school are part of the learning-teaching process. Learning cannot always take place in the classroom environment. It may also take place in such areas as museums, zoos, botanical gardens, aquaparks, playgrounds, civil society organisations, youth clubs, media (radio, films, videos, books, magazines, internet etc.) or in places like beaches, stadia, hospitals etc. (Türkmen, 2010). Laçin Şimsek (2011) states that as of the time when environments such as museums, zoos

and botanical gardens, aquariums have started to be considered as an educational environment in recent years, the association of subjects in curricula with these environments has begun, too.

In OSLE, teachers use research- and inquiry-based learning approaches. During the learning process through research, students become curious and interested, ask questions, conduct experiments, conduct research, solve problems, take responsibility and configure their knowledge (Thomas, 2010).

Examining the Physical Sciences Curriculum, it is seen that the goals of the science course are expressed as raising science literate individuals; that there are cognitive goals within the scope of information acquisition and structuring; psycho-motor goals and raising environmental awareness within the scope of skill acquisition; sensory goals within the scope of development of positive attitudes towards the environment (MoNE, 2006). In a research- and inquiry-based teaching model, there are some important roles that the teacher should have. The teacher is the planner of the process. The teacher gives real-life case problems on the subject and guides the research for resources related to the subject. The teacher asks questions to students and have students find the answers because s/he does not share the solutions to case problems, rather s/he helps them draw conclusions about case problems. S/he helps them generalising on the subject (Karaağaçlı, 2011). The planning of the out-of-school learning activities should be associated with learning outcomes. It is very important to determine which learning outcome and which learning environment are related. There is the opportunity to embody some abstract concepts and subjects covered in the science courses.

As a result of the embodiment of the abstract subjects, students achieve more permanent learning. For example, during a trip to Feza Gürsey Science Centre, the paths to solutions to the problems followed by students are monitored by the teacher in the bicycle model, which is related to topics such as the conversion of energy and the conservation of mechanical energy that they learn in the classroom. The questions as to which type of energy is the original energy converted into while cycling answered by the students. The correlation between the students' estimates and the observation results is examined. Students are asked some questions as follows: "In what areas do we use energy transformation in daily life? What may be the areas of use?" The aim with this approach is to ensure that students make an association between the knowledge learned at school and the information acquired in the science centre. As the teacher is the planner of the process, they prepare attention grabbing elements before the trip such as trip posters, announcements, and trip observation forms, which will arouse interest and curiosity among students. After the

trip, teachers listen to the information acquired by the students during the trip, evaluate the information and prepare a report on the problems occurring during the trip and positive aspects of the trip (Karaağaçlı, 2011, p.166).

Interactive learning settings should be created where students can actively participate in the course, student-centred learning can be achieved, and students can learn from each other as well as from their teachers. During active learning process, students are not passive listeners, rather they engage in the process actively while acquiring information and associate between the old and new knowledges. (Mayer, 2002). OSLE are learning settings enriched with stimulants that provide students with real life experience. Therefore, such environments may sound exciting to students.

Bianci and Feasey (2011) have defined five personal out-of-school learning abilities for students: Self-management, Creativity, Teamwork, Problem Solving and Communication. OSLE contribute positively not only to the development of interests and skills of students through observations and explorations but also to their personal development. According to Worth (2010), OSLE allows students for developing following skills and abilities: They make observations. They develop the ability to ask questions by exploring. They explore objects and materials that are not in the school environment. They define and classify objects. They develop problem-solving skills. They develop teamwork skills. They discuss and share the inferences obtained from their observations.

Students learn better with the materials and in activities that allow them for touching and sensing (Minner, 2010). Out-of-school learning centres provide students the opportunity to socialise in a fun and exciting environment as well as developing critical and creative thinking skills through observations and experiments (Henriksen&Froyland, 2000). OSLE increase students' interest and success in science (Dori & Tall, 2000). It is noted in the studies that OSLE provide learners with the opportunity to live hands-on experience by using many of their sensory organs, that they contribute greatly to making association between the subjects and everyday life (Ertaş, Şen & Parmaksızoğlu, 2011). Schauble et al (2002) stated that the impact of out-of-school environments on students included results such as an expanded sense of aesthetics, development of motivation and arousal of interest, establishment and sensitisation of critical standards, and development of personal identity. It was determined that OSLE increased students' eagerness to learn and developed their attitudes and motivation towards the lesson (Ramey- Gassert, 1997).

Anderson, Kisiel, and Storksdieck (2006) examine the effects of

teaching activities carried out in out-of-school areas on students under two headings:

Long-Term Effect: Students who go on such trips to these environments are affected both academically and for a long time because such trips contain memories.

Learning-Enhancing Effect: It is concluded that trips to OSLE have higher effects when the trips are organised in line with the curriculum, students actively participate in the trip and necessary information is shared if need be (Falk & Dierking, 2000). If students are provided with an environment where they can interact and access information and/or with the experts to access information (Türkmen, 2010), they are mentally and emotionally affected positively in terms of making sense of the information (Anderson, Lucas & Ginns, 2003; Cited by Laçin in 2011 from Griffin, 2004)

4. OSLE

OSLE cover the settings where learning takes place with the use of all senses (Priest, 1996) outside the school and classroom, which are the formal learning environments (Ford, 1996), to ensure that new learning outcomes are acquired (Lappin, 1997) by the learners apart from the current curricula. As such, these environments help individuals acquire, organise, and develop the information (Erten, 2016). It is believed that the environments in which interaction with the social environment is ensured the best are OSLE. OSLE are expressed as trips and activities in which education takes place outside the walls of a school in line with specific objectives in a planned and systematic manner (Laçin Şimşek, 2011). Schooling or education at school is not the only setting where individuals learn every day. Not only education, but social reality is schooled in a similar way. In this context, it can be stated that people also learn outside school (Illich, 2016). Use of out-of-school environments for educational purpose emerged as a reformist approach around 17th century. In this regard, it is not very new approach; however, its importance has started to be understood better.

This concept, which involves all the activities conducted outside the four walls of a classroom, ensures that the people can experience more activities hands-on as such a continuous interaction with learning is sustained (Şen, 2019). Learning takes place formally and informally. Formal learning aims to transfer knowledge and skills to individuals by deliberately forming on a certain plan, programme, and goal in a certain period of time (Laçin Şimsek, 2011). Informal learning can be addressed within a broader range. Informal learning is expressed as the process

continuing throughout the life in every moment of interaction with the environment in which the individual acquires certain learning outcomes, skills and behaviours from the daily life (Türkmen, 2010). Informal learning may also cover learning acquired voluntarily without the need for a teacher, outside the school without a spatial limitation. If the learning was accepted only in a formal construct, then learning taking place outside the school would be neglected. Environments such as industry, science centres/museums, botanical gardens, zoos, aquariums, and planetariums form non-formal learning environments (Eshach, 2007). Saraç 2017) stated that field trip/natural sightseeing activities and museums/science centres were used more frequently as out-of-school learning environment.

Activities to be held in out-of-school environments have many benefits. According to Brown (2000), some of these benefits are as follows: They provide opportunities for children of different ages with similar interests to mix with each other, provide different educational environments to families in difficult conditions; strengthen the growing ties between school and community; make better use of the school building and facilities; provide employment opportunities for adults in local areas; provide an educational environment for new parents who need childcare; contribute to the improvement of communication between families and school; provide easier access to education and educational environments for children and staff during school holidays.

OSLE should be determined in parallel with the curricula. The field trips that are not planned in line with the goals and learning outcomes predefined in the curriculum will not serve the purpose. Thus, while organising trips in these places, teachers need to analyse out-of-school areas well to integrate them with the curricula. In addition, it is important to obtain necessary permits when organising a field trip to an out-of-school learning environment. Meticulous work is required in obtaining necessary permits, which is necessary for efficient use of time. Teachers should make good field trip planning and use time efficiently during the trip. Moreover, a guide must be requested in advance for the trip. In field trips without guides, it may be difficult to introduce certain areas adequately. Field trips must be planned to include affordable costs in the areas that students will visit. While calculating trip bus service fee, museum entrance fee, or if it is outside the city, accommodation and meal fees, the cost account must be taken care of.

4.1. Main OSLE

4.1.1. Schoolyard

Although most science activities are held in the classroom, children learn much more in the activities outside the classroom. The concept of

"out-of-school" starts from the school yard and covers visited places outside the school, that is to say, out-of-school environment starts with the school yards and extends towards the immediate surroundings (Loxley et al., 2017b). In other words, the nearest outdoor environment to the classroom is the schoolyard. With the observations and experimental activities made in this environment, children can make new discoveries by gaining awareness by themselves and obtain the knowledge they have discovered permanently (Çavaş & Huyugüzel-Çavaş, 2014). Out-of-school learning is considered as an important factor for pre-school period. Therefore, it can be stated that schoolyards are a cheap and easy way for children of pre-school age to develop interest for learning science (Loxley et al., 2017a):

4.1.2. Science and Technology Museums

Museums are places that enable education and training of the society, that carry the traces of the past to the present, that allow for the prediction of the future based on these traces, that guide social innovations and allow for development of individuals while having fun. These places aim to teach through exploration and are filled with materials encouraging individuals to research. Science museums, in which exhibitions are made thanks to the development of information and technology in addition to exploration rooms, which portray the past in ethnographic and archaeological sites, provide more learning opportunities to the students than the conventional in-class learning. Museums are specialised institutions aiming at developing individuals and providing opportunities for learning and living through senses and emotions as well as allowing individuals to witness the environment and world they live in (Çakır İlhan, 2019).

4.1.3. Zoos

One of the museum types that aim to bring wild and domestic animals together from all over the world is zoos (Yavuz, 2012). Zoos are park-type places organised to exhibit wild and domestic animals with climate and natural conditions suitable for animals (Balkan Kıyıcı, 2011). Zoos, which were established for the first time in history for collection purposes in Egypt in B.C. 2500, exist today to inform people on natural life, provide animal care, bring animals together with people and preserve animals whose species is endangered etc. (Yavuz, 2012). Although the primary task of zoos is providing information on natural life, they have been also used to support students' learning in recent years (Christoph, Sandra, Heiko & Wilhelm, 2007; Yılmaz, 2008). Zoos can increase students' motivation and attitudes towards courses through attracting their interests and attention (Falk & Adelman, 2003; Lukas & Ross, 2005). Moreover, zoos may increase academic achievements of students by embodying abstract

subjects and providing hands-on information (Balkan Kıyıcı, 2011; Pace & Tesi, 2004).

4.1.4. Botanical Gardens

Botanical gardens are institutions where plant collections are preserved and exhibited, and which hold various documents for educational and scientific research (Cited by Nuhoğlu in 2011 from Botanic Gardens Conservation International, 2011). Klingenberg, Schulze, Zschiesche, Looss (2005) inform that botanical gardens raise public awareness in a wide range of ways and contribute to the understanding and conservation of the biodiversity by means of arousing interest in and raising awareness on plants, ecological relations, and nature conservation. Botanical gardens are areas where concepts related to the diversity, systematics, ecology and morphological characteristics of plants can be taught.

4.1.5. Aquariums

Aquariums are environments of various sizes designed for the observation of aquatic animals and plants. These environments can be used as not only entertainment places but also OSLE. They are important as they contain a lot of unknown aquatic animals and plants. Students achieve latent learning in these learning environments if a pre-planning is made in this regard (Oktay, 2019).

4.2. Characteristics of Out-of-School Environments

Field trips and studies have an important place in the out-of-school learning approach, which enables children to use their skills in various situations through activities aimed at helping children understand the environment they live in. OSLE can offer different opportunities in terms of learning (Griffin, 2004). Teachers think that out-of-school activities provide hands-on experience, serve as a bridge for meaningful learning and support socialisation, entertainment, in-school education (Yavuz Topaloğlu & Balkan Kıyıcı, 2018). It is aimed that learners act as a scientist. That is to say, individuals need to watch, touch, smell, hear, implement, wonder as well as finding solutions to problems so that they can understand and make sense of the events in nature (Türkmen, 2015).

One of the major problems in relation to the field trips to be conducted in OSLE is that there is a perception as if the activities to be carried out in such areas were only for the purposes of sightseeing and entertainment (Laçin Şimşek, 2011). However, in order to achieve the planned goals, out-of-school education must have certain characteristics (Griffin & Symington, 1997). These characteristics can be listed as follows: Out-of-

school learning must be planned because a programme without a planning may not have the expected effect on the student. It should stimulate scientific curiosity and increase success. It should be voluntary. Students must attend voluntarily. Out-of-learning must be complimentary to the learning outcomes obtained by means of in-school education programme. Students should be given the opportunity to gain hands-on experience. Students must decide for themselves on what they will explore. It should be fun. Students should learn through having fun. It should encourage social interaction and allow the development of social skills. Additionally, there must be a specific purpose of taking students to OSLE such as botanical gardens and aquariums. A convenient environment must be provided, and a preliminary preparation must be made for the achievement of such purposes.

4.3. Considerations for OSLE

OSLE are considered as important educational settings since they leave cognitive, affective and social traces in learners (Türkmen, 2010; Anderson, Kişisel & Storksdieck, 2006; Orion & Hofstein, 1991). However, despite all these positive impacts, an out-of-school learning activity, which is not well-planned, may not have the desired effects on the learners. One of the major problems in relation to the field trips to be conducted in these environments is that there is a perception as if the activities to be carried out in such areas were only for the purposes of sightseeing and entertainment (Laçin Şimşek, 2011). Trips, which have not been well-planned, can lay the foundation for misconceptions among students (McComas, 2006).

In the research studies of Griffin and Symington (1997), they put forth that teachers did not know how they would make use of OSLE more efficiently and that they made too many efforts in associating out-of-school learning with learning outcomes. Based on the results of the same research study, teachers were recommended to make an eligible planning for natural learning and to allow for constructivist learning methods. These recommendations can be listed as follows (Griffin & Symington, 1997): The trip to an out-of-school learning environment should be associated with learning unit. Grounds should be prepared to allow students to reach answers to their questions by themselves. Students should be encouraged further to ask more questions in the meantime, which will increase their interests in the relative subjects. Methods that will create comfort zones should be used to make sure that expected learning outcomes reveal naturally. Learning styles and approaches that will improve social interaction should be determined. In addition to determining the needs of students, it should be also ensured that teachers adapt to these environments.

4.4. Factors Affecting Learning in OSLE

An out-of-school learning environment is a learning setting that strengthens students' knowledge on a subject learned at school and that shows that theoretical knowledge is associated with the real life. It allows students to learn through experience in addition to conventional learning environments. In such environments, it is possible to achieve learning in accordance with the differences of individual characteristics and learning pace (Kubat, 2018).

There are various factors affecting learning in OSLE. Kisiel (2003), categorised these factors under 8 headings: *Motivation and Expectations:* People can visit out-of-school environments for various reasons. What they would like to do or see in out-of-school environments will affect their experiences. *Preliminary information, interests and beliefs*: Visitors ' interests and available information will affect their choice during the trip and for the trip programme. *Selection and Control*: Learning will increase when visitors are given the opportunity to choose and control what to learn and what to be interested in. *In- Group Socio-Cultural Mediation*: Out-of-school environments have a unique eligibility for social learning. Visitors in the group use these environments as tools to strengthen each other's beliefs and give meaning thereto. *Mediation Facilitated by Others*: People working in out-of-school environments and other visitors may affect individual learning. *Orientation and Organiser*: Learning is more likely to take place when visitors are familiar with their surroundings and expected behaviours. *Design:* The design of the place where the trip is made can help people in or prevent them from learning. *Strengthening Experience in OSLE*: Information acquired during the trip may affect the information to be acquired after the trip.

Factors affecting learning in out-of-school environments can be categorised into three headings according to Falk & Dierking (2000), Falk & Storksdieck, (2005) and Kisiel (2003) (Cited by Laçin Şimşek, 2011). These are as follows:

Under the category of *Personal Context*: *1. Expectations from Motivation and Visit:* People visit out-of-school environments for different reasons. The expectations of the people may be different from each other. *2.Prior Knowledge:* People are interested in the exhibitions and participate in the activities in accordance with their prior knowledge. Prior experience: Past experience can be guiding. *3.Prior experience:* Prior learning affects students' future orientation. *4. Selection and control:* Students should be responsible for their own learning and be able to control it.

Under the category of Sociocultural Context: *1. In-Group social interaction:* Individuals within a group can be affected positively from

each other. *2. Inter-group interaction:* It has a learning-enhancing effect in the interaction between different groups. Guides, visitors apart from the group create a different source of experience.

Under the category of *Physical Context*: *1. Guidance:* Guidance during a trip make the trip and observations on it more meaningful. *2. Orientation:* Knowing the place visited and knowing what is expected will increase the learning during a trip. *3. An architectural and large-scale environment:* The structure of the visited place is very important in impressing visitors and increasing interest. *4. Discovery and programme of designs and exhibitions:* The way presentations are made is an important factor. *5. Experiences and supportive events outside the visited environment:* Activities after the trip have an important function in making the visit more meaningful.

In a research carried out by Jamisson (1998), he set forth that the location of the place to be visited, quality of the programmes, safety of the students and relation of out-of-school environment experience to the learning outcomes were of great importance in planning the visits to OSLE. In addition, it was observed that students participated actively, and their level of knowledge increased positively in well-prepared trips (Anderson et al., 2006).

5. OUT-OF-SCHOOL LEARNING ACTIVITIES

Out-of-school learning activities are the body of regular activities that are organised in line with the course syllabus outside the boundaries of the school in a planned way to help with the learning outcomes of the relative course. They usually consist of trips to museums, zoos, aquariums, etc. It should be ensured that the needs of the students have been determined and the teacher has adapted so that these activities can serve their purposes and students can be successful. Students should be encouraged to ask questions and socialise. Students should be provided with the opportunity to learn through their own experience and find answers to their own questions (Cited by Laçin in 2011 from Griffin & Symington, 1997).

It is supported in the studies that out-of-school learning activities can provide individuals with the opportunity to live hands-on experience by using more than one of their sensory organs and that they contribute greatly to making association between the course subjects and everyday life (Ertaş, Şen & Parmaksızoğlu, 2011). It is very important that the out-of-school learning activities are supported with other activities before and after the actual event so that the event can become the most efficient. These activities will help acquire learning in line with the learning outcomes in the out-of-school learning environment.

5.1. Requirements To Be Met for Out-of-School Learning Activities

Although OSLE offer rich learning opportunities, they cannot always guarantee that targeted learning will occur, and there may be some possible obstacles to learning in such environments (Griffin, 2004). In order for out-of-school activities to be effective, Griffin and Symington (1997) recommended the following: Curriculum subjects and knowledge acquired in out-of-school environments should complement each other. Approaches in which students can find answers to their own questions should be given priority. Students should be encouraged to ask more questions in OSLE. In this way, students will show a lot of interest in the topics covered in the out-of-school learning environment and they can achieve the results more easily. In order to ensure that learners acquire targeted behaviours, target-oriented methods should be preferred. It should be used frequently for the learning involving interpersonal interaction. A programme suitable for student needs should be created and adaptation of teachers to different educational areas should be supported (Cited by Laçin Şimşek in 2011 from Griffin & Symington, 1997).

There are certain requirements for the activities organised for the purposes of OSLE. These studies can be classified as *before the activity, during the activity* and *after the activity* (Bozdoğan, 2007; Jarvis & Pell, 2005; Rix & McSorley, 1999).

5.1.1. Requirements to be made before the activity:

This stage can be classified as *educational preparation, bureaucratic affairs, transportation, food* and *beverage and housing* (Bozdoğan, 2007).

Educational preparation: One of the requirements to be met before the activity in OSLE is the scientific preparation part. In this part, information should be collected about the place to be visited after the place is determined. Necessary materials should be checked and those to be used and needed during education should be supplied. Activities to be carried out in the environment should be determined and if necessary, a guide should be contacted. The course plan of the day when an out-of-school learning environment is visited should be the same as the one when education takes place within the school but in line with the environmental conditions and the learning outcomes of the curriculum. After determining the environment and preparing plans, it is important to inform students about the activity. Explanations should be made as to what will be done in the environment to be visited, the information to be learned, points to take into consideration, the reason why such an activity is carried out and the relation of the activity with the course. Advertisement brochures should be

obtained for the trip, or a brochure should be prepared in a simple way that students will understand.

These advertisement brochures should not be longer than 4 pages, should be interesting, fit in the whole page, include the layout of the location of the trip as well as the names of the galleries and exhibitions, specify the rules to be respected during the visit, and include puzzle questions for evaluation purposes (Laçin Şimşek, 2011; Şen, 2019).

Bureaucratic affairs and transportation: One of the requirements to be met before the activity in OSLE is bureaucratic affairs and transportation. In this part, the teacher should first obtain legal permissions from students' parents and the school administration. In cases where available places cannot be found in the environment to be visited, or there are other groups there and the event cannot be completed efficiently, an appointment should be made in line with the number of students and the event. Another requirement to be met in this part is supplying vehicles for transportation. Processes such as road distance, transportation and event fee should be handled in this part. For school trips, one (1) administrator and maximum two (2) teachers must be appointed for up to 40 students. The responsibility of the trip vehicles belongs to the school directorates. Trip plan, list and parents' permission documents must be delivered to the school administration no later than 7 business days (MoNE, 2019).

Food and beverage and housing: One of the requirements to be met before the activity in OSLE is the processes of food and beverage and housing. In this part, if the place to be visited is out of the city or if the round trip takes more than a day, necessary reservations for food, beverage and housing should be made (Laçin Şimşek, 2011).

5.1.2. Requirements to be met during the activity

In these environments, the teacher should guide the students. Orion and Hofstein (1994) specify some of the characteristics that OSLE must have in order to achieve the goal of learning. Accordingly, students should learn through having fun in their environments. Students need to volunteer to participate in the trip, be open and willing to learn. They need to be freer during learning process than they are in the classroom. They need to decide the information and how they will learn by themselves. Students who are expected to act as a scientist (science process skills) should be also free to demonstrate their behaviours as they want. That is to say, they should not be expected to act in accordance with an order of behaviours (such as first observation, then recording data and after that analysing etc.). In this learning process, they should practice the method of learning individually or as a group or by learning through experience

by questioning with the help of an expert/educator. During out-of-school learning process, stress factors for the students such as experts / educators, time etc. should be ruled out. The main purpose of going on the trip should be to learn the learning outcomes of the science course.

5.1.3. Requirements to be met after the activity

Requirements to be met after out-of-school learning activities can be summarised as follows: A worksheet or activity can be used to reinforce the information students have learned in the environment and make sure that they remember it. One of the best ways to ensure that students' knowledge is permanent is to associate information with everyday life. Transfer of knowledge should be ensured with students' sharing their observations in the environment with each other in the classroom environment. In this way, students' misconceptions, if any, can be corrected. Photos taken during the activity and news and posters prepared about the learning outcomes can be displayed on school boards. Parents' trust in such learning activities can be earned through being informed after the activities and students can be further encouraged in terms of science course. As in any course plan, there should be an assessment in the out-of-school learning environment plan, as well. Activities should be evaluated by means of an evaluation method determined by the teacher according to the subject and the environment visited (Bozdoğan, 2007). During this process, students' misconceptions should be identified and eliminated, as well (Orion & Hofstein,1994).

It is stated that the visits to OSLE are of great importance in supporting students with activities before and after the visit so that they can keep the most appropriate learning experience. These activities prepare students for out-of-school learning experience by providing preliminary information that will help with perception and points to consider and support new connections with maturation and practice (Kisiel, 2003)

5.2. Out-of-School Learning Activities in The Ministry of National Education

In the curriculum published by the MoNE (2014), it was emphasised that teachers should be in a guiding position in which they help students actively involve in the process and think instead of directly providing students with the knowledge in bulk.

The Ministry of National Education categorised out-of-school activities under four groups, which are Leisure activities (MoNE, 2010), Science Applications Course (MoNE, 2012), Out-of-School Learning Activities in Science and Technology Programme (MoNE, 2006) and Science and Nature Activities (MoNE, 2007).

Leisure Activities: The purpose of the leisure activities is to ensure that students like school more, adopt the school as a family environment, express themselves easily, feel secure and become happier all through edutaining practices; to help students socialise by increasing their interactions with other students; and to contribute to their mental, physical, social, and cultural developments.

Science Applications Course: This course, which can be covered, to learn the foundations of the science, in nature, environment and diverse places outside the school for this course's purposes, will be implemented in a flexible way in terms of variety of activities, venues, methods, materials and tools etc. It is not that all activities will be carried out outside the school. However, activities will be carried out outside the school when deemed necessary.

Out-of-School Learning Activities in Science and Technology Programme: 6th, 7th and 8th-year curricula for Science and Technology, which were published by the Board of Education of the Ministry of National Education and implemented until the past academic year, were examined by the researchers, and activities that could be conducted outside the school were identified.

Science and Nature Activities: Science and Nature Activities module, which was published by The Directorate General of Lifelong Learning of the Ministry of National Education (2007) involves nature activities that were prepared for pre-school education.

Curricula consist of a process that covers all activities related to the teaching of courses related to knowledge, emotions and skills, which are planned so that students can acquire in and out of school environments (Çoban, 2017, p. 30). A wide range of places, areas, institutions, and organisations can be the subject of OSLE. These environments comprise all public and registered private museums, science and art centres of public institutions, historical and cultural fields determined by the Ministry of Culture and Tourism, libraries of public institutions and literature museum libraries, natural protected areas and archaeological sites, technoparks, industrial organisations that are open for visits, universities, national and thematic parks and gardens (MoNE, 2019).

6. CONCLUSIONS

In the light of the information the study presents, it can be stated that out-of-school learning is more fun than classroom learning, and it increases liveliness and concreteness by providing students with the opportunity to gain hands-on experience. Additionally, thanks to out-of-school learning activities, students who study in the open area put forth creative products,

they gain environmental awareness, knowledge, consciousness, and they become sociable. Moreover, their interest, enthusiasm and love towards the classes increase, as well. Furthermore, it can also be stated that the group studies carried out during school activities are found fun and useful by the students, that students do not encounter many problems and when they do they overcome these problems with the help of their friends and teachers. It can be put forth that out-of-school learning activity process makes contributions to social interaction, communication and problem-solving skills of the students. In addition, out-of-school learning activities may provide the opportunity to ensure permanent learning, increase motivation and allow practical learning.

It has been seen that classroom education itself only is not enough to make students active, and it does neither allow them to experience nor give them the responsibility of learning. It has been thought that if students are passive, they cannot be prepared for the development of scientific process skills, which, in turn, causes them to be incompetent to learn the nature of science. Consequently, it can be stated that the fact that students relate information less with everyday life and are deprived of the ways to knowledge will negatively affect the achievement of the learning outcomes in the curriculum and the realisation of permanent learning.

Considering the contributions of out-of-school learning to education, various recommendations can be given on the subject. The activities carried out in the OSLE can be extended to other learning areas. It can be ensured that courses involving out-of-school learning lessons can be included in the curriculum of teacher training schools and that teacher candidates can practise within the scope of these courses. The studies that are conducted in different OSLE with the integration of different courses and subjects, which have not been included in the literature, can bring another perspective to the education. Considering the social distancing and distance learning period due to the pandemic period, online and offline access to OSLE that are suitable for distance learning can be increased and disseminated.

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Chapter 4

MUSIC THERAPY FOR CHILDREN WITH SPECIAL EDUCATIONAL NEEDS

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Introduction

Music therapy is a modern profession that needs skills and theoretical knowledge. Although music therapy as a profession that has only recently been established, the link between music and therapy is not new. Historical data have repeatedly explained the human preoccupation with music as part of healing, and this can be found throughout history, myths, legends, and literature of the last 2000 years. From this we can say that music presumably existed as a way of healing even in the earliest primitive societies (Bunt et al., 2013).

It seems appropriate to start speculating why music can be a healing tool around the world and why music "in many periods and cultures in the past two and a half millennia, probably even before, was a cure" (Horden, 2017). Contemporary research in child psychology and psychobiology suggests the existence of innate musicality (Malloch & Trevarthen, 2018). Innate musicality has a vital function from the moment we are born, when we use sound as our earliest means of communication. The sounds that a child can make at any time have pitch, color of sound, melody, intensity and rhythm. Furthermore, these sounds express feelings such as hunger, happiness, need for sleep, etc. The child uses these sounds to communicate and if everything goes well in a developmental order, he eventually learns to speak, the sounds grow and transform into speech. The parent is likewise able to communicate with the child instinctively (Tolbert, 2001). This intuitive manipulation of musical sound is called "Communicative musicality", and the term refers to "those attributes of human communication that are particularly exploited in music and that are vital for the communication between the parent and the child". Research shows that the lack of opportunity for this early communication can have a profound effect on a child's emotional and cognitive development (Trevarthen, & Malloch, 2018).

History of music therapy

The idea of the healing positive effect of music on health and behavior is at least as old as Aristotle and Plato, noting such observations in their writings. In the 20th century this discipline began to develop after the First and Second World Wars when all kinds of social (state) musicians, professionals and amateurs, have been engaged in hospitals where thousands of soldiers have been physically injured or emotionally traumatized by the war (Horden, 2017). The positive outcomes of this activity, in terms of the psycho-physical condition of the patients, forced the doctors and nurses to the idea of constantly hiring musicians within the hospitals, which of course first needed to have proper training. Shortly afterwards, the need arose to create studies for the profession of music therapist, and the first

undergraduate program appeared at Michigan State University in 1944 (Davis & Hadley, 2015).

What is music therapy?

The World Federation of Music Therapy defines music therapy as follows: "Music therapy is the use of music and/ or musical elements (sound, rhythm, melody and harmony) by a qualified music therapist with a individual or group, in a process designed to facilitate or promote communication, connections, learning, movement, expression, organization and other important topics of therapy to meet the physical, emotional, mental, social, and cognitive needs. Music therapy goals are aimed at developing the potentials and/ or restoring the functions of the individual so that he/ she can achieve better intra or interpersonal integration and thus a better quality of life through prevention, rehabilitation or treatment" (Haase, 2012). This definition is necessarily broader in order to cover the many different models and methods of practice that exist around the world. There are generally two main approaches to music therapy: receptive and active. The receptive approach is based on listening to music, while the active approach consists of improvising, playing, singing or composing your own music (Bell, 2017). In the international music therapy community two different applications of music as therapy can be found (Sutton, 2002):

- The use of music because of its inherent preservative and therapeutic qualities and
- The use of music as a means of self-expression and interaction within a therapeutic relationship.

Bunt (2003) point out three different sources of emotion that arise in music therapy. Music can trigger a wide range of associations and associative connections to specific events, places, memories and people that matter in a child's life. The second type of emotion is iconic connections, when the child associates' musical characteristics with some external musical event or human emotion (for example, a child names the music he or she listens to as a "sunny day" because it sounds like that). The third type of emotion is intrinsic connections, when the child's emotional experiences are linked to different aspects of the music. Music helps the children to recognize and express their emotions (Flower, & Oldfield, 2008).

Music therapy can be performed directly with the child or in consultation. Direct work sessions usually last 30, 45 or 60 minutes, and before starting the whole process, data are taken from parents or caregivers, in order to understand and accurately set goals. When taking the anamnestic data, the therapist receives information about the child's favorite music and activities, and each therapy session is created in accordance with

the specific needs and abilities of the child. Music therapy consultations consist of strategies, resources, music and materials for teachers, parents, therapists and other profiles working with children or young people who may benefit from music therapy (Silverman, 2007).

Mechanisms of action of music on children

Music causes a certain vibration in people, which means a mental reaction. The basis of music is sound - a sound signal, which has a wave structure. It is known from the literature that an acoustic signal affects the cells of a living organism, changing their activity. Sound has the effect of several parameters (Skille, & Wigram, 1995):

1. The electromagnetic conductivity of cellular structures, as well as their electrochemical activity - this is called the "non-specific acoustic-bioresonant effect", one of the reactions of the human body to musical, sound effects;

2. At the auditory reception, perception. The perception of music is done mainly through the auditory system. Analyzes in the literature concerning auditory, and thus musical perception, go back through the history of the indisputable fact that hearing originally served as an orientation tool, which, informing about the state of the outside world, emotionally adjusts the person to different external impacts. Every sound for the ancient person is primarily semantic: it carries information about the "intentions" of the object in relation to a person - whether there is thunder, murmurs, bangs in the dark, sounds of mountain shocks. It provokes a response, stimulates a response in the person that is directed by his immediate emotional reaction to sound information.

3. On vibrotactile perception. Vibrotactic perception is based on the work of a tactile analyzer. It registers various vibrations, including those arising during the music-therapeutic effect. Together with other analyzer systems, it helps the body navigate in the environment.

Music and body reactions

The auditory, vibrotactic perception, as well as the bioresonance effect, is accompanied in the human body by numerous reactions at the body level (Çolak et al., 2021). With active perception of music, a person's physiological rhythms resonate and involuntarily adapt to its frequency and dynamic indicators. "It has been shown that musical tempo, rhythm, structure of a work and other musical factors can subordinate the rhythm of internal physiological processes" (London, 2012). One of the reasons for the physiological effect of music on a person is that the nervous system, and thus the muscles, have the ability to assimilate rhythm. Music, as a rhythmic stimulus, stimulates the physiological processes of the body

that occur rhythmically in both the motor and vegetative spheres. Many vegetative reactions of our body to music are known (Galińska, 2015). The cardiovascular system responds significantly to music, with pleasant relaxing music that evokes pleasure and creates a pleasant mood, the pulse slows down, heart contractions intensify, blood pressure decreases, blood vessels dilate. With irritating music, the heartbeat becomes faster, blood pressure rises, general tension is felt (Da Silva et al., 2014). Campbell (2000) points out that music stimulation reduces motor reaction time, increases the lability of the visual analyzer, improves memory and sense of time, revives the condition of reflexes.

Music has an effect on cholesterol. By slowing down the tempo of a piece of music or listening to slower music, we can deepen and slow down our breathing and allow our brain to calm down. Deeper, slower breathing rhythms are optimal, promote peace, control emotions, deeper thinking and better metabolism. Rapid, confused breathing can lead to superficial and distracted thinking, impulsive behavior, and a tendency to make mistakes (Stevens, 2012). Music also affects hormonal metabolism. It "regulates the release of stress-reducing hormones ... the level of stress hormones in the blood is significantly reduced in those who regularly listen to relaxing, calm music." Musical pleasure - the uplifting sensation caused by listening to certain music - is the result of the release of endorphins - "own opium". Endorphins are produced by our brain. Relieves pain and causes natural growth (Yamasaki et al., 2012). The well-known music therapist and scientific researcher in the field of the impact of music on the human body S.V. Shusharjan (2005) notes in his works that the waves created by the brain can be changed with the help of music and expressive sounds. Consciousness consists of beta waves vibrating at a frequency of 14 to 20 hertz. Beta-waves are generated by our brain when we are focused on daily activities or experience strong negative emotions. Elevated sensations and peace are characterized by alpha waves extending from 8 to 13 Hz. Periods of peak creativity, meditation and sleep are characterized by theta waves with a frequency of 4 to 7 hertz. Both deep sleep, deep meditation and unconsciousness create delta waves, with a frequency of 0.5 to 3 hertz. The slower the brain, the more relaxed and calm we feel. With the help of music, you can transfer awareness from the beta waves to the alpha range, thereby increasing your overall well-being and attention. Playing music can create a dynamic balance between the more logical left and the more intuitive right hemisphere.

Music also causes various motor reactions in the body. When a child listens to music, he develops real muscle pulsations in several areas: the muscles of the arms, legs, head, torso and larynx. For example, music with a pronounced rhythmic beginning causes involuntary shaking of the

hands, clapping of the feet or shaking of the head. Children who learn to play different musical instruments unconsciously begin to reproduce the musical pattern of their movements. The rhythm of the music encourages the children to move. Music also causes unconscious micro-movements of the ligaments of the vocal apparatus, when listening to music we unconsciously reproduce it internally (in ourselves) (McGuiness & Overy, 2011).

Exercise for implementing music therapy with children with special educational needs

This technique can be used as a tool for developing valuable social qualities - patience, attention, increasing self-confidence, etc. Used in group, individual and family work. Children may have minimal skills in playing musical instruments and sound objects, or they may be performing this type of activity for the first time (Kern, 2018).

Preparatory phase. Children are invited to sit nearby, preferably in a circle. The therapist offers users to play with any musical instrument or object they like, with which they can create sound. It is then suggested that they play together, helping each other to create a combination of sounds, a musical phrase or just to continue the fragment started by the previous participant. The therapist may also suggest the use of any other tool or object that the child likes in the game. It is important that the child behaves spontaneously. An environment that encourages the child to express himself freely, should be created. The classroom should have a sufficient number of musical instruments and objects that can create sounds, they should be accessible and interesting (Stouffer et al., 2007).

Second phase. The therapist asks the child (or one of the members of the group) to make a lot of sounds with his instrument, to play "his melody". If it is difficult for children to start exercising, then the therapist starts first. The closest participant, based on their own ideas, tries to continue with the voice dial. Its composition does not have to be long, so all children have time to participate several times (Kern, 2018).

The third phase. The whole process of creating musical improvisations is recorded on tape. When the children feel that they have nothing more to add, the therapist invites them to listen to the recording with the result of their joint work. The therapist gives a positive assessment of the children's creativity, says something good about the creativity process and invites the children to discuss their musical work. After that, the children listen to the recording again. The main points of discussion are (Lu, 2017):

1) which tools were used most often;

2) what can be said about the sounds that prevail in improvisation, how can they be described;

3) what other sound combinations were remembered;

4) is it possible to hear a melody, did the music turned out to be beautiful;

5) what, in their opinion, expresses the music they created;

6) does the music reflect the life of the children, their relationships;

7) what each child brings to the collective creativity;

8) how his instrument sounded;

9) how his music influenced the course and the result of the overall work.

The fourth stage. It is used as an alternative to the previous one or as a supplement. The therapist asks the child or one of the members of the group what might happen in their piece of music, what is its content. Or what can accompany this music, what can happen in its background, what their music looks like. He suggests that children on this basis will come up with a story, to compose a musical story that would express the recorded children's music. The children in turn compose a fairy tale, passing the "conductors baton" in a circle (Goodman, 2011).

Option: Children compose words to a song that can be sung in their music. The whole process is recorded on tape. In the next lesson, the children listen to the recorded musical fairy tale, songs, discuss it. The therapist complements, plays other musical instruments, composes other words, or corrects old ones (Lu, 2017).

TYPES OF MUSIC THERAPY

Vibroacoustic therapy

In past civilizations and in various cultures the vibration of sounds or individual tones has been used as a means of intervening physical disability and pain, as well as psychosomatic disorders (Wigram, 1996). The modern version of this treatment, was specially developed in the 1960s in Scandinavia and Britain and it includes the physiological effects of musical vibrations on the body. In Norway it is initially known as "music bath" and soon as vibroacoustic therapy. Skille and Wigram (1995) write about this: "The music bath tries to create an environment where the body" bathes" in sounds and vibrations". The equipment (patented worldwide) consists of a bed/ bench or chair with several built-in speakers. This is connected to a six-channel signal unit containing a CD player that can play a variety of music.

In the vibroacoustic therapy process the child with special educational needs lies on the bed so that the sound is transmitted through the air directly to his body. Examples of conditions where this therapy has been shown to be effective are: asthma, cerebral palsy, constipation, abdominal pain, sports injuries and insomnia (Skille and Wigram, 1995).

Use of recorded music as an adjunct in the treatment of physical illness

Music therapy techniques in the United States, are being developed to record pain relief or reduce anxiety, pain, or stress so that the patient needs less medications (Standley, 1995). The procedure implicates listening to music that the patient has previously selected on high-quality equipment, during treatment or directly before treatment. Where possible the patient has control over how loud the music is and turns the music on and off. This type of music therapy takes part in many medical procedures, including surgery, where it is used "before surgery to reduce anxiety and the amount of anesthesia needed" (Standley and Hanser, 1995). Patients, including those undergoing renal dialysis, where music is used to reduce discomfort and is a distraction, and some even use it in childbirth. Other patients in Standley's (2012) research on passive music listening shows that music is used to reduce pain and increase the analgesic effect of drugs for those suffering from cancer. Passive listening to music is also used in the treatment of premature and ill children, where music is used to gain weight and reduce time spent in hospital.

Guided imagery with music (GIM)

This "profound psychotherapeutic method" (Goldberg, 1995) of music therapy was initially developed in the 1960s by Helen Bonnie, she has been working at the Maryland Psychiatric Research Center in the United States as a music therapist, conducting experimental psychotherapy with patients with malignant disease in last stage and alcohol addicts. In the first forms of work, the patients themselves were treated with LCD due to their condition, which was banned in 1972, so Helen Bonnie developed a new modified model of music therapy without the use of narcotics.

In her research, Bonnie found that when subjects listened carefully to a program of recorded classical music while in a relaxed phase, symbolic images and powerful feelings have been evoked, which has led to a significant insight into the treated problems (Goldberg, 1995). According to the research findings, the new GIM model uses two components: altered state of consciousness and consists of a four-phase session and a series of music programs.

The stages of the treatment are:

• **Introduction:** lasts about 15-20 minutes, the therapist tries to divert the patient's attention from the outside world to his inside, to the problems, and the focus point of the session must be determined in advance. The child is usually placed in a relaxed supine position with their eyes closed, in a specially adapted room. The therapist constantly keeps notes on the overall conversation, the patients behavior, body movements, etc.

• **Induction, relaxation and focus:** lasts 2 to 7 minutes, the therapist separates and writes sequences (elements) from the patients story or focuses on a deeper emotional level (e.g., the child gives a detailed description of the feelings he had during the day) . The purpose of induction is to enable easier diversion to deeper levels of consciousness and greater flexibility in experiencing time and space.

• **Music journey**: the therapist leads the patient, in the first sessions and in a more directive way. During the musical journey, the therapist is a faithful companion of the patient, sharing the patients' imaginations, while trying to understand the inner experiences of different modalities: auditory, visual, gustatory, tactile, olfactory. Emotions and memories are also involved in the imagination. The patient's imagination can be clear or diffuse, slowly changing or fast, personal, unrelated or coherent. The musical journey takes 30 to 50 minutes.

• **Going back:** this phase begins with the end of the music and lasts 10-20 min, the therapist slowly returns the patient back to the normal stage of consciousness, while discussing the connection of daily emotions with the problem being treated (Abrams, 2000).

The therapist chooses the program of the recorded music for each session, making it depending on the patients' medical history as well as their current mood (Goldberg, 1995). Today there are more than 30 specific music programs released on 10 CDs called "Music for Imagination". The programs last 30 to 50 minutes and consist of 3 to 8 long or short sequences of classical music, instrumental and vocal. The method has been successfully applied to groups of patients of different types, especially those with specific clinical needs, who can use it as a means of self-research and fulfillment. Practicing the method requires monitoring and special training, after qualifying as a music therapist (Klempe, 2018).

Improvisational music therapy

In improvisational music therapy, improvised live music is used as a medium of communication between patients and therapists. Improvised music therapy is actually based on active, spontaneous music creation. Making music spontaneously means that there are no set rules for how or

what to play. Patients do not need to be musical or have a music education to practice improvised music therapy. It is more about playing and exploring sounds and expressing movements, thoughts, ideas through music. The method uses non-verbal and verbal expression while enabling confrontation of emotions, development of creativity, flexibility, spontaneity (Bruscia, 1998).

The model has been originally developed for adults with emotional or interpersonal problems, and today the practice of music therapy in Britain and around the world is mostly based on the benefits of improvised music (Wigram, 1996).

(Nordoff-Robbins) Creative music therapy

The American composer-pianist Paul Nordoff and the British special educator Clive Robbins have worked together for almost two decades to explore the place of music in therapy, especially by showing interest in children with disabilities. They had pilot projects with children with autism, intellectual disability, emotional disorders, disharmonious development and developmental delays and other learning difficulties, using music as a means of therapy. Their approach is based on the claim that anyone can find meaning or benefit from music and focuses on creating music with the help of a therapist (Tyler, 2017).

In the individual treatment the patient is offered a limited number of instruments, usually a drum or cymbals and more emphasis is placed on the vocal expression, while in group work percussion percussions, horns, etc. are added. The therapist usually sets a musical framework, usually determines the rhythm and pulse, and tries to maintain the child's musical expression within that framework (Nordoff and Robins, 1977).

Kodaly music therapy

Zoltán Kodály is considered to be the inspiration for the development of the eponymous type of music therapy. It is based on the application of rhythm, notation (working with notes), sequences and movement as tools for learning or healing the patient. Case studies have shown that this method helps to improve intonation, rhythm and musical expression, and has a positive effect on perceptual functions, conceptual formation, motor skills and the ability to learn (Houlahan, and Tacka, 2019).

Neurological Music Therapy (NMT)

This model is based on neuroscience, more specifically on the perception and production (creation) of music and their impact on brain function and behavior (Çolak et al., 2020). NMT is actually a system of 20 standardized clinical techniques for sensorimotor training, language and

speech training and cognitive skills training. This method is commonly used in patients with traumatic brain injury, stroke, Alzheimer's disease, Parkinson's disease, cerebral palsy, autism, and other neurological diseases that affect communication, movement, and cognition, (Thaut, 2015).

Neurological music therapy involves several types of different techniques:

- **Rhythmic auditory stimulation**: a technique used to aid the rehabilitation of movements that are fundamentally biologically rhythmic, especially gait. The physiological effect of auditory rhythm on the motor system is used to improve movement control (Thaut 2015).

- **Sensory amplification**: is a technique that uses the harmonic, melodic, rhythmic, and dynamic-acoustic elements of music to provide temporal and spatial signals (symbols) for movement, which reflect the functional activities of everyday life. The application of this technique is wider than the previous one, because it is also applied to movements that are not innately rhythmic (e.g. movement of arms, sitting-getting up). In fact, a musical model is used to encourage simple, discreet movement (Thaut and Hoemberg, 2014).

- **Therapeutic instrumental music performance:** is the playing of a musical instrument in order to practice or stimulate a functional movement model. Appropriate instruments are selected to induce range of motion, endurance, strength, functional hand movements, limb coordination (Thaut, 2015).

- **Linguistic and speech rehabilitation (melodic intonation therapy)**: is a technique developed for the rehabilitation of expressive aphasia, where the preserved ability of the patient to sing is used for spontaneous stimulation of volitional speech through singing melodies reminiscent of natural speech (Thaut, 2015).

- **Musical sensory orientation training:** application of recorded or live music to improve the child's awareness, to stimulate his reactivity to external stimuli, orientation in time and space. In the more advanced stage of treatment, the children themselves engage in simple performances of musical instruments (Ogata, 1995).

- **Auditory perceptual training**: application of music exercises for discrimination and identification of various components of sound, such as duration, tempo, rhythm, pattern, etc. It also integrates different sensory modalities such as visual, tactile, kinesthetic (Hoare et al., 2010).

- **Attention control music training:** includes structured active or receptive music activities in which the musical elements elicit different

musical responses in order to practice selective, sustained, divided attention (Bell, 2017).

- **Musical mnemonic training:** application of musical exercises to stimulate various memory encoding or decoding functions. Musical stimuli can also be memory exercises such as song, rhyme, stanza or stimulate the learning of non-musical information (Gardiner et al., 2014).

Behavioral music therapy

As with behavioral therapy, the focus of the treatment is on behavioral modification (behavior conditioning), which can be measured by applied behavioral analysis. Whether working with a child with an autistic spectrum disorder or an adult with depression, the process is based on the stimulus-response concept, with music being a stimulus and expected to give a positive response. The term behavior is a broad term and includes several components: physiological behavior, motor behavior, psychological and emotional behavior, cognitive, perceptual and autonomous behavior. Regardless of the population we work with (children, adults, the elderly, various developmental disabilities, etc.) in the treatment various musical activities such as dancing, singing and movement are structured and implemented, in order to achieve non-musical goals: social inclusion, communication, physical activity, attention and concentration, cognitive processes, increasing independence, etc. (Edgerton, 1994).

Conclusion

It can be stated that music therapy as a form of treatment helps a lot in the emotional, physical and spiritual condition of an individual. There is enough scientific evidence to support the therapeutic effect of music. From the very beginning, when music therapy has been used only in some psychiatric and veteran hospitals, as a form of adjuvant therapy, this type of treatment has increasingly encountered as an integral part of treatment in various institutions.

The greatest success of music as a medicine is reflected in the fact that sound and vibration have a great impact on all regions of the brain, which is why many musicians and music professors say that it is first a mental and then only a physical activity. Therefore, its influence on various diseases of intellectual or physical nature is multiple. Music therapy should not be limited only to the treatment of people who have health problems, but it can also be used by completely healthy people, to make it easier to perform some daily tasks, because music has always been and will be a part of everyday activities.

Music and children are connected in different ways. Mental health is an integral part of a child's general health and is an important source of

strength and security for the individual and the family. Music therapy can help a lot and encourage a person in certain areas. For many centuries, the influence of music on the life, physical and spiritual condition of children has been studied in various civilizations. A number of studies have shown the importance of music for the general condition of children.

Music therapy has been shown to help with a number of medical conditions, such as autism, depression, trauma, and schizophrenia. For this reason, in the second half of the 20th century, a number of methods of music therapy were developed, which is an indispensable form of treatment in most hospitals. It is believed that music as a therapy can improve communication, support change and enable people to live more refined and creatively. It encourages relaxation, and resilience - the search for inner strength, communication and expression, reduction of antisocial behavior, reduction of pain, prenatal relaxation. The choice of music depends on a number of variables and they are different for each child and have a different impact on each of them. This chapter provides an overview of the possibilities of using music therapy for the purpose of improving the general condition of the children with special educational needs, and as an incentive for greater interest in using music in scientific research for better use of music in everyday life as well as for medical purposes and in practical application.

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Chapter 5

DIGITAL TRANSFORMATION IN EDUCATION DURING THE PANDEMIC PROCESS: USE OF GOOGLE TOOLS

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INTRODUCTION

With the introduction of the Internet into our lives, access to information has become easier, electronic books, digital private and public libraries, digital encyclopedias, articles, blogs and web pages, information discussion forums are just a click away. This digital transformation has fundamentally changed the access and sharing of information. Education is one of the areas where digital transformation is effective. In this context, it has become a necessity to use the developments in information technologies more effectively in the field of education. With the digital transformation, it seems almost impossible for today's education system to provide education without using educational technologies (Sarsıcı & Celik, 2019). Digitalization has provided facilities mostly in areas such as access and communication. Therefore, this situation in the field of education has created an equal opportunity (Fermanoglu, 2020).

Today, with the innovations brought by digitalization in the field of education, the traditional understanding of education has been left behind, and a new era has started in education. In this way, the duties and responsibilities imposed on both teachers and students also differ. While the teacher is defined as a guide in digital environments where new technologies are used, students are defined as active learners who question and discover information. Another innovation brought about by digitalization is that it makes education independent from the concepts of time and place. While education was limited to a field within the school or university in the past, it is now being moved and fits wherever the individual is (Atas & Gunduz, 2020). In this context, technology connects all stakeholders of education (teachers, parents, experts, mentors) by offering a much wider and flexible learning tool than that offered in classrooms.

Coronavirus-2019 (COVID-19), which was first seen in China in December 2019 in the world, affected the whole world in a short time and was declared as a pandemic by the World Health Organization (WHO, 2020). Maintaining the physical distance, which is defended by many health authorities around the world, has been implemented in many countries and has been defined as the first step in the scope of prevention (Hellewell et al., 2020). This situation has brought about important difficulties and changes in daily life (Guragai, 2020).

One of the most important areas affected by the coronavirus, which has affected the world in a short time, is the education sector (Ozdogan, Guner & Berkant, 2020). A mandatory digital transformation was started due to Covid-19. The biggest repercussions of this digital transformation took place in the education world. COVID-19 pandemic has affected the education system in many countries, causing some compulsory changes

in the way education is implemented. In this context, countries have changeovered to distance education instead of traditional face-to-face education (Al Lily, Ismail, Abunasser & Alqahtani, 2020). During the pandemic period, the use of synchronous (synchronous) classroom tools and especially Learning Management Systems for distance education has come to the fore (Turnbull, Chug & Luck, 2020). When the literature is examined, many LMS and classroom tools are preferred for digital learning teaching environments with features such as open source code, ease of use, having a single user interface, video conference support. In addition, with the transition to distance education during the epidemic process we are in, many utility tools have been used.

Google tools are one of the utility tools that can be used with various opportunities offered in digital learning teaching environments. Google tools, which are innovated and constantly updated for the best use of users, are frequently preferred in both digital marketing and digital education environments. In this sense, Google tools offer many innovations to its users to facilitate both social and professional life and to step into digitalization.

In the light of all this information, this study aims to introduce Google tools that facilitate social and professional life, to mention their useful features and to touch upon the integration of related tools into education. At the end of this study, it is predicted that Google tools will be used more by individuals in social life and for educators in digital learning teaching environments required by the pandemic and integrated into education.

Conceptual Framework

When the literature is examined, the existence of many studies on the integration of Google tools into education draws attention. Some of these studies;

Balakrishnan, Singh, Harigopal & Fineberg (2020) investigated the effects of Google Classroom, which is used as an educational tool, on effective learning strategies of trainees. Pathology training was provided in the field of health with the Google Classroom tool and connections were made with field experts from different countries in the lessons related to the video conferencing feature of Google Classroom. At the end of the research Google Classroom has been recognized as a successful tool for effective interaction between trainees and expert pathologists based on the feedback received from trainees. In addition, the trainees stated that they find Google Classroom to be problem-free in accessing content, and that it supports collaborative studies as well as providing the opportunity to learn at their own pace.

Mobo (2021) investigated the effects of video conferencing platforms on all education sectors during the Covid 19 pandemic. In this context, Zoom and Google Meeting platforms are discussed. Video conferencing has always been a key ingredient in the recipe to success for enterprises and other educational sector hoping to connect with customers, remote workers, and even with the students, (Beauford, 2020). At the end of the research, Zoom and Google Meeting platforms using a specific video conference management were found effective in learning and teaching processes. Additionally, these two platforms have been identified as new technology platforms embracing the effects of COVID-19.

Odacıoglu (2019), conducted a study on the evaluation of the use of Google Translate tool in the translation process. In the study, the use of Google Translate in the translation process was evaluated through a survey of 10 participating translators. As a result of the opinions received from the participants, it has been revealed that Google Translate has achieved great success especially in technical translations. In addition, this success rate increases by post editing. However, it has been argued that the success rate may decrease in very complex texts and artistic / literary translations.

Hegele, Jochen, Hegele, Markus (2015), in their research, they discussed Gmail, Hangouts, Google+, Google Sites, Drive, Google Keep, Chrome and Google Apps tools in the context of studying efficiently with Google Tools. At the end of the research, Google Drive using cloud-based systems was seen as a highly effective Google application in protecting corporate data. It has been stated that Google Chrome is an effective browser in terms of efficiency and ease of use. In order to manage appointments and contacts, the effectiveness of Google Keep and its support for efficient study are mentioned.

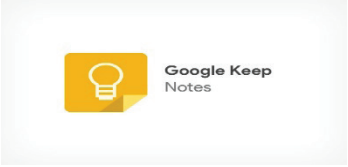
When the literature was examined, it was determined that there were not enough studies within the scope of the relevant subject. This situation was seen as a limitation for the field literature. It is thought that this research will eliminate this limitation, which will make detailed research of Google tools that can be used in social and professional life.

METHODOLOGY

This study is an example of systematic review research. This method collects and summarizes all previous research on the subject that meets the inclusion criteria and seeks an answer to the main question of the research. In other words, systematic review can be defined as a form of research that systematically scans the world literature, evaluates it critically, and brings together summaries of all research related to a particular question by using open methods and synthesizing (Creswell, 2017; Uman, 2011).

Google tools bring many advantages both in social life and professional life, with the features of free use of users when they have a Gmail account, the availability of many mobile phone applications, and faster and multiple use compared to other applications. In this context, the compilation study of Google tools that can be used in social and professional life is presented below.

• **Google Keep :**



When the general features of the Google Keep tool are examined:

• digital note taking

• providing documents

• creating a checklist

• collaborator button: collaborator button

• reminder / alarm feature

• archiving / adding documents

Google Keep acts as a fast, simple and convenient note-taking service. As long as it is compatible, the Google Keep application provides a great advantage by using it on both mobile phones and computers. It is one of the popular applications especially on Android-based devices. Keep allows you to log your scribbled notes, videos, audio files and photos under the one note file. It offers shortcuts like tagging and coloured labels to organise your ideas. User notes are instantly saved directly to your Google Drive. (Baltazar, 2021).

With the Google Keep notes application, which can be downloaded to desktop or laptop computers, especially Android mobile phones and tablets, all of the daily work becomes more planned and scheduled. The application, which is easily downloaded from application download stores and then installed, also offers the opportunity to perform a synchronized work between the phone and the computer. Google Keep, which allows you to record memorable notes and share these recordings with friends and family members when requested, automatically converts the notes created by voice to text on the go. In addition, when a photo of any poster, document or receipt is taken, it can be easily edited through the application.

Considering all these advantages of Google Keep, it can be easily used both in social, business and professional life and this tool is predicted that it will be preferred frequently by students and teachers in planning their education life, especially in academic life.

• **Google Chat :**

Google Chat is a powerful way to communicate in social situations. With this tool, can start messaging with one or more people, create rooms for ongoing conversations with groups of people, and use bots to automate things.

It is thought that this tool can be preferred by teachers in online lesson environments during the pandemic period, especially considering the features of creating a room and starting a group conversation.

• **Google Contact :**

Another online service of Google. It is used to save users' connections and to access the list on the internet. The most important feature of this tool is when users have a problem with their phone, the data in the directory list can be recorded in this application; so there is no data loss.

• **Google My Business :**

Google My Business is a free and easy-to-use tool for businesses and organizations to manage their online presence across Google, including Search and Maps. Within the scope of this service of Google, businesses are found on the internet by customers, also allows editing and updating of business information thus, businesses are made more visible to their customers easily. Although this tool is seen as an environment that can be used in social life for example, it is possible to use a web blog that can be developed for education and making it visible to users (students, lecturer, teacher and other stakeholders).

• **Google Calendar :**

It is Google's calendar service application. Users can constantly synchronize their Google accounts by installing the application on their smartphones. Working in sync with Gmail, Google Calendar provides a reminder service by processing reservations and plans in the Gmail account. Google Calender is a tool that can be used both in social and professional life and acts as an digital calendar for users such as Google Keep in controlling planning.

• **Google Translate :**

Google Translate is a free translation service that provides instant translation between 80 different languages. The application can translate words, phrases and web pages in all combinations of supported languages. In this context, Google Translate aims to make information universally accessible and useful regardless of the language in which it is written.

There are many academic studies on this tool in which the literature is examined. Patil and Davies (2014), conducted a study on the use of Google Translate in medical communication and the evaluation of accuracy. Ten medical expressions were selected in the study as part of a test. These have been translated into 26 languages via Google Translate. Translations were sent only to native speakers of each of these languages and were translated back into English by them. The returned English expressions were compared with the originals and evaluated for meaning. Minor grammatical errors were allowed. As a result of the research, it has been determined that some of the medical expressions used in communication between patients and doctors do not meet the full expression. The reason for this is that Google Translate uses statistical matching method instead of a dictionary/grammar approach for translation. Although some errors are encountered in the translations, the Google Translate application has gained a place as a Google tool, which is frequently used especially in academic studies.

• Google Photos :

Google Photos, where all photos and videos can be found, are automatically organized and can be easily shared with relevant people from there. Photos are shared between users in the cloud environment. Also offers its users the advantage of creating digital albums. With all these features, Google Photos is an asistant tool that can be used in social and daily life.

• Google Duo:

Google Duo is a tool that can be used to make video or audio calls. It is a tool that automatically takes place in the phone on Android devices. Voice and video calls can be made to up to 12 people with this application. Sing, Isha, Pathania and Malik (2018), made a comparative study of voice and video chat application on the ınternet in their studies. In the study, it was stated that Skype, Imo and Google Duo, Skype, Google Duo were the most popular VoIP application launched by Google in August 2017. As a result, it was emphasized in the research that Google Duo audio/video quality was the best among the applications and Imo had the worst audio/video quality.

End-to-end encryption technique is used in conversations. It can be used as an alternative to Google Meet. It is a platform where students and teachers can conduct live lessons, interviews, meetings and other educational activities online, especially during the pandemic period.

• Google Meet :

Google offers enterprise-quality video conferencing with the Google Meet application. With the app, anyone with a Google Account can create online meetings with up to 100 participants and talk for up to 60 minutes per

session. Companies, schools, and other organizations can take advantage of advanced features such as meeting with up to 250 internal or external participants and broadcasting live to up to 100,000 viewers in one space. With all these advantages, Google Meet is an important video conference platform that can be used in distance education, which has become popular during the pandemic period.

When the literature is examined, the existence of academic publications for this platform draws attention; Almeida, Nunes and Silva (2021), in their study examining Google Meet and Google Form tools in education during times of social isolation analyzed the experience of using both platforms as collaborative tools. According to the results of the study carried out within the scope of qualitative research, through these two virtual platforms, it was possible to get efficiency from the learners in the learning and teaching processes during the social isolation period. However, as a recommendation, emphasis was use blended learning because of the higher probability of success due to limitations of students and teachers towards technological access.

- **Google Classroom:**

Google Classroom, working with Google Drive and Gmail, it is a platform that provides teachers to easily assign and organize homework, provide feedback efficiently, and communicate easily with their students. With Google Classroom, which provides teachers to create classrooms in a virtual environment, teachers can create classes according to different courses and the topics of these courses. Students can register for classes through the Google Classroom application, follow the announcements, share their assignments, and make evaluations by creating questions in these posts.

When the literature is examined, the existence of academic publications for this platform draws attention; Al-Maroof et al. (2018) in their study examining analysis and evaluation of the effectiveness of Google Classroom's active learning activities for data mining subject under the Decision Sciences program. A total of 100 valid unduplicated responses from students who enrolled data mining subject were used in this study. The results indicated that majority of the students satisfy with the Google Classroom's tool that were introduced in the class. In particular, comparative performance is good in the areas of ease of access, perceived usefulness, communication and interaction, instruction delivery and students' satisfaction towards the Google Classroom's active learning

activities. Okmawati (2020) discussed the Google Classroom application used within the scope of online learning in Indonesia during the pandemic process. This paper was compilation research that describe the phenemenon of using Google Classroom. The result of the research finding prove that it is effective to use this platform. It is one way to be considered by the schools and teachers to provide students by e learning that can be attracted for the students, while the process of teacher learning move to virtual classes.

- **Google Alerts:**

Google Alerts is a free Google tool that notifies about a topic want to follow, about the name or any business brand, by e-mail. The application is a service that can be used by subscribing via e-mail. The user decides which content to receive via a small form. Editing and deleting operations can be performed on the records later on. Google Alerts targets are sorted:

* Follow reviews about the brand

* See what blogs and news sites are saying about competitors

* Monitoring important changes and trends in the industry

* Finding new channels to contribute to industry related content

When the goals of Google Alerts are examined, it is thought that it will be a useful tool that can be used to follow the progress in business life rather than the education sector.

- **Google DOCS:**

Google Docs or Google documents, is a document and file editing service that can be used free of charge by people who run their business via the internet. Users can do everything they can do through office programs through this service of Google. Users can also open a file edited from Microsoft Office programs via Google Docs. File sharing, offline file editing, creating files, slides and forms are among the other features of the application.

- **Google Blogger:**

Blogger is a content management system that is extremely popular in the world. Blogger system is an advanced Content management system offered free of charge by Google. There are thousands of bloggers around the world and since this system is very easy to use, the number of users continues to increase. The Blogger system makes users a website owner completely free of charge. It is a highly reliable and high quality system because it is a completely Google service. This system only asks for an e-mail address from its users during registration and automatically directs users to the website setup screen. Considering the education sector:

* Teachers to create blogs and share it with their students safely and privately.

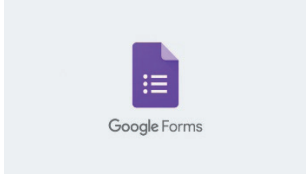
* Blogs can be a useful tool for teachers interested in enhancing their students' communication and digital citizenship skills.

Majumder (2013), created Online Discussion Based Learning on Google Blogger for Introductory Programming Course and evaluated the application within the scope of the course. In this study, administered online blogging sessions (using Google blogger) in a class of first year engineering undergraduates for the Introduction to Programming course. As a results it has been revealed that the use of Google Blogger in the relevant course has positive effects on students' motivation, learning and participation perceptions.

- **Google Jambord:**

With its smart whiteboard model device called Jamboard, it managed to show itself in this area as well. Looking at the appearance of Google jamboard devices, it resemble a giant tablet. It has a stunning 55-inch 4K giant screen connected to the cloud infrastructure. It provide great convenience to users especially in office presentations and situations where brainstorming is required. Although Google targets the corporate market with this product, it has designed a useful tool even for students. The Jamboard application, powered by Google Cloud, allows to strengthen collaboration and interaction among students. Students using tablets have access to rich editing tools and have the opportunity to collaborate with

other students or educators. It is possible to access this application even from a web browser. All these ease of use, simple but effective design made it possible to adopt Google Jamboard quickly.

- **Google Form:** 

Google Forms is an online form and survey creation program that offers completely free use, where different types of survey questions can be prepared with various themes, and then the answers can be viewed through analysis, and answers can be collected quickly.

What Can Be Done With Google Forms?

* With Google Forms, you can prepare a survey with short-answer questions, questions in the form of paragraphs, questions with multiple answers, questions with a drop-down menu.

* Google Forms allows you to quickly collect data such as personal opinions and e-mails.

* Appropriate themes can be added to the prepared questionnaires.

* Youtube videos and images can be added to the surveys.

* Questions can be prepared and answered from personal computers, tablets and mobile devices.

* You can view your survey data in detail in E-tables.

* With collaborative work, users can simultaneously design a survey together.

* You can define correct answers and point values to the prepared questions.

* You can optionally request e-mails from responding users.

* You can add compulsoryquestions to your form.

* You do not need to take a backup, as all added questions are automatically saved on Drive.

- **Google Expeditions:** 

Google Expeditions is a comprehensive education app that allows teachers and students to explore the world with over 1,000 virtual reality (VR) and 100+ augmented reality (AR) tours. With these tools, you can swim with sharks, go into space, and more without leaving the classroom.

VR Tours: Using mobile devices and VR glasses, teachers and students can virtually explore art galleries or museums, swim underwater or venture into space without leaving the classroom. AR Tours: Teachers can move objects into the classroom using mobile devices. In this way, students can use their mobile devices to see and navigate 3D objects as if they were physically present in the classroom. Virtual Tours: Teachers and students can use Virtual Tour to create virtual reality tours and publish them to Poly. Teachers can add tours they create in Virtual Tour to Expeditions to guide students through their lessons. Also, tours that teachers like on Poly or share on Expeditions are automatically added to the Expeditions app.

Yevhenii and Zhanna (2018), in their study discussed the use of Google Expeditions as part of STEM education in Ukraine. The features of the augmented reality and its classification are described in this paper. A comparison, analysis, synthesis, induction and deduction was carried out to study the potential of using augmented reality platforms in the educational process. As a result, it has been emphasized that augmented reality tools increase students' motivation to learn and will be the most appropriate technology to be used for STEM education. However, the lack of awareness of this system by the teachers, lack of guidance, lack of Ukrainian language interface and the lack of response of the Ministry of Education and Science of Ukraine to the education programs were cited as problems.

Google alternative applications to be used in daily life or social life are listed below:

- **Google News:**

Google News is a news service developed by Google in 2002, in which quality news and articles are collected and regularly presented from news sources such as more than 50,000 publishers, magazines and websites in 35 languages. This service is defined as the world's biggest news service and can be obtained as an application from channels such as iOS and Android, as well as online. Users can search for topics (science, technology, health, sports etc.) of interest to this application on this platform and obtain information.

- **Google Shopping:**

Google announced at its Marketing Live event in May 2019 that the new Google Shopping will integrate the existing Google Express marketplace into a revamped shopping experience. In the US, Google Shopping is accessible from the web and mobile apps, available on Android and iOS. Google Shopping is free and requires a personal Google account in order to purchase from the platform.

- **Google Travel:** 

Google Travel, formerly Google Trips, is a trip planner service developed by Google for the web. It was originally launched as a mobile app on September 19, 2016 for Android and iOS, which was shut down on August 5th, 2019 and replaced by the new Google Travel web app which also includes Google Flights and Google Hotel Search.

- **Google Maps:**

Google Maps, which is one of the applications found on almost everyone's mobile phone, is mostly used for navigation purposes. In addition, users can feel as if they are in the place where they are traveling, thanks to the function of viewing all parts of the world in 3D. Thanks to this free application, users can view and navigate step-by-step streets and other open spaces in a city of their choice.

RESULTS & DISCUSSION

In this research, Google tools, which will bring many advantages in education and daily life, it has been discussed how it can be used effectively especially during the pandemic process. In this context, the usage areas of a total of 20 Google tools and their integration into education are discussed. In this study, Google tools, which are frequently used in educational

environments within the scope of both the digitalization process and the necessities of the pandemic period, are discussed in depth. In this context, general use of Google tools and applications and integration processes into education are mentioned.

Considering the literature at the end of the research, it has been revealed that Google Keep, Google Duo, Google Meet, Google Classroom, Google Jamboard, Google Blogger, Google Form and Google Expeditions applications are frequently used in educational institutions to conduct online education during the pandemic process. In addition, it has been determined that Google Calendar, Google Photos, Google News, Google Shopping, Google Travel, and Google Maps applications provide advantages to their users in daily and social life.

When the improvements are examined at the beginning of the pandemic process, Google announced a number of new features to help make online education easier, including updates to its Google Meet video conferencing product and a new tool that can help with homework just by taking pictures from the phone. In this context, Google announced that Meet will allow meeting with up to 49 users during this period. These features were activated in September 2020. In addition to an integrated whiteboard in the Meet application, new applications are also included that will bring new controls for moderators. Google Jamboard is one of the integrated tools. When another application is examined Google Classroom; similarly, it has been a tool frequently preferred by educational institutions during the pandemic period. GC is opened for use with the application request submitted by higher education institutions to Google. Classroom distance education service is also provided within the GSuite service, especially for higher education institutions using the Gmail infrastructure, which is the e-mail service of the Google company.

As a result, Google tools are one of the most effective services that can be used in learning and teaching environments, especially in the transition to digital transformation during and / or at the end of the pandemic process. In this sense, considering the convenience in the integration process of these tools, it is predicted that they are effective applications that can be used for all levels in learning and teaching environments.

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Chapter 6

THE PLACE AND IMPORTANCE OF MUSIC TECHNOLOGY IN COMPOSITION EDUCATION IN TURKEY

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INTRODUCTION

Digital video cameras, video editing software, and the new ways of reaching audiences, such as streaming and online sales and distribution, have made filmmaking accessible to many people. Digital video, when compared to film, is very inexpensive. The cost of hard drives is much lower than film stock and processing. Additionally, today it is possible to edit a movie entirely on a computer, even on a laptop, which saves the producer post-production studio rental costs. Furthermore, social networks such as Facebook and Instagram, and video sharing sites like Vimeo and YouTube, allow filmmakers to market their films at no cost. Finally, online sales and streaming video services help to reduce costs incurred by manufacturing and physical distribution significantly. Digital technology in the 21st century has made filmmaking much more accessible than back in the last century. As a result, a great many low- or no-budget films and television programs, including dramas, documentaries, reality TV, and sports shows, are now being seen around the world.

Film, television, video, and radio, regardless of their transmission format (cable, broadcast, streaming and so forth) can be referred to as 'traditional media'. Yet a new industry has flourished: that of 'new media'. There is an ongoing discussion about the definition of this broad term. In this text, 'new media' refers to applications and programs that are interactive, networkable and supportive of user participation. New media, as Rohlinger (2019) suggests, relies on digital technologies such as social media, online games and applications, smartphone applications, collaborative productivity applications and the like. Where traditional media offers passive consumption, new media offers interactivity and a more powerful sense of user engagement and greater user choice (Lister et al. 2003). New media, as Manovich (2001) suggests, places new cognitive and physical demands on the consumer. Rodowick (2001) states that new media produces a new audio-visual regime in the technological and semiotic convergences of film, video, computer imaging and word processing, and encourages the intermixing of visual, verbal, written, musical, and sonic forms. Manovich (2001) suggests that there are dangers using the concept of interactive media exclusively in relation to computer-based media, but in this paper, the term 'interactive' is used as it is in the industry to mean the ability for the user to intervene in computing processes and to see the effects of the intervention in real-time (Lister et al. 2003) within the multiple opportunities that digital media offer us (Lister et al. 2003).

The need for music in media and a look at the state of the industry

The discussion of the similarities and differences of traditional and new media is beyond the scope of this text; however, it is safe to say that

one of the common elements in all forms of media is music. Apart from a few exceptions, all media productions, television dramas, films, computer games and such use music. This makes 'music-for-media' a huge market that attracts many music professionals, including recently-graduated musical composition majors.

In productions with high budgets, the job descriptions of everyone, including the composers, are clear. Furthermore, there is not only a composer, but also a large music department consisting of a conductor, an orchestrator, a music supervisor, producers, score consultants, music preparation assistants, and post-production audio professionals such as music editors, audio recording engineers and mixers. In low-budget productions, on the other hand, the size of music departments is usually much smaller, and the boundaries between the job descriptions begin to blur. For example, for a film with a very tight budget that is set to be released for video only in a smaller network or streaming service, it is not unusual for the composer to handle all the music duties himself, including the arranging, MIDI sequencing, performing and so forth, with his/her assistants handling the music editing and recording etc.

Then there are very low, or even no-budget productions in which one person wears many hats. In this type of production, the composers not only write and produce the music but also handle sound design duties as well. Today, it is not uncommon to see advertisements on websites placed by small production companies or filmmakers looking for a 'composer/sound designer' or a 'composer that can also work with sound effects'.

While musical composition and sound design seem like two different areas, advertisements like these make sense, as trusting a composer with the sound portion of the movie is probably a much better idea than trusting a video person who knows very little or nothing about sound. Contrary to what most people (including film and video professionals) think, sound design is not only a technical process. Sound design indeed involves a high level of audio expertise and skills, but along with that, a sound designer, or an audio professional working for film and TV, also needs knowledge and a solid understanding of the relationship between sound and image, the categories of sound and music in cinema, diegetic and non-diegetic sounds, and onscreen and offscreen sounds. Composers who work for film and television have a basic understanding of how music and, to a certain degree, sound work with the picture, and they are also competent users of audio software and equipment. That is the reason why trusting a composer with the sound of a visual project is a better idea than trusting a video person. Usually, in cases like these, the video editor does dialog editing, and the rest of the sound duties are handled by the composer.

Just like in traditional media, in low-budget new media productions, the sound and music crews are also small and the boundaries between the job descriptions tend to blur (Onen, Stevens and Collins 2011). In smaller productions, such as mobile phone applications, the composer usually composes and produces the music and does the sound design. In fact, according to the Interactive Audio Special Interest Group's (IASIG) Game Audio Education Working Group, in a large section of the industry, those companies that develop games, provide applications and content for mobile phones, customer service systems, online media and so forth, have a 'one-person' audio department, and that one person, who has to be a 'jack-of-all-trades,' works across all audio disciplines, from musical composition to audio editing, from sound design to audio implementation (Game Audio Education Working Group of IASIG 2011).

The need for music technology for composers

The above examples demonstrate that musical composition for both traditional and new media is, in nature, highly interdisciplinary. 'Interdisciplinarity' can be defined as any work involving more than one discipline, and the integration of these disciplines into a distinct, new area of inquiry (Wall and Shankar 2008). Today, an artist who composes music for visual media needs not only excellent musical skills to stand out in a crowd of composers, but also a solid understanding of sound and image relationships, knowledge of basic film terminology, or in the case of new media, a good understanding of the concepts of interactivity, and last but certainly not least, music technology skills.

It should be noted that the term 'music technology' refers to a broad subject that has meanings that may differ for composers, audio producers, music educators, electrical engineers, computer programmers and so on (Ballora 2003). 'Music technology skills' here refers to the knowledge and experience of using audio equipment—digital audio workstations, multitrack recorders, microphones, mixers, samplers, effects processors and so forth—for musical and creative purposes. Hosken (2011) suggests that there are five main domains of music technology: First, the physical aspects of sound and sound representation; second, audio hardware, digital audio, and computer-based recording, editing, processing and mixing; third, MIDI hardware, MIDI messages, and MIDI sequencing; fourth, electronic sound production using sampling and synthesis; and fifth, computer notation and computer-assisted instruction. As a special note although the term 'music technology' is often used interchangeably with 'audio technology,' and although they are similar in some senses, they are also different. Music technology refers to the technology used for musical purposes only, while audio or sound technology, on the other hand, may refer to the technology used for non-musical purposes, such as sound design for film.

As stated above, 'music-for-media' is a huge market that attracts many music professionals, including recently-graduated musical composition majors. This raises the question of whether schools and faculties that offer musical composition degrees should also incorporate courses aimed at musical composition for media, and, if so, what types of courses should be offered.

As of a special note, there has been a change in the expectations of students on college and university level music degrees within the last 20 years because there is now less of a distinction between music technology/ music production and the study of music (Carugo 2021). It should also be noted that technology evolves at an extremely rapid rate, and "the use of what were once considered 'advanced' techniques in this field are rapidly becoming tools that students routinely incorporate into their own sonic practices, expanding the 'Jack of All Trades' mentality (Hamilton 2015). Additionally, as audio production has become a global endeavor, many audio producers have embraced remote audio production workflows (Bielmeier, 2020). All these arguments should be incorporated in the discussions during the process of re-designing curriculums, or at least course syllabi, in music schools and faculties.

The aim of this study

This study investigates the status of music technology in musical composition undergraduate degree programs in universities in Turkey. It questions the approaches towards, and the place and importance of, music technology education in these degree programs through surveys targeted at educators and other related persons. The aim of this study, which is the first of its kind ever conducted in Turkey, is to contribute to the remodeling of the musical composition education in Turkish universities according to the needs of the 21st century.

METHOD

The data of this descriptive research have been gathered as a result of thorough examination of the related sources as well as the preparation and the application of the survey. The purpose of descriptive analysis used in qualitative research is to present the data obtained as a result of interviews and observations to the reader in an organized and interpreted way. Data are classified, summarized and interpreted according to predetermined themes (Yıldırım and Şimşek, 2008).

The survey, which includes 16 questions specified below, was sent to schools and departments that award undergraduate academic degrees (bachelors) in the field of composition. (12 schools in total) These 12 universities where composition educators can be reached and surveys sent are:

1. Başkent University
2. Bilkent University
3. Çukurova University
4. Dokuz Eylül University
5. Hacettepe University
6. İstanbul University
7. İTÜ Dr.Erol Üçer Centre for Advanced Studies in Music (MIAM)
8. Kocaeli University
9. Mersin University
10. Mimar Sinan University
11. Samsun Ondokuz Mayıs University
12. Uludağ University

The questions asked to composition educators are listed below:

01- Gender?

02- Age Range?

03- Do you use music technology in your courses?

04- Do you think it's necessary to have music technology in your courses?

05- Do you think there should be film musical composition courses in musical composition education?

06- Do you agree with the idea that in modern education, it is necessary for a composer candidate to write his piece of music for acoustic instruments in an electronic environment?'

07- Do you agree with the idea that there should be a specialized film musical composition education program in addition to traditional musical composition education programs?

08- Please rank the music technology classes in the order of importance which could take part in musical composition education in Turkey apart from a course in which basic information on how to record sound and music is taught and that can be considered as essential in the 21st century.

09- Do you agree with the idea that composition students' knowledge on music technology and their using music technology will affect their education in a positive way?

10- Do you think your students' knowledge on music technology will affect their future career positively?

11- Do you think music composition education in Turkey should be technology supported?

12- Do you think being familiar with technology from an early age will have positive effects on musical composition education and so it will be preferred?

13- Do you think technology-based musical composition education depends on the individual's financial situation?

14- Do you think technology-based musical composition education affects creativity in music?

15- Do you agree with the idea that it is necessary for the educators who will be teaching musical composition education involving music technology to have a qualification in this field?

16- Do you agree with the idea that technology-based musical composition education could affect the individual's instrument playing badly?

The survey was sent to a total of 36 educators who teach musical composition education in these schools, 30 of whom sent feedback. An online version of the survey, which was created on a website called SurveyGizmo, was shared via certain social media platforms, namely Facebook, Twitter and Google+. The online version did not include the third question 'Do you use music technology in your courses?' which was directed to the lecturers only. The individuals who were teaching musical composition education were asked not to take part in the online version of the survey. Except for the composition educators, 252 participants answered the questions on the web site called SurveyGizmo. Therefore, it was possible to learn the views of not only composition educators but also non-educator musicians on music technology and a comparison was made between them.

FINDINGS

In this part, the survey results are presented with tables and interpreted in accordance with the aim of this research. The participants who took part in this survey are named the 'educators' and 'other participants' or 'others'.

Table 1. *Gender distribution of the participants:*

Gender	Educators		Other Participants	
	Frequency (f)	Percent (%)	Frequency (f)	Percent (%)
Female	4	13.33	56	22.2
Male	26	86.66	196	77.8
Total	30	100	252	100

Table 1 shows the gender distribution of the participants. In both groups, educators and the others, the majority of the participants were male.

Table 2. *Age ranges of the participants:*

Age Range	Educators		Other Participants	
	Frequency (f)	Percent (%)	Frequency (f)	Percent (%)
15-25	0	00.00	95	37.69
25-35	12	40.00	112	44.44
35-45	14	46.66	38	15.07
45-55	4	13.33	6	2.38
55 and over	0	00.00	1	0.39
Total	30	100	252	100

Table 2 shows the age ranges of the participants. For the educators, the largest group is 35-45, whereas the average age span of the other participants is younger.

Table 3. *The usage of music technology in the courses by the instructors.*

Usage	Frequency (f)	Percent (%)
Yes	26	86.67
No	4	13.33
Total	30	100

The response to the question 'Do you use music technology in your courses?' Table 3 shows that music technology is being used in courses a great deal. Due to its content, this question was directed only to the educators.

Table 4. *The necessity of music technology classes in musical composition education.*

	Educators		Other Participants	
Agreement	Frequency (f)	Percent (%)	Frequency (f)	Percent (%)
Completely	7	23.33	87	34.52
Mostly	17	56.67	100	39.68
Partly	5	16.67	56	22.22

Little	0	0.00	3	1.19
None	1	3.33	6	2.38
Total	30	100	252	100

The response to the question, 'Do you think it's necessary to have music technology in your courses?' Table 4 shows that a vast majority of educators and participants agree 'mostly' and 'completely' that music technology classes should be included in musical composition education. It can be seen that this data is consistent with the data obtained from the answers given to the first question.

Table 5. *The agreement on whether courses targeted to film musical composition should be included in musical composition education.*

	Educators		Other Participants	
Agreement	Frequency (f)	Percent (%)	Frequency (f)	Percent (%)
Completely	10	33.33	94	37.30
Mostly	9	30.00	86	34.12
Partly	5	16.67	55	21.82
Little	3	10.00	9	3.57
None	3	10.00	8	3.17
Total	30	100	252	100

The response to the question 'Do you think there should be film musical composition courses in musical composition education?' Table 5 shows that more than half of the educators and other participants are in favor of soundtrack composing lessons.

Table 6. *In modern education, the requirement of a composer candidate's writing his piece of music for acoustic instruments in an electronic environment.*

	Educators		Other Participants	
Agreement	Frequency (f)	Percent (%)	Frequency (f)	Percent (%)
Completely	9	31.03	66	26.19
Mostly	8	27.59	76	30.15
Partly	6	20.69	72	28.57
Little	2	6.90	19	7.53
None	4	13.79	19	7.53
Total	29*	100	252	100

*One educator did not respond to this question.

The response to the question 'Do you agree with the idea that in modern education, it is necessary for a composer candidate to write his piece of music for acoustic instruments in an electronic environment?' Table 6 indicates that the educators have differing views on the idea that a piece of music composed for an acoustic instrument should be written in

an electronic environment. Just like the educators, the other participants have differing views.

Table 7. *The necessity of a specialized film musical composition education program in addition to traditional musical composition education programs.*

	Educators		Other Participants	
Agreement	Frequency (f)	Percent (%)	Frequency (f)	Percent (%)
Completely	18	62.07	101	40.23
Mostly	9	31.03	91	36.25
Partly	2	6.90	40	15.93
Little	0	0.00	10	3.98
None	0	0.00	9	3.58
Total	29*	100	251*	100

*One educator and one other participant did not respond to this question.

According to the response to the question 'Do you agree with the idea that there should be a specialized film musical composition education program in addition to traditional musical composition education programs?' In Table 7, nearly all the educators and other participants agreed that it is necessary to train their students in soundtrack composing.

Table 8. *The distribution of music technology classes in the order of importance which could be included in musical composition education in Turkey (apart from a course that covers basics of music technology).*

	Educators		Other Participants	
Courses	Frequency (f)	Percent (%)	Frequency (f)	Percent (%)
Film Music	134	18.16	958	14.77
Film Theory	101	13.69	873	13.46
Popular Music	78	10.57	929	14.32
Physics of Sound	153	20.73	1083	16.70
Basic Electricity and Electronics	90	12.20	921	14.20
Video Technologies	83	11.25	791	12.19
Audio and Video Synchronization	99	13.41	929	14.32
Total	738	100	6484	100

In Table 8, the respondents were asked to 'rank the music technology classes in the order of importance which could take part in musical composition education in Turkey apart from a course in which basic information on how to record sound and music is taught and that can be considered as essential in the 21st century'. As it can be seen, 'Physics of

sound' was identified as the most important course at 20.73%. 'Film Music' came second at 18.16%. At 13.69%, 'Film Theory' was in third place. 'Audio and Video Synchronization' and 'Basic Electricity and Electronics' were the fourth and the fifth choices at 13.41% and 12.20% respectively. 'Video Technologies' and 'Popular Music' were the last two at 11.25% and 10.57% each. At 16.70%, 'Physics of Sound' was the first-ranking course in the results of the other participants as well, followed by 'Film Music' (14.77%), 'Popular Music' and 'Audio and Video Synchronization' (both 14.32%), 'Basic Electricity and Electronics' (14.20%), 'Film Theory' (13.46%), and 'Video Technologies' (12.19%).

Table 9. *Agreement with the idea that composition students' using music technology will affect their education in a positive way.*

	Educators		Other Participants	
Agreement	Frequency (f)	Percent (%)	Frequency (f)	Percent (%)
Completely	16	53.33	146	58.4
Mostly	10	33.33	77	30.8
Partly	3	10.00	19	7.6
Little	0	0.00	2	0.8
None	1	3.33	6	2.4
Total	30	100	250*	100

*Two other participants did not respond to this question.

According to these results in Table 9, most of the educators who answered the question 'Do you agree with the idea that composition students' knowledge on music technology and their using music technology will affect their education in a positive way?' agreed that using music technology would affect the education of composition students positively. The others also agreed with the educators.

Table 10. *Agreement with the idea that students' having knowledge on music technology will affect their career in the future positively.*

	Educators		Other Participants	
Agreement	Frequency (f)	Percent (%)	Frequency (f)	Percent (%)
Completely	16	53.33	164	65.07
Mostly	11	36.67	67	26.58
Partly	3	10.00	15	5.95
Little	0	0.00	4	1.58
None	0	0.00	2	0.79
Total	30	100	252	100

In Table 10 the answers to the question 'Do you think your students' knowledge on music technology will affect their future career positively?'

asked to the educators are given. The question above was asked to the others in the following modified form: 'Do you think composition students' knowledge on music technology will affect their future career positively?' According to the data, in addition to affecting students' education positively, most of the educators and other participants agreed with the idea that having knowledge on music technology would affect students' future careers positively.

Table 11. *The idea that musical composition education should involve technology.*

	Educators		Other Participants	
Agreement	Frequency (f)	Percent (%)	Frequency (f)	Percent (%)
Yes	25	89.29	239	94.84
No	3	10.71	13	5.15
Total	28*	100	252	100

*Two of the educators did not answer this question.

Nearly all the educators who answered the question 'Do you think music composition education in Turkey should be technology supported?' agreed that musical composition education in Turkey should be technologically-supported. The other participants also overwhelmingly agreed with this idea.

Table 12. *Agreement with the idea that being familiar with technology from an early age will have positive effects and so it will be preferred.*

	Educators		Other Participants	
Agreement	Frequency (f)	Percent (%)	Frequency (f)	Percent (%)
Completely	5	16.67	93	37.05
Mostly	7	23.33	90	35.85
Partly	12	40.00	44	17.52
Little	3	10.00	15	5.97
None	3	10.00	9	3.58
Total	30	100	251*	100

*One of the other participants didn't answer the question.

The question 'Do you think being familiar with technology from an early age will have positive effects on musical composition education and so it will be preferred?' Table 12 produced differing opinions among the educators. However, most of the other participants agreed that being familiar with technology would have positive effects on musical composition education.

Table 13. *Agreement with the idea that technology-based musical composition education depends on the individual's financial situation.*

	Educators		Other Participants	
Agreement	Frequency (f)	Percent (%)	Frequency (f)	Percent (%)
Completely	5	16.67	86	34.12
Mostly	9	30.00	99	39.28
Partly	12	40.00	49	19.44
Little	4	13.33	12	4.76
None	0	0.00	6	2.4
Total	30	100	252	100

The question 'Do you think technology-based musical composition education depends on the individual's financial situation?' Table 13 produced differing opinions. When the previous data and this one are taken into consideration, it could be said that according to the educators, age and financial situation aren't really important factors in technology-based musical composition education. However, the other participants agreed that it was important. This shows that there is a slight difference between the educators' and the other participants' opinions on these subjects.

Table 14. *Opinions about whether technology-based musical composition education affects creativity in music in positive way.*

	Educators		Other Participants	
Opinions	Frequency (f)	Percent (%)	Frequency (f)	Percent (%)
Affects completely positively	3	10.34	54	21.42
Affects mostly positively	11	37.93	123	48.80
Affects partly positively	11	37.93	57	22.61
Affects negatively	2	6.90	9	3.57
Does not affect	2	6.90	9	3.57
Total	29*	100	252	100

*One of the educators did not answer this question.

The question 'Do you think technology-based musical composition education affects creativity in music?' Table 14 shows educators agreed that technology-based musical composition education affects creativity in music. Nearly half of the other participants agreed that technology-based musical composition education affects creativity in music positively.

Table 15. *Agreement with the idea that it is necessary for the educators who will be teaching musical composition education involving music technology to have a specialized qualification in this field.*

	Educators		Other Participants	
Agreement	Frequency (f)	Percent (%)	Frequency (f)	Percent (%)
Completely	20	68.97	181	71.82
Mostly	8	27.59	58	23.01
Partly	1	3.45	13	5.15
Little	0	0.00	0	0.00
None	0	0.00	0	0.00
Total	29*	100	252	100

*One of the educators did not answer this question.

In Chart 13, the answers to the question 'Do you agree with the idea that it is necessary for the educators who will be teaching musical composition education involving music technology to have a qualification in this field?' Table 15 indicate that the educators and other participants overwhelmingly agreed with the idea that it is necessary for educators who will be teaching musical composition education involving music technology to have a qualification in this field.

Table 16. *Agreement with the idea that technology-based musical composition education could affect the individual's instrument playing badly.*

	Educators		Other Participants	
Agreement	Frequency (f)	Percent (%)	Frequency (f)	Percent (%)
Completely	1	3.45	13	5.17
Mostly	5	17.24	31	12.35
Partly	8	27.59	69	27.49
Little	6	20.69	65	25.89
None	9	31.03	73	29.08
Total	29*	100	251*	100

*One of the educators and one of the other participants did not answer this question.

Both educators and the other participants had differing opinions on the question 'Do you agree with the idea that technology-based musical composition education could affect the individual's instrument playing badly?' Table 16; therefore, no specific indications on this subject could be determined.

CONCLUSION

According to the study results, 26 of the 30 educators who teach musical composition education in certain institutions in Turkey and 196

of the 252 non-educators who answered the questions by means of social media are male participants. Among the educators, the majority of the participants were aged between 35-45 (14 people) and 25-35 (12 people), whereas the majority of the other participants were aged between 25-35 (112 people) and 15-25 (95 people).

The study has shown that 26 of the 30 educators use music technology in their courses. Both the educators and the other participants agreed that music technology classes are necessary in musical composition education.

19 of the 30 educators (63%) agreed courses on film music composing should be included in musical composition education. The other participants favor it even more (71%). 18 educators are 'completely,' 9 of them are 'mostly' and 2 of them are 'partly' in favor of having a special educational program for soundtrack composing in addition to traditional musical composition education. These results show that educators agreed soundtrack composing should not be included in musical composition education; rather, it should be taught separately.

In both groups the majority (60%) agreed it is necessary for a composer candidate to compose in an electronic environment; only 20% of the educators and 15% of the other participants didn't agree with this. When the educators and the other participants were asked to put the music technology lessons in musical composition education in the order of importance, 'Physics of Sound' was put in the first place. The educators chose 'Popular Music' and the others chose 'Video Technologies' as the least important ones. As the schools teaching musical composition education in Turkey mostly teach classical music, it is natural for 'popular music' to come last.

In the study, both groups agreed that the use of music technology by composition students would affect their education positively. Apart from that, nearly all the educators (90%) agreed that students' knowledge of music technology would affect their future careers positively.

In the study, both groups think that musical composition education should be technology-based. This is similar to the idea that music technology classes should be included in musical composition education.

The educators 'partly' agreed that being familiar with technology at an early age will have positive effects on musical composition education, whereas the other participants mostly agreed with this idea. When the generation gap is considered within these groups, it is natural for the younger participants (72%), who have had higher exposure to technology, to agree with this idea. Similarly, the educators agreed technology-based musical composition education is 'partly' related to the individual's

financial situation, whereas the other participants agreed they are 'completely' related.

This study also showed us that according to the educators, technology-based musical composition education affects creativity in music 'slightly'. However, the other participants think it affects creativity a great deal.

Both groups agreed with the idea that in our day, educators who will be teaching composition involving music technology should be qualified in this field. None of the participants disagreed with this. The common agreement is that music technology education should be taught by professionals in this field.

Finally, in the study, it was generally agreed that technology-based musical composition education wouldn't affect the individual's instrument playing badly.

Suggestions for further studies

The following could be suggested for further studies:

- 87% of the composition educators stated that they used music technology in their courses. This could be studied; the educators' preferences could be determined, and alternatives might be suggested.

- Music technology in musical composition education in Turkey might be compared to that in other countries.

- The question 'Do composition graduates who do not work as academicians need music technology?' could be examined.

- This survey could be conducted with Turkish students who study musical composition education to get a different point of view.

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