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Research Article

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Investigation of the New Generation University Initiative: The Case of Atatürk University*

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Abstract

The aim of the research is to examine the implementation processes and results of the "New Generation University Design and Transformation Project" carried out by Atatürk University in line with higher education reform movements in the context of new generation university standards. Case study, one of the qualitative research methods, was used in the research. Data were collected through document analysis. Documents, archive records, working documents, all news and explanations about the project, project development and evaluation reports, strategy documents, workshop result reports were analyzed as part of the document analysis. According to the results of the review, the areas of improvement in terms of the educational mission of the "New Generation University Design and Transformation Project" are the increase in program accreditation by more than 300 percent, the expansion of program self-evaluation studies, and the elimination of deficiencies in course information packages. The aspects of the project that are open to improvement in terms of the educational mission are; limited program monitoring and updating practices, lack of graduate monitoring systems or inability to obtain effective and efficient results, lack of dissemination of different teaching methods and techniques, the existence of faculties without accredited programs, lack of peer evaluation practices, lack of structuring education, research and social contribution processes in relation to each other. Areas of improvement in terms of the "research" mission of the project are the existence of defined processes and practices for research strategy and objectives, and the establishment of monitoring mechanisms for research processes. On the other hand, there is room for improvement in that the results of the monitoring of research processes are not evaluated sufficiently and improvements are limited, information management systems for monitoring performance indicators are used at a limited level, and practices for developing research competence are limited. The area of improvement for the social contribution mission area of the project is that there are defined processes and practices for the social contribution strategy and objectives. The areas open for improvement are that the results of the monitoring of social contribution processes are not sufficiently evaluated and information management systems for monitoring improvements and performance indicators are used at a limited level.

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* The article is based on the first author's PhD study titled "Investigation of New Generation University Initiatives: The Case of Atatürk University".

INTRODUCTION

Higher education institutions have started a transformation process with the new generation university mentality that is spreading rapidly in the whole world. The transformation that started in higher education has also affected our country and HEC (Higher Education Council) has initiated the process of "delegation of authority" by transferring its authority to universities after establishing regulations on many issues, especially the establishment of boards such as the Higher Education Programs Advisory Board and the Higher Education Quality Board. This decision is intended to increase the quality and speed up decision-making processes in many areas, especially in human resources, research, education and training, in order for university systems to "develop and strengthen their institutional capacity" (YÖK, 2018).

The process of transformation has accelerated in our country with the transfer of authority and well-established universities in the country have been involved in the process. As a new generation university initiative, Atatürk University started the reform process by carrying out the "New Generation University Design and Transformation Project" on February 2, 2018. As part of the project carried out by the university to transform knowledge into value and improve its research performance, the mission areas of "education, research and contribution to society" were blended and a holistic Meta-System was designed by operating common sense processes. Along with the design, short, medium and long term action plans were put into practice. The mission, vision and all practices of the university were updated in the framework of the new generation university. As the results of the project started to be obtained in the process, the eyes turned to the University and the practices gained importance. For this reason, Atatürk University practices were investigated in this study. Studies on higher education reforms in the context of the new generation university, which has an important place in the literature, emphasize the development of higher education or the historical dimension of the reform process. It is expected that the results obtained by examining the practices aimed and realized by Atatürk University in the reform process will lead the university transformation activities that have started in our country and the educational policies of Turkish universities.

CONCEPTUAL FRAMEWORK

Universities have changed their missions with the transformation they have undergone, and new missions have been added to the missions previously grouped under two main headings namely education and research (Doğramacı, 2000; Valimaa & Hoffman, 2008). Universities are now expected to: become an important position in the market and knowledge-based economy (Delanty, 2001), transfer technology, become a center of innovative processes, commercialize knowledge, create collaborative networks (Lazzeroni & Piccaluga, 2003; Hannon, 2013), ensure the adoption of democratic principles in societies, contribute to the modernization of society, meet the need for lifelong learning, contribute to local and regional initiatives, become an important component of the national innovation system, provide trained human resources, support economic growth and conduct interdisciplinary studies (Agrawal, 2001).

Universities have stopped being the only source of knowledge because of the growth in higher education, the increase in the labor force participation rate of the population of the countries, the increase in the level of education, the development of digital technologies in society, education and economy in the world. Technological, scientific, social and economic changes have reduced the validity of traditional education and research methods. At this point, there is a need for new generation universities that support qualified projects and research and integrate innovative and creative learning methods. All these expectations have made it necessary to restructure the education system in general and the higher education system in particular in a flexible, open and powerful way (YÖK, 2006). Due to changing expectations, universities have started the process of transition to the "new generation university" model by shifting away from the traditional university structure. The mission and vision of universities that have transitioned from the traditional structure to the transformation process have

been redefined to include the goal of a new generation university. Universities have started the reform process by considering their own ecosystem within the framework of general trends in the world such as democratization of information and access, digital technologies, integration with industry, global mobility and market demands, national and international funding. During the reform process, universities have reviewed all their practices, institutions, structures, methods, and mechanisms in detail and made structural changes in line with the reforms.

Several factors have pushed universities to the transformation process. The first and most important of these is that many universities aiming to carry out international research and academic studies cannot reach the budgets they need, in other words, the budget allocated exceeds the cost of the research to be carried out. For this reason, universities have started to cooperate with companies that can meet their financing needs. Thanks to this cooperation, academic and industrial research have intertwined, which has led to a change in the relationship between the state and the university. Thus, the relationship between the state and the university has remained within the framework of a cooperation to support only micro-scale research and to train manpower in the quantity and quality that the country needs. As a result of this cooperation, universities started to provide education based on the market economy while training the qualified manpower needed.

The increasing dominance of the market economy has changed the thinking and practices of public administration. Governments that provide public funding for university research have changed their view of the university and started to establish their own research centers to access the science and technology that dominates the market. The number of research centers has increased, especially with the emergence of competitors to public higher education institutions, such as private national institutions, national and foreign partnered certification centers, foreign virtual education providers, and blended education service institutions. Universities with their own research centers started to largely gain autonomy and moved away from public accountability (Arap, 2010; Aypay, 2003; Tekeli, 2003; Wissema, 2014). As universities started to become market-oriented "commercial places managed by bureaucracy like customer-centered companies" through research centers, public universities started to become more entrepreneurial and there was a shift towards the pragmatic university. As a result, the concept of a university focused on market-oriented ideas has emerged. As a requirement of being an entrepreneurial university, these universities started to obtain financing from the market for their financial needs in exchange for the production of market-oriented scientific research and commercial products within the framework of university-industry cooperation (Arap, 2010).

In the pragmatic university, the perspective on the concept of "knowledge" has also changed, and the understanding of knowledge as a goal has been replaced by the understanding of knowledge as a buy-sellable commodity within the framework of market logic. With the rapid buying and selling of knowledge, the importance of having diplomas with international validity and prestige has rapidly lost its importance, while the concept of lifelong learning has come to the fore in order to renew and continuously improve oneself in parallel with the developing technology and the changes experienced (Tekeli, 2003). In addition, the effective use of information technology in research, in the provision of education and training services and in virtual education has fostered a pragmatic approach. The increasing influence of the pragmatic perspective has also forced universities to change. Especially the effective use of information technology in the execution of formal, distance and virtual higher education programs on digital and online platforms, the development of competency-based certificate understanding, and the possibility of providing higher education services to more students, in more diverse environments, more effectively and efficiently are the factors that have led to the change in the understanding of university.

Another reason for the transformation in higher education is the internationalization of universities. Especially universities in developed countries host the best international students and

researchers, forcing higher education systems to change. Better opportunities to study abroad have led to global mobility in the global academic market, both for students and scientists seeking the best career opportunities. To recruit the best researchers, universities have started to compete not only nationally but also internationally to get their share of this mobility (Apple, 2002; Parlar, 2012; Tural, 2002; Wissema, 2014). In this competitive environment, universities in our country have entered a reform process to diversify and increase their sources of income and develop more efficient management models. Atatürk University, one of these universities, has determined the necessary action plans to design the future with a common mind, develop new strategies and create a transformation vision with the New Generation University Design and Transformation Project. The project is especially important in terms of leading the higher education reform movements that accelerated during the Higher Education Council (YÖK) authorization transfer process. The aim of this review is to introduce practices that will guide reform programs for the higher education system in Turkey. For this purpose, the following questions were sought to be answered.

- How do the reform practices of the "New Generation University Design Transformation Project" carried out by Atatürk University comply with the new generation university standards?

- Are the results of the reform practices of the "New Generation University Design Transformation Project" carried out by Atatürk University in line with the new generation university understanding?

In the context of these questions, the study explains the practices of Atatürk University in its efforts to become a new generation university and the results obtained from the practices.

METHOD

RESEARCH DESIGN

Qualitative method was preferred in the study because of the success of qualitative methods in explaining, understanding and interpreting the nature, causes and consequences of situations and events in social sciences. In order to examine in detail, the "New Generation University Design and Transformation Project" carried out by Atatürk University in the context of the new generation university, case study design was used. Case study is a method that can be used in a wide variety of disciplines and has a widespread area in terms of the resources it utilizes and is basically used to examine the subject examined in research in depth and to develop theories and hypotheses (Karasar, 2015). In addition, it has great importance in terms of in-depth description of the subject, providing information, examining the extremes, reaching new findings with the aim of making judgments without the need for generalization, discovery, and re-examination of old information (Merriam, 2013). In case studies, different sources such as observation, interview, document review and questionnaire are generally utilized. In the research, project documents were analyzed within the framework of the case study in order to examine the project in detail. Through document analysis, information on plans, objectives and results were obtained and the essence of the project was analyzed.

In this study, the practices and implementation processes of the "New Generation University Design and Transformation Project" carried out by Atatürk University in line with higher education reform movements were examined in the context of new generation university standards. In order to list the new generation university standards and to examine at what stage Atatürk University is on the way to becoming a new generation university with the project, the literature was reviewed, and the standards were listed on the basis of Wissema (2014). Thus, an initial list of standards was created and the criteria considered necessary from other sources were added to the list. Subsequently, opinions on the standards were received from experts in the field working on the new generation university and some standards were revised based on the feedback received. After the final edits, the data collected through document analysis were examined and analyzed in line with the new generation university

standards in terms of the practices and implementation results of the "New Generation University Design and Transformation Project". The results are discussed based on the findings obtained as a result of the analysis.

DATA COLLECTION

In the research, in which qualitative case study was preferred, document analysis technique was used to collect data. In document analysis, which is one of the most common data collection techniques used in qualitative research, sources such as memories, diaries, archival documents are carefully examined by the researcher (Kümbetoğlu, 2012, p. 145). In the current study, the archival records of Atatürk University's "New Generation University Design and Transformation Project" were analyzed by accessing project documents, working documents, workshop reports obtained from project officers and explanations about the project. The project was analyzed in detail based on the relevant reports. According to the data collected, the transformation of higher education is described in detail. After the explanations, the impact of the university transformation process on Atatürk University and the place and importance of the University in the transformation process are discussed.

The study firstly, the archive records of the project, project documents, working documents, workshop reports obtained from the project managers and explanations about the project were accessed and analyzed. While analyzing the reports of the project, new generation university standards were used. The standards used in this review were listed based on Wissema (2014). Then, national and international literature was reviewed in line with the new generation university and a general list was created. After the literature review, all standards emphasized in the sources and thought to contribute to the research were added to the general list. The reason why Wissema (2014) is the reference point in the general list is that he is considered to be one of the theorists who emphasized the new generation university understanding the most in the literature and expressed some classifications for the first time.

After determining the initial standards in the research, the current literature in the context of the new generation university was reviewed and additions were made to the list. Before finalizing the list, field experts were consulted. It should be emphasized that the experts to be consulted should be selected properly before consulting expert views. Because it is important to appoint people who have the qualifications to contribute to the study in terms of the successful outcome of the research (Garrod & Fyall, 2005; Hsu & Sandford, 2007). In this regard, Skulmoski et al. (2007) listed the characteristics that should be present in the experts to be consulted as "having knowledge and experience in the field, having awareness, being willing to participate, having enough time for participation and having effective communication skills". Accordingly, when choosing experts who published in the field, criteria such as their publications being cited and being indexed in international indexes were taken into consideration.

Another important point after the selection of the expert is the determination of the number of candidates to be consulted for expert opinions. There are different opinions in the literature on this issue. Şahin (2001) and Delbecq et al. (1975) stated that the ideal group should consist of 10-20 people, while Ruppert and Duncan (2017) stated that the error decreased with each participant as the number of participants increased up to 12 and that the ideal number of participants was 30. Gordon (1994), on the other hand, stated that the number of experts in his research consisted of 15-35 people. As a result, this number should be decided according to the purpose of the research and the diversity of the participants, taking into account that there is no specific number in the literature for the size of the expert group and that the participants may not respond to all the forms sent (Williams & Webb, 1994). Accordingly, the expert opinion form was sent to 30 participants, taking into account the purpose of the study, the contribution of the participants to the field, their characteristics, and accessibility, and 19 participants responded.

Based on expert feedback, some criteria were added, some were removed, some were edited, and indicators were added as a result of discussions. In this way, the competencies indicated by the criteria were made clear; the confusion of which criterion could be evaluated by which indicator was eliminated. These indicators served as a reference point when analyzing Atatürk University's New Generation University Design and Transformation Project (NGUDTP) practices and implementation results, which is the purpose of the research. After the addition of the indicators, the final version of the list was presented in the interviews with the vice-rector, who was the head of the project executive team. The list was completed in line with the feedback from the interviews.

Table 1. *Next Generation University Standards and Indicators (NGUS)*

1.	Having a contemporary curriculum • Defined processes used for program design and approval (alignment with education policy, guidelines, procedures and principles, etc.) • The managerial and organizational structure of the curriculum design and approval processes (Committees, process responsible) • Evidence of alignment of program objectives and outcomes with the Turkish Higher Education Qualifications Framework • Evidence of departmental/field-based diversity of practice in distance-blended program design • Evidence of stakeholder engagement in program design processes • Evidence that the design and approval process of programs is monitored and improved
2.	Having an innovative mission and vision • Preparation of policies with relevant stakeholder participation • Statements in policy documents showing the holistic relationship and examples of applications (Emphasis on research in education programs, emphasis on community service in research processes, emphasis on distance education) • Evidence that policies are monitored and evaluated • Having guiding mission policies
3.	Having sufficient infrastructure and equipment in accordance with the updated needs • Development of facilities, infrastructure and equipment in relation to institutional growth (e.g. the relationship between the increase in the number of units and the increase in physical space)
4.	Quality of scientific research • Total points from peer reviews • Ratio of qualified publications made at the university to the number of faculty members • Number of graduates or faculty members who have won the Nobel Prize • Cited publications of faculty members
5.	Having a brand and international reputation • International Faculty Member Ratio (The ratio of the number of foreign faculty members (Professor, Associate Professor, Dr. Lecturer) working at the institution in the relevant year to the total number of faculty members). • Number of international faculty members working at the university • Number of international students studying at the university • Number of highly cited researchers in different fields • Total number of academic fields in which the university publishes articles in high quality journals • High number of TÜBİTAK and EU projects
6.	6. Having the best teaching staff • High number of academic articles and citations • Citations per faculty member (ISI data) • Number of highly cited researchers in different fields • Total number of articles published in the last year • H-index (Top level index) in the last two years
7.	7. Having the best researchers/students • International Student Ratio • Number of students in the top 1000
8.	High level of use of information and technology
9.	Having a multicultural cosmopolitan structure • Number of international students studying at the university • Number of international faculty members working at the university

10. Having a Technopark • Number of Active Companies Owned or Partnered by Faculty Members in Technopark, Incubation Center, and TEKMER • Number of Active Companies Owned or Partnered by Students and Graduates in Technopark or Incubation Center • Number of International Patent Certificates • Number of National Patent Certificates • Number of National and International Patent Applications
11. Having R&D institutions • Supporting entrepreneurship activities • Amount of Funds Transferred to the Agency from National R&D and Innovation Support Programs in the Corresponding Year • Number of Projects Received from National R&D and Innovation Support Programs
12. The management system is constantly renewing itself in line with the needs of the university • Transparent management (Process and criteria for the appointment and promotion of academic staff are determined and open to the public) • Process management mechanisms are monitored, evaluated and improved together with relevant stakeholders. • Defined processes are managed throughout the organization.
13. University - industry relationship • Effective collaboration between industry and professional service providers • Number of research studies conducted based on industry-university cooperation • Ratio of the Fund Amount Received from R&D and Innovation Projects Conducted in Collaboration between University and Industry to the Number of Related Projects
14. Having an innovative leader who is compatible with change
15. Presence of academic freedom
16. Having new generation libraries • Number of publications in the library • Diversity of publications in the library
17. Use of digital platforms
18. Having a career development center
19. Having the necessary funding for scientific studies • Education and research funding is administered by independent intermediaries, not by the state
20. High number of internationally accredited faculties at the university
21. Availability of international mobility • Number of Circulating Faculty Members/Students (As of the last year, the number of institutional staff and students (inbound/outbound) circulating within the scope of Higher Education Council, National Agency and TUBITAK circulation programs
22. Having an adequate infrastructure system for data storage, management and utilization
23. The ability of scientific studies carried out at the university to create value (social, cultural, economic)
24. Adequate accessibility services for students with special needs • Evidence of monitoring and improvement of barrier-free university practices • Mechanisms for disadvantaged groups and special types of assessment, such as online exams
25. Carrying out activities to encourage different faculties to cooperate
26. Carrying out education, research and social contribution activities together
27. Using foreign language effectively • Students are proficient in at least one language • Academics can provide education in a foreign language

DOCUMENTS

In this part of the research, the practices and implementation results of the "New Generation University Design and Transformation Project" carried out by Atatürk University were evaluated in line with the new generation university standards. In the research, all documents, archive records, working documents, explanations and all news about the project on atauni.edu.tr website were examined. In addition, project development and evaluation reports, declarations, strategy documents, workshop outcome reports and all other official or unofficial documents related to the research topic were analyzed.

FINDINGS

The first of the questions determined in line with the main problems of the research is; to what extent are the practices of the NGUDTP in compliance with the new generation university standards? In this part of the study, the document analysis findings obtained for the first question are presented.

Atatürk University (AU) has been conducting NGUDTP since February 4, 2018 in order to transform knowledge into value and improve research performance. Within the scope of the project, 19 search conferences were held, 230 experts from outside the university and 926 experts from within the university were invited to these conferences, and a Holistic Meta-System was designed with a common mind to create a multiplier effect in higher education that blends the mission areas of "education, research and contribution to society". This design was supported by short, medium and long term action plans and put into practice. Some of the projects implemented by Atatürk University with YNÜTDP are listed below and examined in the context of new generation university standards.

1. LEARNING EXCELLENCE MODEL IMPLEMENTATION AND EDUCATION PROGRAMS TRANSFORMATION PROJECT

Along with the project, the university has carried out the 'Learning Excellence Model Implementation and Education Programs Transformation Project' in order to ensure that the quality level of the undergraduate and graduate education program is international and that the program content includes up-to-date and innovative educational pedagogies. Thus, it is aimed to realize a student-centered learning experience and to comprehensively gain the competencies expected from graduates in working life. "The implementation of the model covers all undergraduate, graduate, distance and open education programs. The project aims to review and redesign programs; provide programs that continuously improve instructor competence; implement methodologies to improve learning resources and environments; and monitor programs with performance criteria while receiving regular feedback through student, graduate and employer surveys. In line with the feedback, some courses are expected to be added to the program, some are expected to include new content and some courses are expected to be removed. THEQC internal and external quality assessments are also considered as part of this process. Having initiated the accreditation process, the University is designing a comprehensive transformation of educational programs through the Learning Excellence Project. A large part of this design has been achieved. With the project, which aims to review the curricula in all faculties of the university, the program renewal process has been completed in some faculties (Structural Transformation Practices, 2020)". Some courses that could be a burden in teaching were removed and replaced with elective courses.

As a result of examining the new educational policies in the Learning Excellence Model in terms of the policies of graduate programs, the following policies were determined and implemented; reducing the number of programs, including current and priority programs, gathering similar programs under a single roof, removing departments that cannot provide undergraduate education from graduate programs, increasing the number of interdisciplinary programs, employing faculty members with industry experience, increasing the admission criteria for programs, reducing the number of students per faculty member, cooperating with different universities in Turkey and abroad, and providing some of the graduate courses by distance education method, departments to take the initiative and organize a department from each faculty to provide English language education; to create brand programs in the fields of basic sciences, health sciences, social sciences and educational sciences; to add entrepreneurship, innovation and project management courses to the program in graduate education; to make it compulsory for students to take courses from different disciplines; to encourage multidisciplinary joint theses; to encourage multidisciplinary studies with formations such as R&D Café; to increase the course credit hours of students; to focus on solving the problems of the region, then the country and the world in the theses; focusing on the solution of the problems of our region, then our country and the world in priority areas (New Generation University Design and

Transformation Project Final Report, 2020). In addition, when undergraduate programs are examined; policies such as periodic renewal of the program, structuring common elective courses, increasing accreditations, teaching common and basic courses with the support of technology, formation program application for faculty members, student-centered education and supporting the individualization of education have been determined. When these policies are evaluated in terms of new generation university standards, they overlap with the 1st standard "having a contemporary curriculum", the 8th standard "high level of use of information and technology", the 17th standard "use of digital platforms", and the 20th standard "the number of internationally accredited faculties in the university".

2. NEW GENERATION MASTER'S DEGREE

The focus topics of the new generation master's programs are intended to be related to one of the United Nations Sustainable Development Goals (SDGs) and the University's priorities of "Large Scale", "Internationalization", "Digitalization". By designing the master's research question in relation to these topics, the theses are expected to be interdisciplinary, multidisciplinary and transdisciplinary. For instance: Combining engineering and a social science field. This practice is in line with the 25th standard of the new generation university standards, which is "conducting studies to encourage cooperation between different faculties". In addition, each program is planned to include "distance education" and/or a reverse-face education application. This practice is in line with standard 1, "evidence of department/field-based application diversity in distance-blended program design", which is one of the indicators of standard 1, "having a contemporary curriculum".

Master's degree programs are categorized into four main categories according to their focus on the University's missions of education, research and contribution to society. The first category is Non-Thesis Master's Programs where education is the priority. The second and third categories are "research and contribution to society" focused programs. The fourth category is Fusion Master's Programs where the missions of "education, research and contribution to society" are intertwined. Atatürk University has implemented the New Generation Master's Design project in order to increase the weight of Fusion Master's Programs in the institutes. With this project, it is aimed to specialize the student in at least one field, to have master's programs that establish a relationship with the sector or society, and to have master's programs that progress to doctoral programs. When evaluated from this point of view, the indicator of the 2nd standard, "having an innovative mission and vision", is in line with the "statements and examples of practices that show a holistic relationship in policy documents".

3. STRUCTURING THE CAREER PLANNING AND GRADUATE MONITORING APPLICATION DEVELOPMENT CENTER

The Career Center was established to support students in planning and developing their careers. With the Career Center, the alumni database is expanded and there are applications to increase interaction with graduates. Thus, it is aimed to structure the integration processes with the graduates of Atatürk University. The center also carries out the academic career follow-up of graduate students. When the activities of this center are considered in terms of new generation university standards, it is seen that it complies with the 18th standard, "having a career development center".

4. NEXT GENERATION PERFORMANCE CRITERIA AND ASSIGNMENT SYSTEM PROJECT

A performance management system was developed to support faculty members in improving their academic performance. The system, which consists of a new generation of performance criteria, has also renewed the appointment criteria based on these performance criteria. In line with this practice, it is aimed to encourage publications, research projects and social contribution activities. In terms of the new generation university standards, these practices are in line with the 12th standard "the management system is constantly renewing itself in line with the needs of the university" and the

indicator "the processes and criteria for the appointment, promotion and assignment of academic staff are determined and open to the public".

5. ON-SITE INTERNATIONALIZATION

The aim of the studies carried out within the scope of Internationalization in Place is to facilitate foreign language learning opportunities on a campus with international qualities and to implement a renewed curriculum within the scope of internationalization. Through the international networks and partnerships established through the project and the services offered to international students and researchers, the University aims to both increase its research output and qualify its foreign language education.

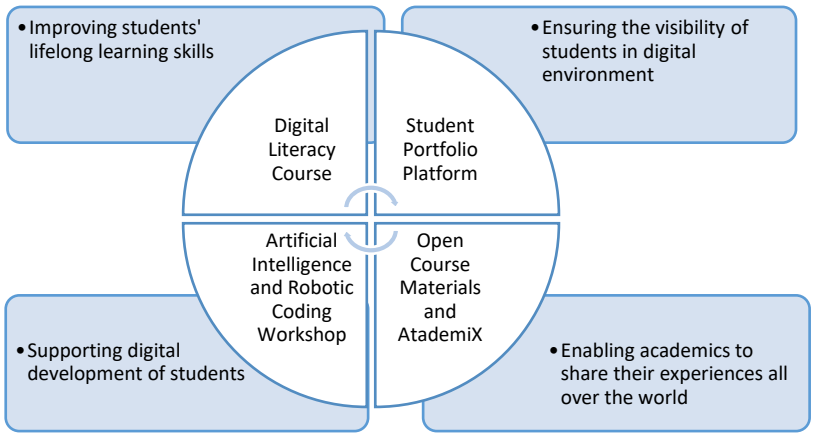
In order to improve and expand English language education across the University, the project has been carried out in four different categories: designing the curriculum approach, structuring the English preparatory school, designing English language support programs for undergraduate and/or graduate programs in English. In all processes, it is envisaged that modern technological methods will be added to English education, extracurricular learning opportunities will be created and foreign language learning will be encouraged in general. In addition, the University continues to make improvements to open undergraduate and especially graduate programs in foreign languages. These investments in foreign languages are intended to attract international students and faculty members. When these practices are considered in the context of the new generation university, it is seen that the university meets the 5th standard of "having a brand and international reputation" and the 27th standard of "using foreign language effectively".

6. DIGITAL TRANSFORMATION AND SOFTWARE OFFICE RESTRUCTURING PROJECT

With NGUDTP, the Digital Transformation Office was established to disseminate digital technologies throughout the University. The office has started to work on topics such as artificial intelligence, nanotechnology, soft boot, 3D printer, educational technologies, academic processes.

The most important point in the "digitalization" process of the University is the digitalization of management processes. Because in this way, official transactions such as documents, applications, registrations and obtaining information are carried out using digital media. In addition, opportunities such as automatically improving the physical conditions of educational environments, increasing the quality of security, and monitoring educational processes are also included in the digitalization process. Atatürk University carries out many projects to realize digital transformation in education. Some of these projects are given as examples in Figure 2 on the next page.

Figure 1. *Projects for Digital Educators, Digital Students and Digital Learning Environments (Digital University Transformation Roadmap, 2022)*



The first objective of the digital transformation project is the digitalization of learning, teaching and assessment processes. The aim here is to develop the digital skills of all staff and learners

employed at the university, to create digital learning infrastructures such as virtual learning environment, learning management system and to provide support services for the development of lifelong digital learning habits. Digital transformation can also be used to track the stage of official transactions within the University and to determine the working performance of the staff. These digital support services offered at the University are expected to facilitate the solution of many problems that staff and students may encounter. For an example, it is stated that there are also advantages such as completing document requests in a short time and realizing these processes with electronic documents, effectively increasing service quality and time; ensuring coordination in the execution of business processes of units with digital transformation and facilitating work follow-up.

Along with the digitalization of teaching processes, content and access to information also need to be digitalized. For this purpose, the establishment of systems for knowledge management, development of digital expertise, communication skills and information literacy of the digital library and support staff, data management, learning analytics, digitalization of the data usage process, digital media production and distribution, and support for digital media experts have been initiated. These implementations are aligned with the 8th priority "high level of use of information and technology", the 16th standard "having next generation libraries", the 17th standard "using digital platforms" and the 17th standard "having an adequate infrastructure system for data storage" in terms of next generation university criteria.

7. AGRICULTURE SCHOOL PROJECT

Considering the practices carried out under the project, the leading Agricultural Faculties and programs in the world were examined and compared with ATAUNI and trends were revealed; the programs, programs, quota occupancy rates and base scores of ATAUNI Faculty of Agriculture were examined; new program proposals suitable for accreditation were developed within the framework of common courses of the Faculty of Agriculture; a sustainability course group focused on SDGs was created for the entire Faculty of Agriculture and a module-based new generation curriculum proposal was prepared". Ataturk University's plan to support projects in which the Faculties of Agriculture, Veterinary Medicine and Fisheries, which produce knowledge in education and research in the agricultural field, will work in cooperation and benefit the society is also aligned with the 25th standard of the next generation university standards, which is "conducting studies to encourage different faculties to cooperate".

It is seen that the main issues such as conserving water and managing scarcity, protecting biodiversity and ecosystem functions, promoting recycling activities and sustainable consumption, increasing soil health, which are also within the research areas of new generation universities in the world, are addressed within the priority areas of the School of Agriculture Project. In addition, facilitating access to productive resources, finance and services, connecting small producers to markets, rehabilitating land, encouraging diversification of production and income, increasing the knowledge and capacity of producers are also part of the School of Agriculture Project. These practices are in parallel with the 23rd standard of the new generation university standards, which is "the ability of scientific studies carried out at the university to create value (social, cultural, economic)".

8. STRUCTURING THE COORDINATION DEPARTMENT OF SRC

Forms and documents related to the processes of all projects within BAP, which is the biggest supporter of scientific activities carried out at AU, were revised. As a result of the efforts to restructure BAP, arrangements were made to bring project application forms in line with TÜBİTAK standards. In addition, as a result of the structural reorganization activities carried out on quality management and information security management systems, trainings were provided to all personnel. These efforts are in line with the 4th standard of the new generation university standards, which is the criterion of increasing the "quality of scientific research".

9. STRUCTURING THE METHODOLOGY SUPPORT OFFICE

The Methodology Support Office was established to bring together the expertise in data collection and analysis for research conducted at AU under the same roof and to guide research in the right direction. The aim is to position AU as a leader in scientific fields and increase its ability to compete for new research initiatives. The Methodology Support Office works together with all faculties, schools, institutes and units. It is seen that these studies are practices aimed at increasing the "scientific research quality", which is the 4th standard of the new generation university standards.

10. MEETINGS WITH CIVIL SOCIETY ORGANIZATIONS (CSOS)

Another of the practices carried out within the scope of NGUDTP is that meetings were held with CSOs in order to realize collaborations that will benefit the integration of the University with the region. In the interviews, CSOs expressed their expectations that the research conducted at the University should be related to the problems of the region and that arrangements should be made for the collaborations needed to strengthen the University's bond with the city. With the feedback from the interviews with CSOs, some actions were taken within the scope of NGUDTP. It is seen that these studies are in line with the 13th standard of the next generation university criteria, "industry-university relationship", and are directly related to the sub-indicators "effective cooperation between industry and professional service providers" and "number of research studies conducted based on industry-university cooperation".

11. RESTRUCTURING OF TECHNOPARK

The restructuring of Technopark is an activity that directly affects the entrepreneurship initiative of Atatürk University. In this context, industrialists and other private sector companies in the region and academics within the University were matched in line with their common fields. The name of the program that enables them to come together for cooperation is the Hundred-100 program. In addition, TIM-TEB Initiative House was established and a physical environment that contributes to entrepreneurs within the University in areas such as training, mentoring, consultancy, coaching, incubation program, networking, investor relations as well as financial services was put into practice. In terms of the new generation university, the studies seem to be in line with the 10th standard "having a technopark"; the 11th standard "having R&D organizations" and its sub-indicator "supporting entrepreneurship activities" and finally the 13th standard "industry-university relationship".

12. PROJECT TO INCREASE THE NUMBER OF PATENTS

As part of NGUDTP, studies on Intellectual and Industrial Property Rights (IPR) are ongoing. In this framework, it is envisaged to encourage the protection of scientific studies carried out within the University through methods such as patent, utility model and design registration. In addition, informative seminars and trainings on IPR are organized, and activities are carried out to raise awareness by providing financial support by the SRP Coordination Unit. Through the Patent Number Development Project, graduate studies obtained from institutes are examined by relevant experts and evaluated in terms of patent potential. During the evaluation process, the relevant academicians are contacted in order to protect the studies that may be patents or utility models. The products/services are handled by the Patent Commission established under the project and patent applications are made to the Turkish Patent and Trademark Office. It is seen that these activities are in compliance with the 10th standard "having a technopark" and sub-indicators "number of international patent documents"; "number of national patent documents" and "number of national and international patent applications" criteria for the new generation university. As a result of the general evaluation of the practices carried out by Atatürk University within the scope of the project, it is seen that all of them comply with the criteria of a new generation university.

FINDINGS ON THE REFORM IMPLEMENTATION RESULTS OF THE NGUDTP

The last of the questions determined according to the main problems of the research is; To what extent do the implementation results of the "New Generation University Design Transformation Project" comply with the new generation university standards? For this purpose, the results obtained from the practices carried out by Atatürk University under the project are listed below.

1. RISE OF ATATÜRK UNIVERSITY IN RANKING SYSTEMS

According to 'THE 2023 World University Rankings by Subject' prepared by Times Higher Education (THE), a UK-based international higher education rating organization, Atatürk University has been ranked in five of the 11 main subject headings. According to THE, 2023 Subject Rankings, Atatürk University ranked 2nd among Turkish universities by placing in the 501-600 band in the main subject of Life Sciences, and ranked 1st in the sub-topics of Agriculture & Forestry and Veterinary Science, as it has been for the last 3 years. In addition, it ranked 2nd among Turkish universities in Biological Sciences and Sport Sciences. In 2023, Atatürk University, which maintained its ranking in Physical Sciences (501-600) and ranked 2nd in Geology and Geology, Environmental, Earth & Marine Sciences, ranked in the top 1000 among world universities in Education (501-600), Medicine and Health (801+) and Engineering (801-1000) (https://atauni.edu.tr accessed on 21.10.2023). The fact that Atatürk University is on the rise in international rankings in terms of new generation university standards shows that this rise meets the 2nd standard of "having an innovative mission and vision"; the 4th standard of "high quality of scientific research"; and the 5th standard of "having branding features and international reputation".

2. THE PRESENCE OF ATATÜRK UNIVERSITY AMONG PROJECT PRODUCING UNIVERSITIES

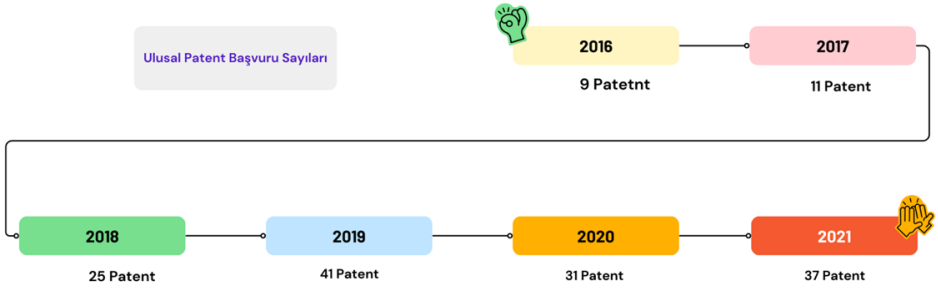
In the 1st semester of 2022, 10 projects submitted within the scope of the "1001-Scientific and Technological Research Projects Support Program" were entitled to receive direct support, ranking Atatürk University 5th among project producing universities. It is seen that Atatürk University's ranking 5th among project producing universities meets the 2nd standard "having an innovative mission and vision"; 4th standard "having a high quality of scientific research; 5th standard "having branding features and international reputation"; 11th standard "having R&D organizations"; 19th standard "having the financing deemed necessary for scientific studies" in terms of new generation university criteria.

3. QUANTITATIVE RESULTS OF CHANGES IN TECHNOPARK ORGANIZATION

Because 80% of the world's technical knowledge is contained in patent documents, patents and patent applications as a result of R&D studies are considered very important for the new generation university. In addition, protecting the innovations and inventions produced as a result of scientific studies at universities with patents is of great importance for the industry to benefit from these innovations and to develop university-industry cooperation. The use of patented information in R&D studies prevents investments and time from being wasted. Patents are accepted as an indicator of the transformation of scientific research results into technology (Wisssema, 2014). Because patents are based on the recognition of intellectual products, encouragement of entrepreneurial activities and dissemination of technical knowledge based on R&D results (Erdem, 2013).

The change in the number of patents at Atatürk University is shown in Figure 3 based on Technopark data.

Figure 3. *Number of National Patent Applications (Academician) (Atatürk University Technopark Data Office)*



In 2018, there were 2 national registrations (2 national registrations without patent examination), 1 national registration (1 national registration without patent examination), 1 international registration (1 international registration with patent examination) in 2019, 4 national registrations (3 national registrations with patent examination, 1 utility model registration), 8 international registrations (8 international registrations with patent examination) in 2020, 11 national registrations (7 national registrations with patent examination, 4 utility model registrations), 2 international registrations (2 international registrations with patent examination) in 2021. When the indicator "having national and international patent applications", which is a sub-indicator of the 10th standard among the new generation university criteria, is taken into consideration and the change in the number of patents is examined; it is seen that the number of patents has increased since the project was implemented and there has been a significant increase especially in the number of international registrations. The 10th standard "having a Technopark", the 13th standard "having R&D organizations", the 13th standard "supporting entrepreneurship activities" and the 17th standard "university-industry relationship (effective cooperation between industry and professional service providers, the number of researches carried out based on industry-university cooperation) criteria are met.

The change in the number of patents is detailed in the Technopark data. Table 2 shows how the Technopark activities have changed since the year the project started.

Table 2. *Technopark Data Total Values (Atatürk University Technopolis Data Office, 2022)*

Qualification Name	*2018*	*2019*	*2020*	*2021*	*2022*
Total Number of Companies (R&D and Incubation Companies)	78	86	106	118	134
Number of R&D Companies (Excluding İncubation Companies)	67	71	84	88	101
Number of Incubation Companies	11	15	21	29	33
Number of Companies (R&D and Incubation Companies) Accepted to the Zone	17	21	28	24	29
Number of Companies Established in the Region	13	14	21	16	16
Number of Companies Starting Operations in Incubation	6	9	7	12	11
Number of Companies Graduating from İncubation	5	1	4	7	9
Allocated Support Number of Companies	1	0	1	0	1
Number of Companies Incorporated by Receiving Pre-Incubation Services	11	12	6	15	4
Number of Companies Benefiting from Pre-Incubation Services	30	42	48	57	53
Number of Foreign/Foreign Partnered Companies	0	2	2	2	2
Number of Foreign Companies in Incubation	0	0	0	2	1
Number of Academic Spin-Off Companies	18	22	30	30	27
Number of Companies in which Academicians are Partners	21	24	32	32	30
Total Number of Academic Spin-Off Companies in Incubation Companies	5	5	7	7	5
Number of Companies Cooperating with Companies in and outside the Region	37	29	25	16	18
Number of Companies Cooperating with Foreign Companies	0	0	0	2	2
Number of Pre-Incubation Entrepreneurs	10	64	120	288	388

The total values are taken from 2018, the year in which the NGUDTP officially started. In general, the table shows that there has been an increase in all years except for "Number of Companies Collaborating with Companies within and outside the Region (R&D and Incubation Companies)" and "Number of Companies Incorporated by Receiving Pre-Incubation Services".

The table shows that while the total number of Technopark companies was 78 in 2018, this number increased to 134 in 2022. The same progress is observed in the number of R&D companies. The number of R&D companies, which was 67 in 2018, reached 101 in 2022. Since R&D studies are the source of patents, the number of R&D companies is an important indicator for the new generation university.

It is seen that the number of incubation companies was 11 in 2018 and 33 in 2022, and the number of incubation companies tripled in 4 years. There has been a steady progress in Technopark activities since 2018. It seems possible to explain this progress with the structuring of the Technopark as part of the project. These data are also very important for the new generation university. Because techno-pioneering institutions such as Technopark have an important role in the knowledge wheel that forms the center of the new generation university. Technopioneers interact with facilities belonging to big businesses and independent research institutes. In this way, they strengthen the knowledge wheel and the competitive position of the university, creating new high-level jobs and making a significant contribution to the economy (Wissema, 2014).

4. AWARDING ATATÜRK UNIVERSITY WITH THE HEC DISTINGUISHED SERVICE AWARD

Following the 2020 Contribution to Local Development Award within the scope of the Higher Education Council (HEC) Outstanding Achievement Awards, the HEC 2022 Outstanding Achievement Award was given to Atatürk University in the category of Digital Transformation and Big Data Studies with the project titled "Determining the Digital Competence Level of Atatürk University" (https://atauni.edu.tr accessed on 25.11.2022). In terms of the new generation university standards, it is seen that Atatürk University has met the criteria of the 2nd standard "having an innovative mission and vision" sub-indicators "evidence that policies are monitored and evaluated"; "mission policies are guiding"; 12th standard "the management system is constantly renewing itself in line with the needs of the university" and finally the 14th standard "having an innovative leader who is compatible with change".

5. ATATÜRK UNIVERSITY AS A RESEARCH UNIVERSITY

Atatürk University was selected as one of the 10 research universities as a result of a three-stage evaluation based on approximately one hundred "output-oriented" parameters based on the academic performances, research infrastructures and goals of the universities. According to the criteria, it is seen that Atatürk University meets the 2nd standard of "having an innovative mission and vision"; the 4th standard of "high quality of scientific research"; the 5th standard of "having branding features and international reputation"; the 10th standard of "having a Technopark"; the 11th standard of "having R&D organizations"; the 13th standard of "university-industry relations"; and the 19th standard of "having the necessary financing for scientific studies".

6. THE SELECTION OF ATATÜRK UNIVERSITY AS PART OF HEC'S BIG DATA PROJECT

Today, when digital transformation is taking place in every field, higher education institutions are required to take an active part in this process and become the pioneer institutions of digital transformation. At this point, the awarding of the Outstanding Service Award to Atatürk University within the scope of Digital Transformation and Big Data Studies in 2022 is an indication that the steps taken towards becoming a new generation university are officially recognized by HEC. The fact that AU has received this award means that the 12th standard in terms of new generation university standards is "the management system is constantly renewing itself for the needs of the university";

the 17th standard is "the use of digital platforms" and finally. 22nd standard, "having an adequate infrastructure system for data storage, management and utilization".

7. ESTABLISHMENT OF THE DATA CENTER

Today, when protecting information is as strategically important as producing it, many institutions and organizations, including government agencies, financial institutions, telecommunications companies, online marketplaces such as Google and Facebook, need data centers to ensure fast and secure access to data. When the Data Center is completed, it is designed to provide high-tech services such as server hosting, server rental, private cloud, public cloud, disaster recovery center, and high physical and cyber security in the region. It is planned to be a Data Center facility that centralizes information technology operations and equipment in line with the needs of the country, especially the Erzurum region, in order to store, process and distribute data and applications (https://atauni.edu.tr accessed on 22.12.2022). The establishment of Atatürk University's data center meets the criteria of standard 3, "having adequate infrastructure and equipment in line with the updated needs"; standard 12, "the management system is constantly renewing itself in line with the needs of the university"; standard 17, "using digital platforms"; and standard 22, "having an adequate infrastructure system for data storage, management and use" in terms of next generation university standards.

8. BIODIVERSITY CONSERVATION EFFORTS

Biodiversity Application and Research Center (BAUM) was established as part of NGUDTP. It is aimed with this center to protect plant biodiversity, to introduce protected species, to create awareness of environmental protection and ownership in individuals, and to open the materials to the studies of national and international scientists. In this context, efforts to establish a "Biodiversity Science Museum" have also been initiated. In this way, the University aims both to open its scientific collections, laboratories and laboratories to scientists and to bring science together with society through exhibitions open to the public (accessed from https://atauni.edu.tr). In terms of the new generation university standards, the protection of biodiversity by the University is in line with the 23rd standard, which is "scientific studies carried out at the university can create value (social, cultural, economic)".

9. EXTENSION OF PROGRAM EVALUATION STUDIES TO ALL FACULTIES

In order to improve the quality of education, research, social contribution and management activities of undergraduate programs at Atatürk University, peer evaluation processes are carried out after the self-evaluation of undergraduate programs. In addition, accreditation studies have been carried out to a great extent throughout the University. Internal and external stakeholders of all programs have been updated, program objectives, course contents and course outcomes have been reviewed. In addition, self-evaluation reports of 129 undergraduate programs and 8 institutes were prepared according to THEQC criteria (https://atauni.edu.tr accessed on 12.10.2023). The dissemination of program evaluation studies to all faculties is in line with the 1st standard "having a contemporary curriculum" and its sub-indicators "having defined processes used for program design and approval"; "having evidence of the alignment of program objectives and outcomes with the Turkish Higher Education Qualifications Framework (THEQF)"; "evidence of stakeholder participation in program design processes" and "evidence that the design and approval process of programs is monitored and improved". In addition, the 2nd standard "having an innovative mission and vision" meets the criteria of "evidence that policies are monitored and evaluated" and "mission policies are guiding".

10. IMPLEMENTATION OF THE EXCELLENCE IN EDUCATION MODEL

The "Learning Excellence Model Implementation and Education Programs Transformation Project" was carried out in order to ensure that the undergraduate and graduate programs of the

university include innovative educational pedagogies with up-to-date content at international quality level. In this way, it is aimed to realize a student-centered learning experience and to gain the competencies expected from graduates in working life in a comprehensive manner. "All undergraduate, graduate, distance and open education programs participated in the implementation of the model. Strategies were created and programs were reviewed in line with the orientation component where the basic policies of the programs were determined. The checklists of the programs, which were restored to their new designs, ensured that the designs were up-to-date and student-centered. In the model, it is planned to implement methodologies that will continuously improve instructor competence through in-service training and improve the resources and teaching environments used in learning" (Structural Transformation Practices, 2020).

The implementation of the Excellence in Education Model is compatible with the 1st standard "having a contemporary curriculum" and its sub-indicators "having defined processes used for program design and approval"; "having evidence of the alignment of program objectives and outcomes with the Turkish Higher Education Qualifications Framework (THEQF)"; "evidence of stakeholder participation in program design processes" and "evidence that the design and approval process of programs is monitored and improved". In addition, it is seen that it meets the criteria of "evidence that policies are monitored and evaluated" from the sub-indicators of the 2nd standard "having an innovative mission and vision".

11. ACCREDITATION OF ATATÜRK UNIVERSITY BY THEQC FOR 2 YEARS

The University has been accredited by THEQC for 2 years. The number of accredited programs, which was 6 when the Quality Coordinatorship was established, increased to 24 by 2022. While the accreditation process of 40 undergraduate programs continues, it is stated that the necessary work has been initiated to apply for the accreditation process of 13 undergraduate programs (https://atauni.edu.tr accessed on 12.12.2022). The accreditation process at the university is carried out according to THEQC criteria (https://atauni.edu.tr accessed on 10.11.2022). The accreditation of Atatürk University by THEQC for 2 years is in line with the 1st standard "having a contemporary curriculum" and its sub-indicators "having defined processes used for program design and approval"; "having evidence of the alignment of program objectives and outcomes with the Turkish Higher Education Qualifications Framework (THEQF)" and "evidence that the design and approval process of programs is monitored and improved" in terms of new generation university standards. In addition, it is seen that it meets the criteria of the sub-indicator of the 2nd standard "evidence that policies are monitored and evaluated" and the 20th standard "the number of internationally accredited faculties in the university is high".

12. IMPLEMENTATION OF THE NEW GENERATION PERFORMANCE CRITERIA AND APPOINTMENT SYSTEM PROJECT

One of the important tools of the meta-system designed by Atatürk University as part of NGUDTP is the performance management system. In this system called Academic Performance Evaluation Process Management System (APSIS), the scores of each academic staff member are analyzed and the deficiencies identified are communicated directly to the relevant academic staff member with the help of software. Thus, the objections of the lecturers within the specified calendar were made with the help of the software and the deficiencies were completed and the relevant corrections were made. In this way, the current situation was determined and the aspects that need to be improved were revealed. This software is especially intended to serve to improve the quality of the missions of "education, scientific research and service to society". The implementation of the new generation performance criteria and assignment system project corresponds to the 12th standard in terms of the new generation university standards, "the management system is constantly renewing itself in line with the needs of the university" and the sub-indicators "transparent management, processes and criteria for the appointment, promotion and assignment of academic staff are

determined and open to the public", "process management mechanisms in the institution are monitored and evaluated and improved together with the relevant stakeholders" and finally "defined processes are managed throughout the institution".

13. ESTABLISHMENT OF EASTERN ANATOLIA HIGH TECHNOLOGY APPLICATION AND RESEARCH CENTRE (EAHTRC/DAYTAM)

EAHTRC, established within the university, provides infrastructure for scientists conducting research in the fields of chemistry, physics, biology, medicine, veterinary medicine, dentistry, pharmacy, agriculture, engineering and materials science, and provides laboratory, testing, analysis and R&D services to industrial organizations. The Research Center is open to all public and private sector stakeholders, and project activities, testing and analysis can be carried out by them in the laboratories specially allocated to them. This research center aims to provide a working environment for both Atatürk University researchers and researchers of regional universities (www.daytam.atauni.edu.tr accessed on 12.12.2022). The establishment of EAHTRC corresponds to the 2nd standard "having an innovative mission and vision"; the 3rd standard "having sufficient infrastructure and equipment in line with the updated needs"; the 4th standard "quality of scientific research"; the 5th standard "having branding features, having an international reputation"; the 8th standard "having information and technology". "high level of use of information and technology"; 11th standard "having R&D institutions"; 12th standard "the management system is constantly renewing itself in line with the needs of the university"; 23rd standard "scientific studies carried out at the university can create value (social, cultural, economic)".

14. EASTERN ANATOLIA OBSERVATORY PROJECT

It is aimed with the Eastern Anatolian Observatory (EAO) to train the manpower Turkey needs in space sciences and technologies, to have Turkey's first and largest scale telescope, to serve space research of national strategic importance, to cooperate with organizations such as ERA, VO, ESA and NASA, and to serve space research of national strategic importance (http://dag-tr.org accessed on 15.12.2022). The establishment of an observatory is based on the 2nd standard of "having an innovative mission and vision"; the 3rd standard of "having adequate infrastructure and equipment in line with the updated needs"; the 4th standard of "having scientific research quality"; the 5th standard of "having branding features, having an international reputation"; and the 8th standard of "having IT and technology". "high level of use of information and technology"; 11th standard "having R&D institutions"; 12th standard "the management system is constantly renewing itself in line with the needs of the university"; 23rd standard "scientific studies carried out at the university can create value (social, cultural, economic)".

15. PARTICIPATION OF ATATÜRK UNIVERSITY IN THE 'GREEN UNIVERSITIES' LIST

According to the results of the UI GreenMetric World Universities Ranking Index 2022, which ranks world universities in 6 main categories "Building and Infrastructure, Energy and Climate Change, Waste Management, Water Management, Transportation, and Education and Research", Atatürk University ranked 324th among 1050 world universities ranked 119 places higher than the previous year, and ranked 24th among 83 universities, 65 of which are public universities and 18 private universities in Turkey (www.atauni.edu.tr accessed on 23.11.2022). It is seen that Atatürk University, which is among the universities with environmental awareness, meets the 23rd standard in terms of new generation university standards, which is "scientific studies carried out at the university can create value (social, cultural, economic)".

DISCUSSION, CONCLUSION AND IMPLICATIONS

In this part of the study, the University is evaluated in terms of its compliance with the new generation university standards. In this evaluation, the numerical data of the changes that have

occurred since the project started in 2018 are discussed. These data were obtained from the internal evaluation reports of higher education institutions announced by THEQC every year. When NGUDTP was analyzed in the context of new generation university standards, the following results were reached.

In terms of the first standard, "Having a contemporary curriculum", the University is in the category of new generation universities. This evaluation is seen in the changes that have occurred since 2018, when the University started the project. When the first standard of the project is evaluated in parallel with THEQC data, it is seen that the number of international symposiums, congresses or artistic exhibitions increased from 15 in 2018 to 70 in 2022, and the number of social or industrial projects carried out by students increased from 92 in 2018 to 300 in 2022 (THEQC data table in Appendix 1). In terms of the first standard, it is possible to state that AU has the characteristics of a new generation university.

In terms of the standard "The number of internationally accredited faculties at the university is high", the 300% increase in program accreditation in the project, the start of program self-evaluation studies in all faculties, the elimination of the deficiencies identified in the course information packages and the increase in the diversity of resources in teaching are important developments. Considering the 2022 data together, it is seen that the University has the characteristics of a new generation university in terms of its educational mission. In the process of revision of the educational mission, Atatürk University consulted stakeholder opinions in order to clearly reveal the expectations from education and training activities. The results obtained from the stakeholder opinions revealed that the graduating students are theoretically adequate but lacking in practical aspects. For example, feedback from stakeholders includes that a graduated teacher candidate has the necessary knowledge but cannot transfer it to the classroom; a nurse cannot draw blood or use a needle. In response, the University established the Education Coordinatorship in order to meet the needs of the sector in the best way possible. The establishment of the coordinatorship is an indication that there are "defined processes used for program design and approval". The fact that the Education Coordinatorship works in cooperation with all stakeholders, collects information from the sector and analyzes the collected data is in compliance with the standards "Evidence of stakeholder participation in program design processes and Evidence that the design and approval process of programs is monitored and improved". It can be said that the University has the characteristics of a new generation university because it makes plans and practices by taking stakeholder participation into account in its coordination activities.

As a result of the feedback received by the coordinatorship, it was determined that especially laboratory and practical course hours should be increased. In parallel with this problem, program update studies were carried out, the number of courses was reduced within the framework of the legislation of HEC, and more practical courses were integrated into the program. A total of 266 associate and undergraduate programs were updated at Atatürk University in 2022. The information load in the programs was reduced with a 6-month study and a minimum of 25% elective courses were introduced to each program. A minimum of 2, maximum 4 elective courses were added to associate degree programs, and a minimum of 4, maximum 6 elective courses that can be considered as social and cultural activities were added to undergraduate programs. For international students, both vocational courses and courses that can improve their social and cultural skills have been added. By reducing the course load, students have more time for social and cultural activities, research, project development, social awareness and participation in social responsibility activities. This change in course load has also given faculty members the time they need to develop themselves. Considering this situation in the context of the new generation university, it is seen that it complies with the standard "Evidence that the design and approval process of programs is monitored and improved". In this respect, program improvement activities add new generation university characteristics to the University. In addition, with the arrangements made in the educational mission of the University (Teaching and Learning Development Application and Research Center activities), all necessary

trainings are provided to support all kinds of pedagogical training, to make faculty members aware of different teaching methods and techniques in both distance education and formal education, and to provide the necessary training to all academic staff by exploring the world in digital transformation. This center also carries out very important activities in terms of its educational mission. In terms of the standards "the university renews itself in line with current needs" and "has an innovative mission and vision", it is seen that AU has the characteristics of a new generation university.

Atatürk University has the characteristics of a new generation university in accordance with the standards that emphasize its educational mission. However, the lack of program monitoring and updating practices in all faculties, the lack of graduate monitoring systems or the fact that not enough graduates are enrolled in the system due to the voluntary registration of graduates, and as a result of this, the system cannot be used effectively and efficiently, different teaching methods and techniques are not used in all faculties, there are still faculty members who teach with traditional methods, there are faculties with no accredited programs, there are no peer evaluation practices, and education, research and social contribution processes are not structured in relation to each other are the points that are open to improvement in the educational mission.

As a location preference, AU integrates the functions of education, research and social contribution within the framework of its new generation university vision. With this integration, it envisages to create a multiplier effect in the three mission areas, to ensure the integration of the outputs obtained from education and research policies into society, and to serve the people, nature and cultural assets in its sphere of influence. The institution has a social contribution policy, goals and strategy, which expresses the principles, priorities and preferences in managing its resources in social contribution activities.

In the category of contribution to society and social responsibility main mission, there are indicators such as social responsibility projects, vocational training activities, career center activities, cooperation with public institutions, and monitoring and evaluation of activities for disadvantaged individuals (University Monitoring and Evaluation Report, 2022). The changes and indicators at AU over the years are presented in Annex. 5. One of these indicators, "increasing the number of social responsibility projects", is the first goal in the new generation university policies that AU prioritizes for its social contribution mission area. It is seen that this number was only 3 in 2018, when the project started, and increased to 473 in 2021. In terms of the standard "scientific studies carried out at the university can create value (social, cultural, economic)", the number of certificates issued by the Continuing Education Center (SEM) and Language Center (DİLMER) for vocational training increased from 1544 to 4336, and the number of projects carried out with other public institutions increased from 21 to 130. In the evaluation of the social contribution mission, there have been very good improvements in this mission thanks to the existence of defined processes and practices for the social contribution strategy and goals. In particular, the increase in social sensitivity projects, the consideration of social benefit in determining research fields and turning outputs into products are important developments towards becoming a new generation university. According to the University Monitoring and Evaluation Report published by HEC in 2022, the university ranked third among universities in Turkey in terms of the number of social responsibility projects. This is an indication of a significant achievement in the mission of social contribution. In this respect, AU has the characteristics of a new generation university. On the other hand, the fact that the results of the monitoring of social contribution processes are not sufficiently evaluated and improvements are limited, and the limited use of information management systems for monitoring performance indicators are the aspects of the project that need to be improved in terms of this mission area.

Another new generation university standard is "having a career development center". It is seen that the number of activities carried out for students and graduates within the scope of AU's Career Center activities has increased from 32 to 422. According to the University Monitoring and Evaluation

Report (2022) announced by HEC, Atatürk University ranks 5th in Turkey in terms of Career Center activities. The university has a new generation university feature in terms of this standard.

Considering the project in terms of "having new generation libraries", the number of printed books per student in the university library is 2,925 in 2018, while this number is 3,289 in 2022. The number of electronic publications per student in the university library was 2,607 in 2018 and 6,1805 in 2022. Due to the steady increase in the number of books over the years and the opening of the new library building, it can be said that the diversity of learning resources has increased in terms of the educational mission. In this respect, it is a University that has the characteristics of a new generation university.

As a result of the examination of the standards of "having an innovative leader who is compatible with change, the management system is constantly renewing itself in line with the needs of the university, transparent management", process management mechanisms in Atatürk University institutions are monitored and evaluated and improved together with the relevant stakeholders, and defined processes are managed throughout the institution. In addition, the processes and criteria for the appointment, promotion and assignment of academic staff at the University have been determined and are open to the public. In this respect, AU is in the new generation university category. In the interviews, it was stated that the University has adopted a transparent management approach. There are 2 steps to transparent and participatory management at AU. The first step is mission-based management and each manager fulfills the tasks defined according to the missions. The second step is to manage the University collaboratively. At this point, the AU model is recognized as a "governance model" rather than "management". This is because in this system there are 14 boards called mini senates, which are affiliated to 7 different regions. The boards include representatives from many departments, including students. The main goal here is to have these committees evaluate the idea before it comes to the senate. This governance model aims to ensure both participation and transparency, with ideas coming from the grassroots of the University. In addition, performance data is shared with everyone in a transparent manner. Who produces what in which faculty is announced on the University's web page. With these practices, which are an important indicator of transparency, AU can be seen as a new generation university.

In terms of the standard of "conducting studies to encourage different faculties to cooperate", AU is focusing on the integration of the Faculty of Health Sciences and the Faculty of Engineering with the "Hospital, Engineering and Technology Collaboration Project". It is seen that the university has a potential in health sciences as it has the University Hospital, which serves both the city and the region. For this reason, it is aimed to carry out interdisciplinary studies by combining its existing experience in health sciences with engineering and advanced technologies. The University plans to determine the materials, devices and materials needed especially by healthcare professionals and to convey them to the Faculty of Engineering and to produce patented products in line with these needs. In terms of this standard, the University has the characteristics of a new generation university.

In terms of the standard of "academic freedom", it is seen from the interviews held in the project that the University has not reached the desired level in this regard. It was reported that there are problems such as academics being asked to work and conduct research in certain fields and that studies outside these fields cannot receive incentives. Atatürk University has left room for improvement in terms of this standard.

According to the standard of "having international mobility", the effects of the project on the internationalization dimension indicate that the objectives set in this mission area have not been fully achieved. For example, the University has developed, monitored and adopted approaches to improve its performance in the areas of student and staff mobility, number of foreign students, increasing cooperation protocols with qualified educational and research institutions in its strategic plans for internationalization. It is seen that the number of academic staff coming within the scope of

international exchange programs increased from 19 to 43, but this number decreased to 4 in 2020 due to the pandemic (Appendix 1). In 2021, it increased again to 12, which is a positive indicator, but considering the starting point, it can be considered as a serious decrease. Again, it is seen that while the number of academic staff sent within the scope of international exchange programs was 42 in 2018, the number decreased to 17 in 2021. The number of students coming within the scope of international exchange programs increased from 59 to 72 and decreased to 3 in 2021. It is seen that the number of foreign doctoral academic staff at the university decreased from 24 to 3 in 2018. In addition, when the number of students sent within the scope of international exchange programs is examined, a similar result emerges; It is seen that the number of 231 in 2018 decreased to 38 in 2021. In the internationalization dimension, THEQC data shows that the University is generally in a decline. There are two results that can be evaluated positively; these are the number of foreign students at the University, which has been steadily increasing over the years, and the number of projects based on international funds received by the University faculty. Although the number of foreign students at AU is high in general, it is seen that most of these students come from countries such as Syria, Iran, Iraq, Afghanistan and Somalia, not from the West. In this context, it is seen that the standard of "Having a multicultural cosmopolitan structure, the number of international students studying at the University and the number of international faculty members working at the University" is not fully met.

The goals of Atatürk University for internationalization can be listed as the implementation of the curriculum based on international creative learning models and methodologies in all faculties and departments, and the internationalization of curricula, and the opening of English programs throughout the University. The foreign language project was interrupted due to the pandemic. This situation also negatively affected the internationalization goals. Therefore, the failure to meet the standard of "speaking a foreign language effectively" has left an important step missing on the way to becoming a new generation. In addition, since there is not enough data on attracting foreign students from all over the world, it has not met the expectations of the new generation university in terms of the standards of "having the best teaching staff" and "having the best researchers/students". As a result, the reasons for falling behind in internationalization targets can be listed as the inability to conduct qualified international research, the inability to attract enough qualified students in student mobility, and the lack of sufficient progress in attracting internationally renowned faculty members to the institution. The university is working on some solution proposals as of 2023 in order not to fall behind the set targets. These include increasing the number of international graduate students by 10%, opening at least one English-language graduate program in each institute, and expanding the "B1 level English proficiency" requirement for PhD students and making it a requirement for all master's students. It is thought that these solution proposals will contribute to the internationalization strategies identified in the project.

With the internationalization of universities, digital transformation has become the first priority of universities all over the world. For this reason, digital transformation is an inevitable process in today's world where the world is evolving towards digital universities and paradigmatic changes are taking place in education (Ataş & Gündüz, 2019; Bozkurt et al., 2021; Gümüşoğlu, 2017). In order for digital transformation to be carried out effectively in higher education institutions, it is necessary to carry out studies in line with various digital capabilities, measure and evaluate digitalization, and determine the maturity level of the institution. For digital transformation, universities should innovate and create their own strategies by transforming their data into assets. In addition, for the effective use of resources, the physical inventories of the institution should be managed through information technologies, and all collected data should be transformed into meaningful information and adapted to decision-making processes (Tecim, Aydın, Tarhan, Aşan, & Komesli, 2022). In this competitive environment where digital skills are becoming increasingly important, it is seen that the University has gained an important place for itself at the point of internationalization in the digitalization race with the digital transformation project that won Atatürk University an award. The University, which meets

the standards of "using information and technology at a high level" and "having an adequate infrastructure system for data storage, management and use", is a new generation university in terms of its achievements in the digitalization process.

It is seen that the university meets the 24th standard "adequacy of accessibility services for students with special needs" and the sub-indicators "monitoring and improvement evidence of barrier-free university practices", "mechanisms for disadvantaged groups and special types of measurement such as online exams" in the context of next generation university standards. The number of activities related to social integration and inclusion for disadvantaged groups increased from four to 64, and the number of Barrier-Free University Award, Barrier-Free Flag Award, Barrier-Free Program Order and Disability-Friendly Award received by the University increased from zero to four..

Atatürk University aims to ensure that disabled students complete their education and training processes in a healthy, unhindered, independent, social and successful manner. For this reason, the University has established a "Disabled Student Unit" within the University in order to identify problems, plan and implement solutions, evaluate the results, take necessary measures and make arrangements in order to identify and eliminate their needs in terms of structuring the administrative, physical and academic environment in ideal standards in line with their special conditions and differences. AU is a new generation university in terms of the standard of "scientific studies carried out at the university can create value (social, cultural, economic)" in the project.

The university has the infrastructure (elevators, wheelchair ramps, lane paths, etc.) that all disabled students can easily continue their education and training. Disabled students are also provided with facilities such as ergonomic design of physical spaces and the installation of elevator systems outside the building in old buildings. The requests of disabled students enrolled in university programs who certify that they are disabled are determined and fulfilled for exams. Depending on these requests, a reader and marker are assigned for visually impaired students, and a marker is assigned to disabled students who cannot use their hands or have difficulty in using their hands. For students with orthopedic disabilities, places with ramps, elevators or the ground floors of buildings are allocated as examination places. This is an indication that it is a new generation university in terms of the criterion of "having sufficient infrastructure and equipment in line with the updated needs". In addition, visual and symbolic questions identified in the exams of visually impaired students are excluded from the assessment and evaluation processes and these students are exempted from the relevant questions. The material fee and contribution fee transactions of students enrolled in the ongoing programs at the University, who document that they have a 40% disability with a disability health report, are also carried out within the scope of the relevant legislation provisions.

The University aims to become an internationally recognized institution by blending its "research" mission with education and social contribution. In order for the university to become internationally renowned or a brand, the research conducted within the university is expected to make a measurable contribution at regional, national and international levels. In this way, the targeted international rise will be possible. Increasing international resources is possible with the capacity to conduct qualified research at the international level. In order for these goals to be realized, the knowledge produced must be transformed into products, that is, academic knowledge must meet with industry. In the context of the research mission area of the project, it is seen that Atatürk University has made serious progress in terms of the standards of "having a Technopark, having R&D organizations, university - industry relationship". The University has been selected as a research university by keeping the objectives in this area up to date and rigorous. The presence of defined processes and monitoring mechanisms for research strategy and objectives has a great impact on this success. In addition, positive developments such as the redesign of the University's research management system, efforts to increase the adequacy of research infrastructure, open access and open science studies, restructuring of research budget monitoring and management processes,

updating research results/outputs dissemination and dissemination policies, revising the researcher appointment and promotion strategy in line with the University's research policies, restructuring the reward and incentive system in this direction, and finally re-entering the entrepreneurial and innovative university index have also taken place. With these innovations, the University has the characteristics of a new generation university.

The research mission field is a very important mission field for Turkey to increase and strengthen its academic and innovation performance and to achieve its goal of becoming one of the countries with major economies in the world. THEQC data on Atatürk University's "Research-Development, Project and Publication" reveals the changes that have occurred in the institution in the research mission of the project. Based on THEQC (2018-2021) data, it is seen that the number of patents, utility models or designs applied for in the project in terms of research mission has increased from 32 to 66; the number of patents, utility models or designs finalized has increased from 2 to 13; the number of publications cited in the top 10% has increased from 304 to 611; the number of HEC, Turkish Academy of Sciences, TÜBİTAK science, incentive and art awards has increased from zero to 2; the number of national and international research scholarships awarded by TÜBİTAK to students and academic staff has increased from 33 to 220. In addition, the number of national and international support programs provided by TÜBİTAK to students and academic staff increased from 66 to 153 and the number of R&D projects supported by national and international private or public institutions and organizations increased from 74 to 168. The increase is at least two and at most 6-fold in most research fields. Finally, the number of students participating in Technopark or Technology Transfer Office (TTO) projects increased from 61 to 354, indicating that students are assuming their role in projects (Appendix 1). The rise of Atatürk University in the research mission area is quite good. The university has new generation characteristics in this context. However, the limited use of information management systems for monitoring performance indicators, the limited use of information management systems for monitoring performance indicators, and the limited use of practices for developing research competence are the points that need to be improved in the research mission of the project.

As a result, it is seen that the overall improvement areas of NGUDTP in education are as follows: an increase of more than 300 percent in program accreditation, widespread use of program self-evaluation studies, elimination of deficiencies in course information packages, and increasing the diversity of learning resources. The aspects of the project that are open to improvement in terms of the educational mission can be listed as follows: limited program monitoring and updating practices, lack of graduate monitoring systems or inability to obtain effective and efficient results, lack of dissemination of different teaching methods and techniques, the existence of faculties without accredited programs, lack of peer evaluation practices, lack of structuring education, research and social contribution processes in relation to each other. The areas of improvement in terms of the research mission of NGUDTP are the existence of defined processes and practices for research strategy and objectives, and the establishment of monitoring mechanisms for research processes. On the other hand, areas open for improvement are: insufficient evaluation of the results for monitoring research processes and limited improvements, limited use of information management systems for monitoring performance indicators, and limited practices for developing research competence. The area of improvement for the social contribution mission area of the project is that there are defined processes and practices for the social contribution strategy and goals. On the other hand, the areas open for improvement are the limited use of information management systems for monitoring performance indicators and the limited use of information management systems for monitoring performance indicators.

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APPENDIX 1. Atatürk University Internal Evaluation Reports by THEQC

ARAŞTIRMA

YÖKAK Atatürk Üniversitesi Kurum İçi Değerlendirme Raporları (2018-2021) Kurum iç değerlendirme raporu, https://yokak.gov.tr/raporlar/kurum-ici-degerlendirme-raporlari

KRİTERLER	Sayı-Oran-Yıl	Sayı-Oran-Yıl	Sayı-Oran Yıl	Sayı-Oran Yıl
Araştırma-Geliştirme, Proje ve Yayın	**2018**	**2019**	**2020**	**2021**
Ulusal hakemli dergilerde yayımlanmış öğretim elemanı başına düşen yayın sayısı	0,0966	0,141	0,257	0,27093
SCI, SCI-Expanded, SSCI, AHCI ve ESCI endeksli dergilerde yayımlanmış öğretim elemanı başına düşen yayın sayısı	0,3529	0,396	0,482	0,52389
Üniversite adresli bilimsel yayınlara açık erişim oranı	%45,10	%49,86	%56,44	%57,46
Başvurulan patent, faydalı model veya tasarım sayısı	32	57	66	63
Sonuçlanan patent, faydalı model veya tasarım sayısı	2	3	11	13
En yüksek %10'luk dilimde atıf alan yayın sayısı	304	461	561	611
YÖK, Türkiye Bilimler Akademisi, TÜBİTAK bilim, teşvik ve sanat ödülleri sayısı	0	0	2	1
TÜBİTAK tarafından öğrenci ve öğretim elemanlarına verilen ulusal ve uluslararası araştırma bursu sayısı	33	104	90	220
TÜBİTAK tarafından öğrenci ve öğretim elemanlarına verilen ulusal ve uluslararası destek programı sayısı	66	120	141	153
Ulusal ve uluslararası özel veya resmi kurum ve kuruluşlar tarafından desteklenmiş Ar-Ge niteliği taşıyan proje sayısı	74	30	66	168
Üniversitenin Times Higher Education'a göre bölgesel sıralaması				301,35
Üniversitenin Times Higher Education'a (THE) göre ulusal sıralaması				12

EĞİTİM VE ÖĞRETİM

YÖKAK Atatürk Üniversitesi Kurum İçi Değerlendirme Raporları (2018-2021) (Kurum iç değerlendirme raporu, https://yokak.gov.tr/raporlar/kurum-ici-degerlendirme-raporlari)

KRİTERLER	Sayı-Oran-Yıl	Sayı-Oran-Yıl	Sayı-Oran-Yıl	Sayı-Oran-Yıl
Eğitim ve Öğretim	**2018**	**2019**	**2020**	**2021**
Mezun olan doktora öğrenci sayısı	293	256	267	202
Kamu Personel Seçme Sınavlarında (KPSS) üniversitenizin ilk %10'a giren ilk beş programı ve bu programların kendi içindeki sıralaması	5	3	6	3
Akademik Personel ve Lisansüstü Eğitimi Giriş Sınavlarında (ALES) üniversitenizin ilk %10'a giren ilk beş programı ve bu programların kendi içindeki sıralaması	3	5	4	3
Uluslararası sempozyum, kongre veya sanatsal sergi sayısı	15	27	24	70
Öğrencilerin yaptığı sosyal veya endüstriyel proje sayısı	92	300	157	164
Teknokent veya Teknoloji Transfer Ofisi (TTO) projelerine katılan öğrenci sayısı	61	314	291	354
Üniversitenin bölüm ve programlarındaki genel doluluk oranı	%92,35	%92,06	%94,3	%97,1
Erişilebilen ders bilgi paketi oranı	%71,27	%92,0	%91,4	%100
Öğrencilerin kayıtlı oldukları program dışındaki diğer programlardan alabildikleri ortalama seçmeli ders oranı	%6,21	%2,54	%32,4	%32,49
Yükseköğretim Kurumları Sınavı (YKS) kılavuzunda akredite olduğu belirtilen lisans programı sayısı	6	7	6	12
Üniversite kütüphanesinde öğrenci başına düşen basılı kitap sayısı	2,925	3,24	3,32	3,289
Üniversite kütüphanesinde öğrenci başına düşen elektronik yayın sayısı	2,607	3,4	5,03	6,1805

TOPLUMSAL KATKI

YÖKAK Atatürk Üniversitesi Kurum İçi Değerlendirme Raporları (2018-2021) Kurum iç değerlendirme raporu, https://yokak.gov.tr/raporlar/kurum-ici-degerlendirme-raporlari

KRİTERLER	Sayı-Yıl	Sayı-Yıl	Sayı-Yıl	Sayı-Yıl
Topluma Hizmet ve Sosyal Sorumluluk	**2018**	**2019**	**2020**	**2021**
Sosyal sorumluluk projesi sayısı	3	475	418	473
Sürekli Eğitim Merkezi (SEM) ve Dil Merkezi (DİLMER) tarafından mesleki eğitime yönelik verilen sertifika sayısı	1544	646	1179	4336
Kariyer Merkezi çalışmaları kapsamında öğrenci ve mezunlara yönelik gerçekleştirilen faaliyet sayısı	32	85	296	422
Diğer kamu kurumları ile birlikte yürütülen proje sayısı	21	9	67	130
Dezavantajlı gruplara yönelik sosyal entegrasyon ve kapsayıcılığa ilişkin yapılan faaliyet sayısı	4	34	44	64
Üniversitenin aldığı Engelsiz Üniversite Ödülü, Engelsiz Bayrak Ödülü, Engelsiz Program ve Engelli Dostu Ödülü sayısı	0	0	1	4
Üniversitenin yeşil, çevreci üniversite endeksindeki sıralaması	476	574	685	443

ULUSLARARASILAŞMA

YÖKAK Atatürk Üniversitesi Kurum İçi Değerlendirme Raporları (2018-2021) Kurum iç değerlendirme raporu, https://yokak.gov.tr/raporlar/kurum-ici-degerlendirme-raporlari

KRİTERLER	Sayı-Yıl	Sayı-Yıl	Sayı-Yıl	Sayı-Yıl
Uluslararasılaşma	**2018**	**2019**	**2020**	**2021**
Üniversitedeki yabancı uyruklu doktoralı öğretim elemanı sayısı	24	24	2	3
Üniversitedeki yabancı uyruklu öğrenci sayısı	3662	2699	3301	4737
Uluslararası değişim programları kapsamında gelen öğretim elemanı sayısı	19	43	4	12
Uluslararası değişim programları kapsamında gönderilen öğretim elemanı sayısı	42	38	3	17
Uluslararası değişim programları kapsamında gelen öğrenci sayısı	59	27	72	3
Uluslararası değişim programları kapsamında gönderilen öğrenci sayısı	231	107	176	38
Üniversite öğretim elemanlarının aldığı uluslararası fonlara dayalı proje sayısı	12	13	15	42

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Can Distance Education be Closer: A Training Program about Autism*

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Abstract

In this study, families with children diagnosed with autism spectrum disorders, teachers working with these individuals and experts in their fields were brought together in an online learning environment. It was aimed to determine the participants' expectations, the state of contentment after the implementation and to evaluate their opinions regarding the process of "Online Seminar on Autism" structured within the scope of transactional distance theory. At the end of the fully remote 17-week study, educational contents were created, and the main implementation was performed online. The process was evaluated by families connecting at convenient times. The strongest aspects of the process were determined as videoconferencing environment used by 54 volunteered the participants, access and question asking opportunity to field experts. In this study, a mixed method approach was adopted in which qualitative and quantitative data collection tools were used together. The data collection tools used in the research process included open-ended and scale ranking questions. Open-ended questions were analyzed with content analysis where the data obtained from the responses were coded, and themes were obtained from codes with similar characteristics. The obtained themes and codes were presented in tables indicating the repetition percentages of the codes. The answers given by the participants to the scale rating questions in this form are expressed with frequencies. The most important opportunities offered by the online environment were listed as the late and convenient training hours, attending trainings from home and the support which was exhibited by the families to each other. Emerging technical problems were revealed as the biggest threats against the online training.

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INTRODUCTION

The greatest need of families with Autism Spectrum Disorders (ASD) children is information about the situation they are in (Bailey & Simeonsson, 1988; Cavkaytar et al., 2014). Knowledge is the primary source of strength for parents who have children with ASD to cope with different situations they encounter; manage the process and get to know ASD (Orum-Çattık et al., 2019). Thus, family trainings have potential to facilitate families to acquire knowledge to cope with problems related to ASD and help their children (Bruder, 2010; Özsoy et al., 2006; Varol, 2005).

Family trainings, may alleviate the pressure on the family, reduce stress and help the family to perform its basic functions in a healthy way (Hermaszewska & Sin, 2020; Ilg et al., 2017). Studies in Turkey have mostly presented home-based or institution-based family training programs (Varol, 2005). These programs are generally carried out in special education and rehabilitation centers, face-to-face with a limited number of participants. (Aktaş, 2015; Demirci, 2015; Kızılkaya, 2021; Şanlı, 2012; Şeker, 2013). In the world, family education programs generally focus on teaching a method to be used in the education of ASD children and providing the desired skills and behaviors to children with this method (Crone & Mehta, 2016; Heitzman-Powell et al., 2014; Snodgrass et al., 2017).

The harmony between families and professionals taking part in the education of individuals with special needs is necessary for successful implementation of family training programs (Azad et al., 2020; Meadan & Daczewitz, 2015). The experiences, value systems, personal and social skills of these teachers and other professionals greatly affect this collaboration (Rogers & Vismara, 2014). This highlights the significance of knowledge and experience of special education teachers who are involved in the adaptation process of individuals with ASD to social life. However, it is known that special education teachers in Turkey do not take courses with sufficient ASD specific content during their undergraduate education (Higher Education Council [HEC], 2007). As a matter of fact, it is among the results of the studies that special education teachers have various problems in their professional lives arising from insufficient knowledge and skills about ASD and they would like to participate trainings to improve themselves (Ergul et al., 2013; Güleç-Aslan, 2014; Karasu et al., 2014). Accordingly, even in the larger context, it can be said that families of individuals with ASD and their teachers need to acquire further information from field experts so that they could find solutions for negativities they face (Chen et al., 2009). However, it is mainly hard for families and field experts to come together because of reasons like; living in different locations, not having direct communication opportunities, lack of time and financial resources etc. (Dabrowska & Pisula, 2010; Hermaszewska & Sin, 2020; Kolb, 2007; Wainer & Ingersoll, 2015; Zimmerman, 2013). These restrictions can be overcome by the use of web based educational implementations that allow participants come together in online or offline meetings (Hall et al., 2016; Pennefather et al., 2018; Vismara et al., 2013; Zembylas, 2008). In the study examining the obstacles of family trainings and the opportunities they offer, Straiton et al. (2021) suggested providing professional training opportunities to experts about the best practices in parent training and increasing agency support for parent training, particularly in reducing logistical barriers. These recommendations imply online training programs should be organized by distance education field experts and presented by special education professionals.

Distance Family Training is defined as educational activities performed to facilitate the life of individual and family by using online technologies that include proper educational strategies (Hughes et al., 2012). The number of distance education programs for families of individuals with ASD has increased especially in recent years (Douglas et al., 2017; Heitzman-Powell et al, 2014; Hieneman et al., 2020; McDevitt, 2021; Raulston et al., 2019; Roberts et al., 2019; Wainer & Ingersoll, 2015). However, these studies present the family education in the form of face-to-face or asynchronous distance education (Heitzman-Powell et al., 2014; Wainer & Ingersoll, 2015; Douglas et al., 2017; Pennefather et al., 2018; Roberts, Smith, Sherman,2019). Most of these studies were completed in short time periods, their study groups were considerably small and mostly consisted of families of

children with ASD in early childhood. Moreover, most of these studies were conducted with asynchronous media such as; CDs, web-sites, computer applications etc. (Dai et al., 2021; Douglas et al., 2017; Heitzman-Powell et al., 2014; McDevitt, 2021; Pennefather et al., 2018; Roberts, Smith & Sherman, 2019; Wainer & Ingersoll, 2015; Vismara et al. 2013). However, mutual audio and video-supported interactive communication, sharing and instant feedback opportunities in online classes have increased the effectiveness and popularity of distance education (Schullo et al., 2005). In this way, barriers arising from the interaction or communication problems of traditional distance education are reduced (Huang, 2002). In addition, online implementations offer a flexible structure that can remove obstacles such as time and distance (Crawford-Ferre & Wiest, 2012; Eck et al., 2016).

Considering the implications by the previous studies, unlike most of the precedent; all the seminars of the present study were performed online via a videoconference program enabling synchronous interaction. The presenters and the participants also interacted via the social media group, which is launched for the study. The study group was not restricted to a specific age group of individuals with ASD. The seminars were extended over seven weeks, which is thought to be reasonable time period to deepen the impact. Finally, concerning the point that communication and interaction are vital parts of distance education, the content and activities of the present study were based on Transactional Distance Theory.

Transactional Distance Theory developed by Moore (1973, 1997, 2016) is one of the theories to increase productivity in distance education. The significance of the theory and the related concepts were largely appreciated during the world-wide trial of distance education compelled by COVID-19 pandemic. Moore states that in distance education there is more beyond the geographical distance of students and teachers from each other. Rather he (Moore, 1997) mentions a psychological, perceptual and communicative distance that may occur due to the physical distance between students and teachers. This psychological and communicative distance or space is called transactional distance. There are three variables that determine the degree of transactional distance: dialogue, structure, and learner's autonomy (Moore, 1997).

Learning community and its size is one of the factors influencing the dialogue. Dialogue increases, as a learning community gets larger. Changes in learning environments can significantly increase the dialogue. We can say that there is also a dialogue in communication with e-mail in distance education applications; however, it is possible to create high-level dialogues with simultaneous online video conferencing applications (Moore & Kearsley, 2011). The relationship between transactional distance and dialogue is expressed as; distance increases if dialogue decreases (Moore, 2016). The second variable; structure is related to the flexibility that course design elements offer in terms of meeting the student's individual needs or expectations. Learning objectives, content themes, information presentation strategies and assessment activities are among these course design elements (Moore, 1997). The structure is also a qualitative variable and the size of the structure in a program largely depends on; the quality of the communication tools used, the personality, educational philosophy and emotional characteristics of teachers and the approach of educational institutions to distance education (Moore, 1997). The distance increases, as the structure gets greater in distance education environments (Moore, 2016). Students' controlling their teaching materials and curricula up to a certain point, in their own ways, along their own purposes is defined as 'student autonomy' (Moore, 1972).

This study differs from other studies in the field by carrying out the entire process online including the processes of identification of the participants and field experts, organizing the training and collecting data. The training content "Online training program about autism spectrum disorder" (OSA) was distributed by transactional distance theory. During the seven-week program, each week an expert met with the participants in an online seminar. The research aims to provide a fully remote, alternative learning platform for the target group and to be a guide for similar prospective researches. The purpose of this study is to bring the field experts, families and teachers of individuals with ASD

together in an online environment to satisfy further training needs of the participants and to evaluate the process of this learning environment. Along with this purpose, the research inquiries of the study are;

- What are the expectations of the participants regarding the OSA process?
- To which extent the expectations of the participants regarding the OSA were met?
- How was the OSA process evaluated by the participants?

METHOD

In this research, a mixed method approach in which qualitative and quantitative data were collected together was preferred. This approach involves collecting and analyzing quantitative and qualitative data within the scope of a research study (Creswell, 2006). Mixed methods enable researchers to choose methods and approaches that better fit to their predetermined research questions (Baki & Gökçek, 2012). Concurrent embedded design was used in the research (Creswell, 2013). In this design, quantitative and qualitative data are collected and analyzed at the same time; however, one data type predominates. Combining data is usually done at the data analysis stage. This design is useful when it is intended to gain a broad perspective on the subject being studied and when it is preferred to conduct research with different groups or levels within a study. The dominant part of the current research is case study, one of the qualitative research methods. However, quantitative research approaches were used in the process of collecting data and presenting the findings. Hancock & Algozzine (2006) define case studies as studies that attempt to describe the events occurring in their natural conditions, using various data collection tools under time and space constraints. Case studies are ideal for understanding individual situations in depth and customizing the subject under investigation (Çepni, 2014). Autism spectrum disorder presents different symptoms and needs for each child. For this reason, the situation of each family and child should be evaluated individually (Patton, 2014). In this study to examine the expectations of families with children with ASD and teachers working with these children about online seminars on ASD, to reveal whether their expectations are met, and to collect their opinions and suggestions about the process in depth case study was preferred.

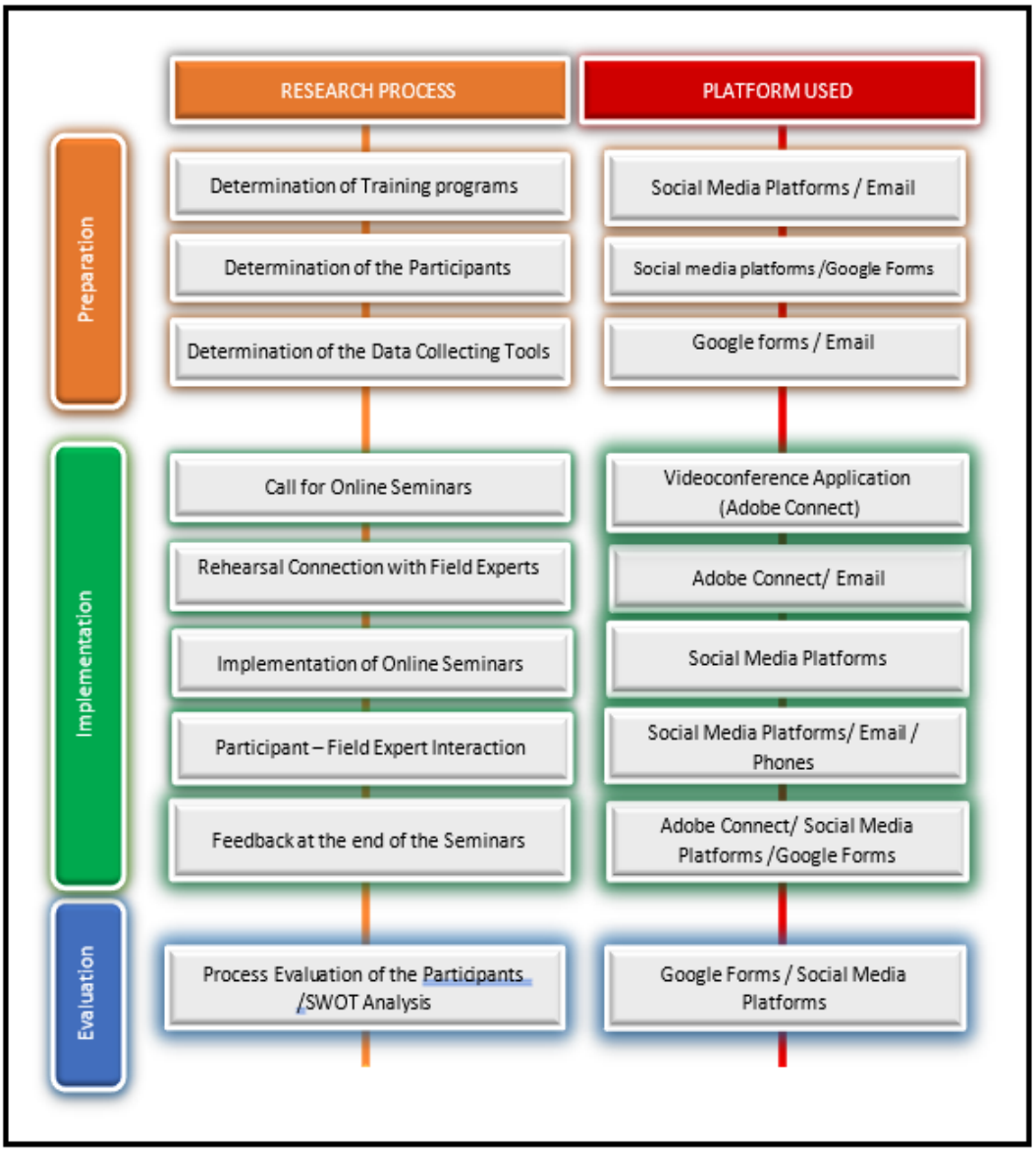
PROCESS

The whole OSA process from the determination of the participants and field experts, planning and realization of online seminars to the collection of data was planned as distance education (Figure 1).

During the process, email and social media messaging interfaces were used to collect opinions, to determine field experts and to collect expert opinions about data collection tools. A video-conferencing application (Adobe Connect) was used for synchronous seminars. Social media groups were used so that the participants could communicate with each other. And finally, Google documents and other form applications were used for data collection.

The OSA process was composed of three stages; preparation, application and evaluation.

Figure 1. *Research Process*



PREPARATION STAGE

During this nine-week long phase; the participants who voluntarily participated and the topics to be included, the field experts to facilitate the meetings and the calendar of OSA were determined.

Approximately 20,000 members of a closed social network group composed of family and teachers of individuals with ASD were informed about OSA process and their learning needs were inquired with entries about the event. These announcements were repeated regularly on the social network and the applications for OSA were received for nine weeks. The comments were also collected in order to shape the content of the seminars. Along with these demands, relevant field experts were reached, and a seminar program was created with the experts who agreed to perform seminars. The seminar topics, expertise, titles and the locations of the facilitator experts who contributed to the OSA process are presented in Table 1.

Table 1. *OSA Process' Details*

Number	*Title of the Seminar*	*Expert Speakers*	*Location of Attendance*	*Themes*
1	Education of Individuals with Autism	Special Education Expert, instructor, Master's	Ankara (Türkiye)	Characteristics of Individuals with Autism Educational Process Family – School Cooperation Q&A
2	Behavioral Problems of Individuals with Autism	Special Education Expert, Ph.D.	Samsun (Türkiye)	Behavioral Problems & Suggested Solutions Sample Cases Q&A
3	Applied Behavior Analysis (ABA) Method in the Education of Individuals with Autism	Special Education Expert ABA Therapist, Master's	Atlanta (USA)	What is/ What is not ABA Critical Points of ABA Sample Cases Q&A
4	Sexual Development and Adolescence in Individuals with Autism	Special Education Expert, Ph.D.	Eskişehir (Türkiye)	Sexual Education: From Infancy to Puberty Ways to Deal with Sexual Urges How to teach self-care in Puberty? Duties of Families and Educators Q&A
5	Educational Rights of Individuals with Autism	Lawyer	İstanbul (Türkiye)	What are the Educational Rights of Individuals with Autism? What should Individuals and Their Families Who Cannot Use These Rights Do? NGOs and Their Roles Q&A
6	Living with an Individual with Autism	Senior Psychologist, Ph.D.	İstanbul (Türkiye)	Psychological states of parents with autistic individuals Ways to deal with life with autism Q&A
7	State Support for Individuals with Autism	Family& Social Policies (ASP) Provincial Director	Trabzon (Türkiye)	Diagnostic Process Medical Examination and Doctor Visits of Individuals with Autism Q&A

In the selection of research groups of qualitative studies, the main concern is not whether the sample represents the universe. That research group is suitable for the research topic is more important (Patton, 2014). Purposeful sampling was preferred for this study. The "Seminar Participation Form" was added to the announcement text, which was published on the mentioned social network. As a result of the selection process, the research group was composed of totally 54 volunteer participants. 36 of the participants were the relatives of individuals with ASD (10 housewives, 8 teachers) and 18 of them were professionals working with individuals with special needs. Eight of the participants were men and forty-six of them were women. Approximately half (f=22) of the participants were between the ages of 30-39 and eighteen of them were 40-49. The participants were from 22 different cities and from 6 different geographical regions of Turkey. Four of them were located in other countries. Participants who are family members were coded as PF1, PF2, …, PF36 and teachers were coded as PT37, PT38, …, PT54. Features of participants are presented in Table 2.

Table 2. *Features of Participants*

Features		*(f)*	*%*
Gender	Male	46	85.2
	Female	8	14.5
Age	20-29	13	24.0
	30-39	22	40.7
	40-49	18	33.3
	50-59	1	1.8
Relationship with the Autistic Person	Parents	32	59.2
	Aunt	2	3.7
	Neighbor	2	3.7
	Teacher	18	33.3
Profession	Teacher (parents)	9	29,6
	Housewife	10	18.5
	Engineer	3	5.55
	Accountant	2	3.7
	Health care worker	2	3.7
	Officer	2	3.7
	Lawyer	2	3.7
	Other	5	9.25
	Manager (1), Beauty expert (1), Biologist (1), Journalist (1), Psychologist (1)		
	Teacher and Psychologist (professional)	18	33.3

IMPLEMENTATION STAGE

In the second phase, online seminars were held, and data were collected. Certain precautions were taken to minimize the accuracy, participation and timing problems. Prior to the first seminar, a trial connection was made in order to introduce the stakeholders to each other, inform them about the seminar process and get them acquainted with the Adobe Connect environment. In the OSA group created in the social network, periodical announcements were made regarding the online seminar of the week.

After each session "Session Evaluation Form" was applied for the related session. At the end of the meeting, the link of this form was shared at the chat section of the Adobe Connect software and published as a notification in the OSA group. In addition, the links were sent to all participants as a message. Online seminar sessions were planned and implemented once a week with the duration of 90 minutes between 22:30 and 24:00. Only one seminar was planned as 180 minutes upon the request of the facilitator expert.

EVALUATION STAGE

SWOT analysis (Schooley, 2019) assessing the OSA process was conducted in this one-week-long phase. This analysis method is used to evaluate the studies at the end of the distance education process (Gupta & Sharma, 2020; Hallal et al., 2020).

MEASURES TAKEN to REDUCE the TRANSACTIONAL DISTANCE

Certain precautions were taken to reduce the transactional distance in OSA process. The dialogue variable was reinforced by supporting effective use of the question-and-answer sections. Experts' voluntarily sharing their contact information also contributed to the dialogue. The creation and use of the closed social network group where participants could communicate with both each other and the researchers even out of the seminar times also supported the dialogue variable. The structure variable was supported by using the environment where the field experts and participants can communicate simultaneously during the OSA process. The contents of the online seminars were

shaped along with the participant needs but flexibility was provided so as to give space to let the flow of each individual seminar be diverted when participant questions required. The student autonomy variable was tried to be supported by letting participants participate in online seminars with their own username and password or with the "guest" login, as a feature of the program used. They were provided the opportunity to contribute with audial, visual or text-based interphases. Thanks to the videoconference tool used, the sessions were recorded and the participants could access the seminar content whenever they wanted via the relevant social network where the videos were saved and shared.

DATA COLLECTION PROCESS

Data collection tools that collected qualitative and quantitative data together were used in the research. However, due to the nature of the research, forms suitable for qualitative research were preferred. During this process, each tool was developed along with the determined needs. Then they were applied to two people from the target group (families with children with ASD) but not in the participant group to evaluate the comprehensibility of the tool. In the final stage, three IT field experts evaluated them. Figure 2 shows data collection tools used at respective stages.

Figure 2. *Data Collection Tools*

Participation Request Form was used to determine the participants, and Expectation Form was used to determine the expectations of the participants from the OSA process during the data collection process in the preparation phase. After each completed online seminar session, the opinions of the participants about the relevant seminar were collected with "Session Evaluation Form". In addition, online seminars were recorded to prevent data loss. Session evaluation form: inquires whether the participants have technical problems, participants' opinions about the most beneficial part of the session, their satisfaction level and their further remarks.

After all the sessions were completed, the Seminar Satisfaction Form was used to determine the opinions and satisfaction levels of the participants about the OSA process. The data obtained from these two forms were also used during the SWOT analysis of the study at the evaluation stage.

DATA ANALYSIS

The data collection tools used in the research process included open-ended and scale ranking questions. Open-ended questions were analyzed with content analysis. In this process, the data obtained from the responses were coded, and themes were obtained from codes with similar characteristics. The obtained themes and codes were presented in tables indicating the repetition percentages of the codes. Each individual seminar session was first evaluated within itself and then the overall process was evaluated in percentages. In the analysis, scale ratings in these forms and the frequency of the answers given by the participants were expressed with frequencies and displayed in the tables including the relevant answers.

Based on the data obtained from both the Session Evaluation Forms and the Contention Form applied at the end of the whole process a SWOT analysis of the study was carried out. The respective answers given by the participants at the highest frequency were evaluated as the strengths (S) of the OSA process, the negativities and weaknesses (W) of the process, the opportunities offered by the process for the participants (O) and possible problems as threats (T). The data obtained in that way were grouped and presented as the results of the analysis.

NATURE of the RESEARCH

The criteria that reveal the academic value of the research are the concepts of validity and reliability (Miles & Huberman, 2016). Equivalent concepts better fitting the nature of data are preferred in studies with qualitative segments. Credibility concept is used instead of internal validity, transferability instead of external validity, dependability instead of internal reliability and confirmability instead of external reliability (Patton, 2014). Accordingly, strategies framed by the related literature were followed throughout the study (Miles & Huberman, 2016; Patton, 2014)

Apart from the seminars and their topics, the researcher shared additional notifications with the participant group over the social network during the research. Since the mentioned researcher is a parent with a teenager with ASD herself and has commons with the life of the participant group, she was able to reflect the participants' emotions and thoughts effectively on the research. She is both a field expert in distance education and also has been involved in the autism community in different ways for more than 10 years. She is a board member of the Autism Association in the city he lives in. At the same time, she is the manager of various autism societies on social media. As a matter of fact, the starting point of this study was similar problems shared in social media communities where families of individuals with autism got together. In this direction, research solutions were determined and investigated with appropriate research methods. Moreover, mentioned autism communities were used in determining the sample and reaching the experts. The results of the study were also shared with these communities. The vast majority of the findings of these study was obtained and presented by intended and informed involvement of the communities experiencing autism directly.

The findings were presented with direct quotations from these expressions of the participants. The research method, research process and characteristics of the research group were explained in detail. In addition, other similar training environments where research results can be tested further have been suggested. Data collection and data analysis methods were explained in detail and different data collection tools were used.

In addition, the findings of the study were checked by another distance education expert researcher. The codes that this researcher did not agree with were discussed and reorganized. The individuals who provided the data for the study were clearly defined, the results of the research were expressed extensively by associating to the findings and the data obtained from all data collection tools were stored in electronic media for future references.

RESULTS

PARTICIPANTS' EXPECTATIONS

The answers of the participants to the question “What are your expectations from On-line Seminars on Autism Spectrum Disorders?” were summarized in Table 3.

Table 3. *Participant Expectations*

Theme	*Code*	*% **	*Participant Expressions*
Getting information %64,8	ASD	38.8	"Learning new information about autism and finding answers on how to ease this burden on my child and myself." (PF7)
	Education of children with ASD	14.8	"I do not have much knowledge and experience in educating children with autism. I would like to have useful information about it and its application" (PT41)
	Legal rights in ASD	5.0	"To have more and practical knowledge about our rights." (PF11)
	Alternative treatments for ASD	5.0	"To learn different education and treatment methods in autism, to have an idea about what is commonly done and how well they work." (PF1)
Communication/ sharing %38,8	With families with ASD children	22.2	"To understand autism better and to share information with families with similar problems" (PF6)
	With field experts	16.6	"To re-examine the subject of autism with the lead of experts in the field. To be able to produce alternative solutions for the problem behaviors that I encounter in the classroom on daily basis." (PT39)
Improvement %24,1	Professional related to ASD	12.9	"To update and improve my knowledge and experience." (PT37)
	Personal related to ASD	11.1	"Finding answers to my questions, improving myself." (PF32)

*The participants gave more than one answer.

When Table 3 is examined, it is seen that the expectations of the participants were accumulated under the themes of "Getting information" and "Sharing". The main reason that made participants want to attend a seminar is to learn about ASD (%64.8). Other topics that the participants wanted to learn about were "Education of individuals with ASD" (14.8%), "Legal rights of individuals with ASD" (5.0%) and "ASD treatment methods" (5.0%). "Communication/Sharing" theme was shaped as "Sharing issues with other families" (22.2%) and "Sharing issues with experts" (16.6%). Other expectations of the participants regarding the OSA process were expressed as "Obtaining professional development" (12.9%) and "Obtaining personal development" (11.1%).

THE STATE of MEETING the EXPECTATIONS of the PARTICIPANTS from the OSA PROCESS

The answers given to the "Session Evaluation Form" which is directed to the participants at the end of each of the online seminar were analyzed. The results were presented in Table 4.

When Table 4 is examined, it is seen that the participants benefited from the online OSA seminars they attended in terms of "Acquiring Information", "Sharing", "Expert Qualification" and "Distance Education". The most frequently expressed opinion was that the participants were informed about the relevant seminar (53.3%). This opinion was expressed with the highest percentage (87.5%) for the fourth seminar on Sexual Development. This seminar is followed by the seminar on State Support with 71.4% and the seminar on Education Rights with 70%, respectively. The opinions on the theme of "Sharing" were expressed with the highest percentage (45.7%) in the first seminar with the title of Education. That this seminar had a question & answer part was the most frequently mentioned item under the sharing theme.

Table 4. *The State of Meeting the Expectations of the Participants*

	Online Seminars								
Themes	*Education*	*Behavioral Problems*	*ABA*	*Sexual Development*	*Education Rights*	*Life with Autism*	*Governmental support*	*Total*	*Samples*
Acquiring Information	22,8%	47,8%	60,0%	87,5%	70,0%	46,6%	71,4%	53,5%	"I was very pleased that such clear and understandable information about sexual education was shared. I had a better understanding of my mistakes and what I did right." (PT47, Seminar 4)
Sharing	45.7%	21.7%	10.0%	6,25%	5.0%	-	7.1%	18.9%	"Since we are just at the beginning of this journey, it was nice that experienced families shared their problems and expressed their opinions. These were all valuable experiences for us." (PF8, Seminar I). Opportunity to ask questions directly." (PT38, Seminar II).
Expert Qualification	8.5%	17.3%	23.3%	10.5%	20.0%	33.3%	7.1%	17.6%	"Due to the fact that the seminar facilitator knows the subject both as a family member and as an expert, even the theoretical knowledge she explained was directly applicable."(PF11, Seminar 6).
Distance Education	2.8%	26.0%	6.66%	-	5.0%	-	7.1%	7.1%8	I think the most useful feature of the session was that it was online. It wasn't necessary to allocate extra time for participation or to meet in a certain place. In this way, we were able to participate from different provinces and we were able to reach the experts regardless where they were." (PT45, Seminar 2).

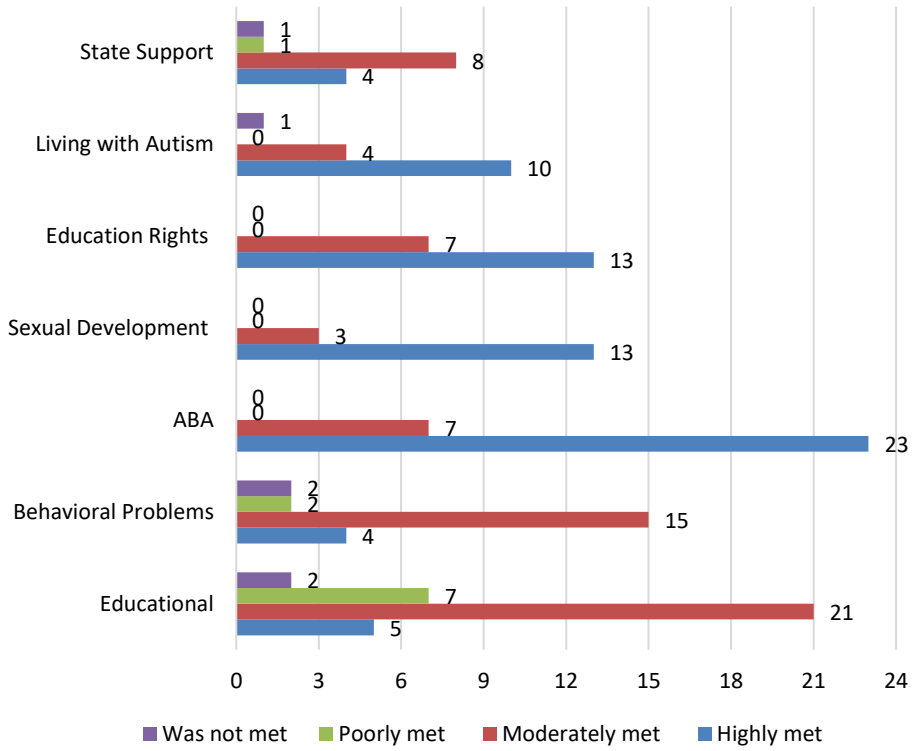
Another effective aspect of the online seminars was reported as the "Qualification of Experts". This situation was most frequently expressed for the sixth seminar on Life with Autism. 33.3% of the participants mentioned expert quality items for this seminar as: reaching a competent expert in the field, the speaker's comprehensible narration and the speaker's sharing of her knowledge and experience as a parent of a child with ASD. In the "Qualification of Experts" theme this seminar was followed by the fifth Seminar (20.0%) titled Education Rights.

"Distance education" was another theme that appeared in the data analysis. Opinions on this theme were that the seminars were online, connecting to the seminars from home and the suitable timings of seminars (late evening). The participants of the second seminar on Behavioral Problems (26.0%) submitted the highest rate of opinion regarding this theme.

At the end of the OSA process, the participants were requested to rank the level of their expectations met for each individual seminar with four levels between "the process reached my expectations at a high level" and "the process did not reach my expectations". Accordingly, the situation showing the level of realization of the expectations of the participants following that seminar is presented in Figure 3.

When Figure 3 is examined, the expectations of the participants from the seminars was highly met in the 3rd, 4th, 5th and 6th Seminars on ABA, Sexual Development, Behavioral Problems and Life with Autism, and at a moderate level in the 1st, 2nd, and 7th seminars on Education, Behavioral Problems and State Support.

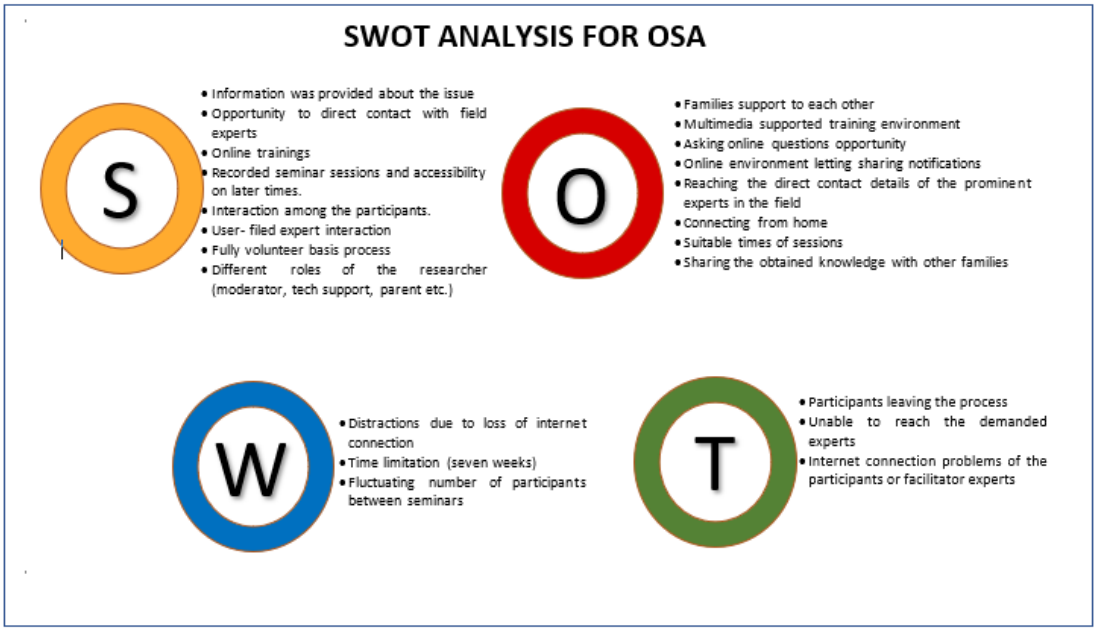
Figure 3. *Level of Participants' Expectations Met for Each Seminar*



EVALUATION of ONLINE TRAINING PROGRAM

After the implementation period of the research was completed, a SWOT analysis was conducted to determine the strengths and weaknesses of this study and to reveal the benefits and possible threats. For this process, the data obtained from the Session Evaluation Forms and Seminar Contention Form were used. The SWOT analysis carried out with the mentioned data was presented in Figure 4.

Figure 4. *SWOT Analysis of the OSA Process*



The strongest aspects of the online seminar process were determined as; that it provided participants with versatile information about ASD, the seminars had question and answer sections and they enabled participants to reach experts in the field. Its weaknesses were mainly seen as technical difficulties arising from the internet infrastructure or the use of the video conferencing system. Online seminars on OSB offered opportunities for the families to meet other families with ASD members, to have voice and written communication and interaction with them, to connect at home at suitable hours, to reach contact details of the speakers who are the prominent experts in the field and to receive information from the field experts who have children with ASD. The biggest threats encountered in these seminars were identified as the inconsistency of the number of participants and the availability of the relevant field experts.

DISCUSSION and CONCLUSION

EXPECTATIONS of PARTICIPANTS from the OSA PROCESS

The results based on the research findings showed that families with children with ASD and teachers working with these children expected to learn about ASD, its treatment and education of individuals with ASD. At the end of the research, the first theme related to the participant expectations was "Getting information". Therefore, it can be said that the expectations of the participants about the OSA process were met to a large extent. Similarly, as a result of their studies to determine the needs of families with individuals with special needs, Bailey and Simeonsson (1988) stated that the most fundamental need of families is "knowledge". In the adaptation study of the same scale used by (Bailey & Simeonsson, 1988) into Turkish, it is seen that the primary need of families was also "knowledge" (Cavkaytar et al., 2014). Furthermore, in Turkey, it was argued that families with children with ASD were not informed about autism before the diagnosis (Federation of Autism Associations [ODFED], 2017). Concerning the fact that the participants of the present study were mostly Turkey-resident families, this situation can be the reason for that the biggest expectation of the participants, who had not attended any trainings on ASD before, from the OSA process was to "acquire information" rather than different dimensions handled about ASD.

In family-centered practices, it is very important to determine family needs by including them in the process (Ghanadzade, Waltz & Ragi, 2018). In online applications, it is recommended to determine the needs of the participants and to prepare the content accordingly, particularly when the target community is adults (Bourdeaux & Schoenack, 2016; Sun et al., 2008). It was observed that in an online environment, adults who felt that they were not supported, and their views were not taken into account did not complete the training program (Park & Choi, 2009). For this reason, the expectations from online trainings should be clearly stated for adults. Therefore, the content of OSA was created by determining the expectations of the target group. The content, duration and even the application hours of the seminars were planned accordingly.

MEETING of PARTICIPANTS' EXPECTATIONS REGARDING the OSA PROCESS

The theme mostly lived up to the participants' expectations from the OSA process is "acquiring knowledge". When the source of this satisfaction is considered, several reasons can be speculated: the speakers were prominent experts of their fields, they joined the process voluntarily, presented their knowledge to the participants sincerely, shared their contact details and answered the questions of the participants diligently. These points also led to the emergence of the “expert qualification” theme in the research findings. Although the participants did not have such an expectation at the beginning of OSA, they specifically mention the quality of the experts in their evaluations during the process.

Another important expectation of the participants; mutual sharing experiences with field experts and experienced families also emerged as one of the expectations met at the end of the research. Families with children with ASD may perceive themselves as part of a large autism family and

can learn a lot from each other in this way (Cahapay, 2020). For this reason, the environment of OSA process was planned to maximize the interaction of families with each other. The fact that the OSA process was planned within the framework of the Transactional Distance Theory may also have been effective in the realization of the “sharing” expectation. Comparing to face-to-face environments, the success of online environments providing time and space independence mediated flexible learning opportunities, directly related to interaction (Luo et al., 2017; Wu et al., 2020). Several online implementation studies have emphasized student-teacher, student-student and student-system interactions (Crawford-Ferre & Wiest, 2012; Meyer & McNeal, 2011; Moore, 1997; Parker, 2015). Presence of these interactions affect the intended achievement, satisfaction, and efficiency of online applications (Bolliger & Martindale 2004; Swan, Shea, Fredericksen Pickett & Maher, 2000). The interaction between the participants, field experts and the presented content of this study was tried to be kept at a high level as much as possible. During the implementations, the participants were able to write or verbally ask their questions about the subject, they received instant feedbacks and interacted with each other using the chat option. In addition, the participants went on communication and sharing in the closed social media group. These factors might have affected the participants' satisfaction under the theme of "sharing."

Another situation related to meeting the expectations was the method used. The advantages of the distance education method were not described by the participants at the beginning of the process. However, they gave positive feedback about that during the process. In this synchronous online process, the participants may have experienced the satisfaction of finding answers to their problems by connecting from their homes to seminars of reasonable time (evening) and durations, without having to mind their children while they are asleep. In the study investigating the effectiveness of the online family education program, Kolb (2007) stated that families with children with ASD could not attend the face-to-face training sessions due to their working conditions or not to have someone to take care of their children. The situation of families who cannot benefit from local special education services is defined as a "double barrier" (Dabrowska & Pisula, 2010). Family distance education offers very favorable environments for individuals with such limitations (Hermaszewska & Sin, 2020; Kolb, 2007; Zimmerman, 2013). Similarly, teachers who work with individuals with ASD can have appropriate time management by participating in seminars held through distance education for their professional development (Vismara, Young, Stahmer, McMahon Griffith & Rogers, 2009).

EVALUATION of the OSA PROCESS

In the present study, the evaluation of the OSA process was carried out with SWOT analysis. Meeting the expectations of the participants was considered as one of the strengths of the OSA process. The other strengths of the OSA process can be listed as participants’ acquiring information about the ASD, that the seminars were recorded for further inquiries and that the process planned with sound interconnectedness.

The biggest threat to OSA process was the participants’ leaving the training process unfinished. This situation had encountered in other online education programs. Knap (2015) started the family education program with five families, but only three of these families completed the program. Similarly, Werba et al. (2006) examined the reasons why the families quit the education program and stated that one third of the participants did not complete the study. They argued that this abortion tendency is related to factors such as time, age of the participant, being a single parent, being on an education waiting list and stress. Pickard et al. (2016) also stated that there were families who could not complete the online family education program and this situation was related to time and technology. In the present study, no in-depth research was conducted on the decreasing number of participants. However, based on the researchers’ observations and opinions about the process; this situation can be explained by time shortage and that families feel relaxed about missing the sessions since they had known that the seminars were being recorded and would be available later on.

Periodical family training programs have potential to provide families with accurate and first-hand information about ASD, increase the contribution of families to the development process of their children, and contribute to the reduction of massive stress on families. The global COVID-19 epidemic has caused many trainings to be moved to the online environment. Well-planned online programs exist as effective alternatives for families with ASD individuals and professionals during the pandemic and beyond.

It seems family education programs are quite overt to decreasing number of participants through the process, no matter how well they are planned. As it was observed in the present study, this is also valid for online family education programs. Concrete reasons for this situation can be explored in depth with further studies. The following precautions are thought to have potential to minimize this situation in online family education programs; determining the needs of families before the training programs are chosen, organizing the training hours in such a way that families can easily participate (like 22:00 in the evening). In future research, while a training program on ASD is being designed, a family training program that only families will participate in can be developed and the effectiveness of this program can be investigated by using one of the experimental methods with a control group.

In online applications, the individual competencies and motivations of the participants are among the most important factors affecting their learning and participation. Although an optimum "learner autonomy" was tried to be established within the framework, the number of participants in each session of the seven-week OSA implementation process differed from each other. Similarly, it was observed that there was a decrease in the number of seminar participants through the end of the process. The method of this research was designed with a single group. The absence of a control group is seen as a limitation. The fact that the participants had not participated in such a training before may have affected their views positively. In this study, participants were not asked about their educational background, but they were asked about their profession. This situation can be considered as another limitation of the study.

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AUTHOR CONTRIBUTIONS

The first author contributed to data collection of the research data, literature review, data analysis, and presentation of the findings and preparing the discussion and conclusion sections. The second author contributed to determining the theoretical framework of the study, analyzing the data, and preparation of the methodology. Both authors critically reviewed the article and approved the final version.

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Do Personality Traits Influence Nomophobia? An Investigation of the Big Five Personality Traits and Nomophobia Levels in University Students

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Abstract

This study examines the relationship between nomophobia and the Big Five personality traits: extraversion, openness, neuroticism, agreeableness, and conscientiousness. Accordingly, the non-experimental correlational methodology was used in this study. In this context, 484 university students were reached using the convenience sampling method. The Nomophobia Scale and the Big Five Inventory were used as data collection instruments. Multiple regression analysis was conducted to determine whether university students' Big Five personality traits predict their level of nomophobia and subfactors of nomophobia. The results showed that the students were moderately nomophobic. In addition, there was a significant predictive positive correlation between extraversion, openness, neuroticism and nomophobia. According to the results, nomophobia, the fear of losing connectedness, and the fear of being unable to communicate are more common in those with neuroticism. Individuals with high levels of openness and neuroticism are more likely to be afraid of giving up convenience. In addition, more open individuals are more likely to be afraid about not being able to access information. On the other hand, no correlation was found between agreeableness and conscientiousness characteristics and nomophobia. Finally, some recommendations for researchers and practitioners are suggested.

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INTRODUCTION

Today, smartphones that enable people to make voice calls, play games, watch videos, and perform many more activities simultaneously have become indispensable in daily life. Although smartphones are valuable tools with life-facilitating features, excessive use of smartphones by individuals has turned this into captivity instead of an advantage. Studies focusing on the consequences of smartphone addiction and its problematic use are common in the literature (Kim & Koh, 2018; Mahapatra, 2019; Yıldız-Durak, 2019). Smartphone addiction is expressed as a behavioural type in the literature due to its symptoms (Arpaci & Kocadag Unver, 2020). Previous studies stated that smartphones might cause unfavourable conditions like compulsive checking habits (Oulasvirta et al., 2012), addiction (Augner & Hacker, 2012), low academic achievement (Kibona & Mgaya, 2015), lower social interaction (Dwyer et al., 2018) and wrist and neck pain (Han et al., 2017). Indeed, although the addiction developed against smartphones is similar to other technological addictions, it can be asserted that smartphones may be a much more dangerous type of addiction because they are mobile and provide internet connection anywhere, anytime (Demirci et al., 2014).

Another problem concerning the problematic use of smartphones, nomophobia, has recently attracted the attention of researchers (Gezgin et al., 2018; Han et al., 2017; Mendoza et al., 2018; Yıldırım & Correia, 2015). Nomophobia is an abbreviation for “No mobile phone phobia”. Nomophobia is an uncontrollable fear that arises when someone cannot use or access a cellphone (Yıldırım & Correia, 2015). Although this concept is not included in the Diagnostic and Statistical Manual of Mental Disorders (DSM-V), the researchers indicate that it should be included in the DSM-V as a psychological disorder because it shows similarities with clinical features encountered in other disorders like anxiety, addiction and obsessive-compulsive disorder (Bragazzi & Del Puente, 2014; King et al., 2013). When the studies in the literature are examined, it is seen that smartphones are widely used especially among university students and are in the first place in adapting to these devices (Notara et al., 2021). In the study conducted by Qutishat et al. (2020), it was found that nomophobia was found in 99.33% of university students in Oman.

It can be said that nomophobia can cause significant problems in students' academic lives as well as in their social lives. For instance; Nomophobic students may encounter problems such as low motivation, focusing problems, decrease in academic success and anxiety when they cannot reach their mobile phones (Tuco et al., 2023). It can be said that it is important to reveal the variables and predictors associated with nomophobia in order to overcome all these problems and to enable students to cope with these problems. Various studies in the literature have reported a relationship between personal traits and addictive behaviours (Shenassa et al., 2012; Walther et al., 2012). Thus, to avoid nomophobia and to overcome related problems, it is essential to reveal its connection with personality traits. However, there is a relatively limited number of studies investigating the excessive use of smartphones at the addiction level or personality traits concerning nomophobia. In this context, in the study conducted by Oz and Tortop (2018) with university students, it was found that there was a positive relationship between extraversion, agreeableness, openness and conscientiousness personality traits and nomophobia, and a weak negative relationship with neuroticism. As a result of the study conducted by Amiri and Thaghinejad (2022) with university students, it was found that there was a negative relationship between extroversion, openness, agreeableness, self-esteem and conscientiousness personality traits and nomophobia, while there was a positive relationship between neuroticism and nomophobia.

However, as is seen in these studies, the results obtained in the relevant literature needed to be more consistent. Accordingly, there is a need for more studies to get consistent results concerning the correlation of personality traits with nomophobia. In addition, as seen in the studies above, the studies on nomophobia have mainly examined the correlation of specific or narrow aspects of an individual’s personality and how they make them inclined to nomophobia. Additionally, a limited number of

studies in literature examine nomophobia in terms of broader traits like the Five-Factor Model of personality. Therefore, a comprehensive examination of personality traits will facilitate catching the matters that may be unnoticed due to examining the personality from a narrow perspective. Based on this problem in the study, it can be said that it is essential to reveal the possible relationships and predictors of nomophobia. Accordingly, in this study, the correlations between nomophobia and personality traits were analysed based on the Five-Factor Model of personality, which is used commonly and handles the personality in five broad dimensions (extraversion, openness, neuroticism, agreeableness and conscientiousness).

The Five-Factor Model of personality traits is also usually used as the "Big Five" (John et al., 2008). Therefore, the concept of "Big Five Personality Traits" was used in this study. These five personality traits can briefly be defined as follows: extraversion indicates establishing interpersonal interactions intensely and frequently and being energetic and optimistic; openness indicates being tolerant to thought flexibility and new opinions; neuroticism indicates being inclined to experience a variety of emotional distresses, constrained urges and unrealistic opinions; agreeableness indicates being sympathetic, cooperative and empathetic; and conscientiousness indicates having self-control, order and endeavour (McCrae & Sutin, 2007). It can be helpful to understand how personality qualities, especially the Big Five, relate to nomophobia to better understand how susceptible individuals are to the disorder and its possible psychological effects. More precisely, there has been consistent evidence linking greater levels of nomophobia to neuroticism, which is characterised by inclinations toward anxiety, concern, and emotional instability (Kaplan Serin & Derya Ister, 2022; Uguz & Bacaksiz, 2022). Strong neurotic people depend on their phones for comfort and emotional regulation; thus, being without them increases their risk of experiencing dread and anxiety. More studies are needed on the connection between agreeableness and nomophobia. However, agreeable people who empathise, collaborate, and desire social harmony may use phones to maintain connections and social bonds. More research is required to fully comprehend agreeableness's role in predicting nomophobia and how it could interact with other personality qualities.

Personality traits are critical factors affecting problematic behaviours (Gao et al., 2022). Studies on excessive technology use substantially examined how individuals' personalities make them inclined to display specific behaviours. However, the number of studies investigating personality traits concerning problematic smartphone use or nomophobia is still relatively limited (Olivencia-Carrión et al., 2018). Furthermore, although nomophobia is common among university students, studies on this matter are inadequate. Although research on the correlation between the Big Five personality traits and nomophobia is still ongoing, the evidence that does exist suggests that some traits, most notably Neuroticism and Conscientiousness, may be important indicators of nomophobia (Amiri & Taghinejad, 2022; Lee et al., 2014). A further study using standardised personality traits and tests of nomophobia is needed to fully understand the complex relationship between personality factors and smartphone-related concerns and behaviours, and smartphone-related concerns and behaviours. Also, revealing the possible correlation of nomophobia with the personality traits of university students will facilitate intervening in problematic behaviours. Therefore, it can be asserted that the study is essential due to its contributions to both researchers and implementers in the struggle against nomophobia by extending the findings in the literature. Accordingly, the research questions examined in the study were as follows:

- What are the levels of nomophobia and the Big Five personality traits among university students?
- Is there a significant correlation between nomophobia and the Big Five personality traits in university students?

• Do university students' big five personality traits predict their level of nomophobia, fear of loss of connectedness, inability to communicate, loss of comfort, and inability to access information?

METHOD

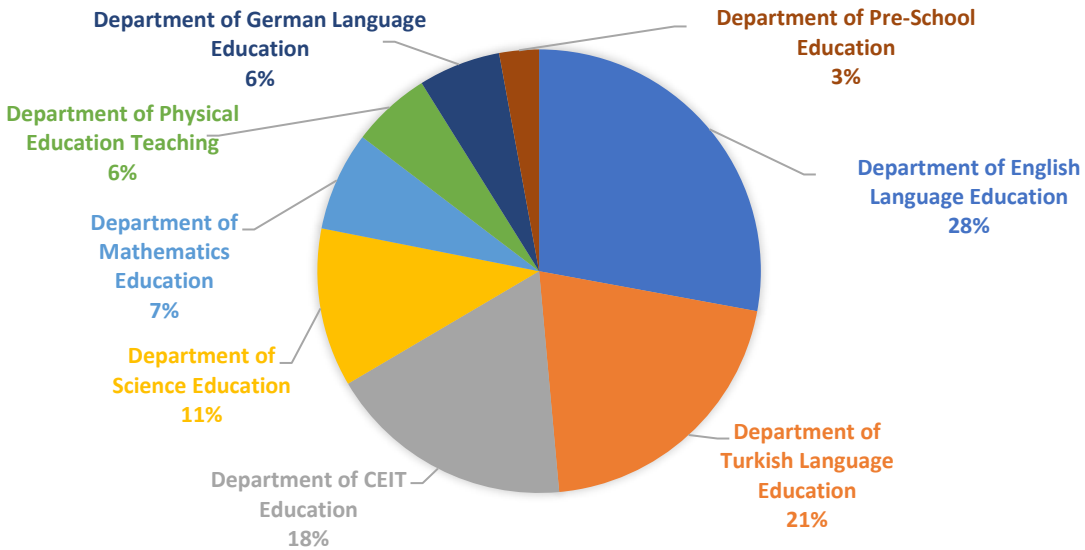
RESEARCH DESIGN

This study used a non-experimental correlational methodology. A non-experimental research design was chosen since no variables were manipulated and there were no comparison groups. Correlational design was selected because the study aimed to explore the relationships between nomophobia levels of university students and the Big Five Personality Traits, which is also the aim of correlational research. The correlational method reveals correlations between variables (McMillan & Schumacher, 2010) without intervening (Fraenkel & Wallen, 2000). Correlational research examines how variables relate by examining simple relationships or more complex predictive models (Johnson, 2001). Accordingly, this method was explicitly used to explore the correlations between levels of nomophobia and the Big Five personality traits of university students.

RESEARCH SAMPLE

The study population consists of students studying at education faculties in Turkey. By using the convenience sampling method in selecting the sample from the population, the education faculty students studying at a university in the Eastern Region of Turkey were reached in 2020. The convenience sampling method was used since the researchers conducted the study in their faculty. A total of 484 university students from different departments participated in the study. 38% of the participants in the study were male, and 62% were female. Detailed information about the sample is given in Figure 1.

Figure 1. *Distribution of the Study Sample by Branches*



According to Figure 1, 28% of the students are studying in the Department of English Language Education, 21% in the Department of Turkish Language Education and 18% in the Department of CEIT Education. Compared to other departments, the percentage of students in the Department of Pre-school Education is the lowest in the sample distribution.

In terms of sample characteristics, information about students' daily mobile device usage time, daily searches, frequency of checking Facebook, Twitter, Instagram, and email accounts, importance of mobile devices in their lives, and number of social media accounts is presented in Table 1.

39% of the students use their cell phones for 3-5 hours, and 29.8% use their cell phones for 5-8 hours. The percentage of students who check their phones for calls every hour is 25.8%, 2-4 times a day is 24%, and 5-10 times a day is 22.8%. Analysing the active social media accounts, 44.6% have 1-2 and 34.3% have 3-4 social media accounts. It is revealed that while students check their Facebook and Twitter accounts once a day, they check their Instagram accounts once an hour or at least ten times. In addition, 66.9% of students check their email accounts once a day. In addition, 65.9% of students believe that their mobile device is "important" or "very important" in their lives.

Table 1. *Descriptive Findings of the Study*

	f	%		*f*	%
Mobile Device Duration of Daily Use			*Number of Social Media Accounts*		
Less than 1 hour	17	3.5	0	10	2.1
1 to 2 hours	66	13.6	1-2	216	44.6
3 to 5 hours	189	39.0	3-4	166	34.3
5 to 8 hours	144	29.8	5-6	72	14.9
More than 9 hours	68	14.0	More than 7	20	4.1
Frequency of Checking Instagram Account Daily			*Frequency of Checking Twitter Account Daily*		
No account	48	9.9	No account	180	37.2
Once a day	38	7.9	Once a day	186	38.4
2-4 times a day	75	15.5	2-4 times a day	59	12.2
5-10 times a day	111	22.9	5-10 times a day	33	6.8
At least 10 times a day	109	22.5	At least 10 times a day	10	2.1
Every hour	103	21.3	Every hour	16	3.3
Frequency of Checking Facebook Account Daily			*The Importance of Mobile Devices in Their Life*		
No account	101	20.9	Strongly not important	19	3.9
Once a day	188	38.8	Not important	39	8.1
2-4 times a day	124	25.6	Undecided	107	22.1
5-10 times a day	43	8.9	Important	151	31.2
At least 10 times a day	15	3.1	Strongly important	168	34.7
Every hour	13	2.7			
Frequency of Checking Calls Daily			*Frequency of Checking E-Mail Accounts Daily*		
Once a day	52	10.7	Once a day	324	66.9
2-4 times a day	116	24.0	2-4 times a day	91	18.8
5-10 times a day	63	22.8	5-10 times a day	40	8.3
At least 10 times a day	74	15.3	At least 10 times a day	12	2.5
Every hour	125	25.8	Every hour	17	3.5

DATA COLLECTION TOOLS AND PROCEDURE

Two data collection instruments were used for the aim of the research. The first instrument tested the students' nomophobia level. The Nomophobia Scale was developed by Yıldırım and Correira (2015), and Erdem et al. (2017) adapted the Turkish scale from a 7-point Likert type to a 5-point Likert type. This study used the Erdem et al. (2017) scale as a 5-point Likert type. The Nomophobia scale has four dimensions: (1) not being able to communicate (6 items), (2) losing connectedness (5 items), (3) not being able to access information (4 items), and (4) giving up convenience (5 items). Cronbach's alpha values of factors were .939, .874, .827, and .814, respectively. Overall Cronbach's alpha value is .945 (Yıldırım & Correira, 2015). In this study, overall, Cronbach's alpha value is .918.

The second instrument assesses students' big five personality traits. Big Five Inventory was developed by John et al. (1991) and adapted in Turkish by Alkan (2006). It has five personality dimensions (1) extraversion, (2) openness, (3) neuroticism, (4) agreeableness and (5) conscientiousness, and it consists of 44 items on a 5-point scale. Its overall Cronbach's alpha value is

.87. In this study, the overall Cronbach's alpha value is .741. The ethics committee document of the study was obtained. Data collection tools do not include questions that may pose any ethical problems. In addition, data were collected from students voluntarily.

DATA ANALYSIS

First, descriptive analysis used frequencies and percentages to examine students' habits and mobile application usage information. Then, a multiple regression analysis is conducted to reveal whether the big five personality traits of university students predict their level of nomophobia and sub-factors of nomophobia. The assumptions were first checked to perform multiple regression; the data had a normal and homogeneous distribution. In addition, it was determined that a low-level correlation was found between the independent variables. Field (2009) indicates that correlation values between 0.80-0.90 are high. None of the variables' correlation values in the study are in this range. Examining the correlation between independent variables is one of many ways (Can, 2018). Tolerance (1/VIF) and VIF values are essential to determining multiple correlations. It is known that there is no numerous correlations when the VIF value is smaller than ten, and the tolerance value is larger than 0.2. Our VIF and tolerance values are in the specified range. In addition, autocorrelation values are an appropriate value range in all regression models (Durbin-Watson=1700). After normality and regression analysis assumptions were verified, a multiple regression analysis was conducted using the "enter" method.

FINDINGS

WHAT ARE THE LEVELS OF NOMOPHOBIA AND THE BIG FIVE PERSONALITY TRAITS AMONG UNIVERSITY STUDENTS?

When university students' levels of nomophobia and Big Five personality traits are analyzed, they are not so high (M=3.09, SD=.764). They are most afraid of being unable to access information (M=3.34, SD=.982) and least afraid of losing connectedness (M=2.63, SD=.927). Detailed information regarding the level of nomophobia and the Big Five personality traits of university students is presented in Table 2.

Table 2. *Level of Nomophobia and Big Five Personality Traits of University Students*

	Mean	*SD*
Level of nomophobia	3.09	.764
Losing connectedness	2.63	.927
Not being able to communicate	3.33	.994
Giving up convenience	3.07	.859
Not being able to access information	3.34	.982
Personality traits		
Openness	3.58	.638
Conscientiousness	3.42	.685
Extraversion	3.05	.627
Agreeableness	3.67	.609
Neuroticism	3.08	.727

IS THERE A SIGNIFICANT CORRELATION BETWEEN NOMOPHOBIA AND THE BIG FIVE PERSONALITY TRAITS IN UNIVERSITY STUDENTS?

This study examines the correlation between nomophobia and university students' Big Five personality traits. The results show low levels and significant positive correlations between some variables (p<.05). Detailed information about the correlations is presented in Table 3.

According to Table 3, there is a statistically significant relationship between "Openness", "Extraversion", "Neuroticism", and "Nomophobia" (p<.01). While there is a weak-positive correlation between “Losing connectedness” and Neuroticism, there is a weak-negative correlation between “Losing connectedness” and Agreeableness. In addition, it is seen that “Not being able to communicate” has a weak-positive relationship with Openness, Extraversion, Agreeableness, and Neuroticism traits. Furthermore, there is a weak positive correlation between “Giving up convenience”, Openness and Neuroticism. Lastly, it is determined that “Not being able to access information” has a weak-positive relationship with Openness and Extraversion (p<.01).

Table 3. *Correlation Between the Level of Nomophobia and Big Five Personality Traits of University Students*

	Openness	*Conscientiousness*	*Extraversion*	*Agreeableness*	*Neuroticism*
Nomophobia	**.132****	-.013	**.122****	-.064	**.135****
Losing connectedness	.013	-.089	.074	**-.251****	**.156****
Not being able to communicate	**.149****	.053	**.129****	**.092****	**.145****
Giving up convenience	**.115***	-.011	.086	-.075	**.128****
Not being able to access information	**.146****	-.017	**.098***	-.009	-.022

***. Correlation is significant at the 0.01 level (2-tailed).*

**. Correlation is significant at the 0.05 level (2-tailed).*

DO UNIVERSITY STUDENTS' BIG FIVE PERSONALITY TRAITS PREDICT THEIR LEVEL OF NOMOPHOBIA, FEAR OF LOSS OF CONNECTEDNESS, INABILITY TO COMMUNICATE, LOSS OF COMFORT, AND INABILITY TO ACCESS INFORMATION?

In this study, multiple regression analysis is conducted to reveal whether university students' big five personality traits predict their level of nomophobia. Firstly, a model has been developed to explain university students’ nomophobia. Due to the significant correlation between “Openness”, “Extraversion”, “Neuroticism”, and “Nomophobia”, only these variables have been included in the model. According to the findings, the developed model is found to be significant ($F_{(3,480)}$=10.258, p<.05, R^2=.054) and related information regarding the model is shown in Table 4.

Table 4. *Model for Prediction of University Students’ Nomophobia by Personality Traits*

Model	*B*	*t*	*p*	*F*	*p*	*Adjusted R Square*
(Constant)	1.384	4.444	.000	10.258	.000	.054
Openness	.167	2.990	.003			
Extraversion	.158	2.783	.006			
Neuroticism	.204	4.210	.000			

According to findings in Table 4, the model for nomophobia is established as stated below:

Nomophobia = 1.384 **+** ((.16 * Openness) + (.15 * Extraversion) + (.20* Neuroticism))

As a result, university students’ nomophobia has been predicted by openness, extraversion and neuroticism. This model explains 5% of their nomophobia.

Secondly, a model was developed to explain students' fear of losing connectedness through multiple regression analysis. Due to the significant correlation between “Agreeableness”, “Neuroticism”, and “Losing connectedness”, only these variables have been included in the model. According to the findings, the developed model is found to be significant ($F_{(2,481)}$=20.917, p<.05, R^2=.076) and related information regarding the model is shown in Table 5.

Table 5. *Model for Prediction of University Students' Fear of Losing Connectedness by Personality Traits*

Model	*B*	*t*	*p*	*F*	*p*	*Adjusted R Square*
(Constant)	3.439	10.835	.000			
Neuroticism	.167	2.981	.003	20.917	.000	.076
Agreeableness	-.361	-5.396	.000			

According to the findings in Table 5, the model for losing connectedness is established as stated below:

Fear of losing connectedness= 3.439 + ((.16 * Neuroticism) + (-.36 * Agreeableness))

As a result, university students' fear of losing connectedness has been predicted by neuroticism and agreeableness. This model explains 8% of their fear of losing connectedness.

Thirdly, a model was developed to explain students' fear of being unable to communicate through multiple regression analysis. Due to the significant correlation between "Openness", "Extraversion", "Agreeableness", "Neuroticism", and "Not being able to communicate", only these variables have been included in the model. According to the findings, the developed model is found to be significant ($F_{(4,479)}$=9.514, p<.05, R^2=.066) and related information regarding the model is shown in Table 6.

Table 6. *Model for Prediction of University Students' Fear of Not Being Able to Communicate by Personality Traits*

Model	*B*	*t*	*p*	*F*	*p*	*Adjusted R Square*
(Constant)	.714	1.602	.110			
Neuroticism	.289	4.617	.000			
Agreeableness	.078	1.003	.316	9.514	.000	.066
Openness	.219	2.826	.005			
Extraversion	.216	2.930	.004			

According to the findings in Table 6, the constant term was zero since the coefficient of the fixed variable is not significant. In addition, the coefficient of agreeableness is set to zero since its coefficient is insignificant. The model for not being able to communicate is established as stated below:

Fear of not being able to communicate = ((.29 * Neuroticism) + (.22 * Openness) + (.22 * Extraversion))

As a result, university students' fear of being unable to communicate has been predicted by neuroticism, openness and extraversion. This model explains 7% of their fear of being unable to communicate.

Fourthly, a model was developed to explain students' fear of giving up convenience through multiple regression analysis. Due to the significant correlation between "Openness", "Neuroticism", and "Giving up convenience", only these variables have been included in the model. According to the findings, the developed model is found to be significant ($F_{(2,481)}$=9.440, p<.05, R^2=.034) and related information regarding the model is shown in Table 7.

Table 7. *Model for Prediction of University Students' Fear of Giving Up Convenience by Personality Traits*

Model	*B*	*t*	*p*	*F*	*p*	*Adjusted R Square*
(Constant)	1.764	5.766	.000			
Neuroticism	.189	3.500	.001	9.440	.000	.034
Openness	.201	3.261	.001			

According to findings in Table 7, the model for giving up convenience is established as stated below:

Fear of giving up convenience = 1.764 + ((.19 * Neuroticism) + (.20 * Openness))

As a result, university students' fear of giving up convenience has been predicted by neuroticism and openness. This model explains 3% of their fear of giving up convenience.

Finally, a model was developed to explain students' fear of being unable to access information through multiple regression analysis. Due to the significant correlation between "Openness", "Extraversion", and "Not being able to access information", only these variables have been included in the model. According to the findings, the developed model is found to be significant ($F_{(2,481)}$=6.179, p<.05, R^2=.021) and related information regarding the model is shown in Table 8.

Table 8. *Model for Prediction of University Students' Fear of Not Being Able to access information by Personality Traits*

Model	*B*	*t*	*p*	*F*	*p*	*Adjusted R Square*
(Constant)	2.322	7.838	.000	6.179	.002	.021
Openness	.198	2.758	.006			
Extraversion	.101	1.377	.169			

According to the findings in Table 8, the coefficient of extraversion is set as zero since its coefficient is insignificant. The model for not being able to access information is established as stated below:

Fear of not being able to access information = 2.322+ (.20 * Openness)

As a result, university students' fear of not being able to access information has been predicted by openness. This model explains 2% of their fear of giving up convenience.

DISCUSSION

This study examined the correlation between nomophobia and "Big Five Personality Traits" and focused on determining the personality traits that predict this correlation. The study results showed that students used their phones frequently during the day and most prioritized their phones in their lives. This finding is similar to the results of studies on the subject in the literature (Al-Mamun et al., 2023; Kanwal, 2023). However, although university students were moderately nomophobic, it was observed that most of them were afraid of losing connection and not being able to access information. As a matter of fact, the internet is important in their daily lives in a wide range of areas from education to entertainment due to their ability to easily connect to the internet through their smartphones (Lee et al., 2018). Eventually, it can be said that smartphones have an important place in the lives of university students. Indeed, excessive use of smartphones leads to nomophobia and may cause an increase in fear and anxiety (Apak & Yaman, 2019). This situation may have increased the predisposition of university students to nomophobia.

It was determined that there were significant relationships between personality traits and nomophobia levels of university students in this study. It was found that there was a significant predictive positive correlation between the personality traits of neuroticism and nomophobia. This finding is consistent with the results of the related studies in the literature (Amiri & Taghinejad, 2022; García-Masip et al., 2023; Kanwal et al., 2023; Kaplan Serin & Derya Ister, 2022; Mehmood et al., 2021; Sun et al., 2024; Uguz & Bacaksiz, 2022). Students can easily connect to the Internet through smartphones and benefit from virtual communication opportunities. As a matter of fact, although high level of neuroticism is an indicator of low level of emotional stability, it can be said that neurotic individuals are more prone to virtual communication such as social media rather than traditional communication (Hawi & Samaha, 2019). Another explanation for this finding is the neurotic individuals' behaviour of avoiding reality and sadness by being addicted to smarthone addiction (Deleuze et al., 2019). In this direction, it can be said that spending too much time with the smartphone leads to

nomophobia as an inevitable end (Kaviani et al., 2020). Therefore, according to this study, it can be said that neurotic individuals tend to have nomophobia.

If the results are explained in more detail, it is found that there is a significant positive correlation between university students' openness personality trait and nomophobia levels. This finding is in parallel with the findings of the studies on the subject in the literature (Gunay Molu et al., 2023; Oz & Tortop, 2018). This result can be explained by the fact that individuals with openness have a high tendency to use new technological developments and communicate more. Moreover, this finding can also be clarified considering that individuals with openness personal trait are more prone to adapt and tolerate new things (Amiri & Taghinejad, 2022). However, results contrary to this finding were also found in the literature. For example; Uguz and Bacaksiz (2022) did not find a relationship between openness personality trait and nomophobia. Accordingly, it can be said that it would be appropriate to conduct more studies on the subject in the future.

As a result of the research, a positive relationship was found between nomophobia and extraversion personal trait. This finding is in line with the literature (Argumosa-Villar et al., 2017). This result can be explained by extraverted individuals facilitating smartphone communication and socialization, even in the virtual environment. Indeed, Zhu et al., 2013, found that there is a positive relationship between extraversion personal trait and social network size of individuals. Accordingly, the possibility of having too many friends in the virtual environment through social networks may trigger smartphone addiction in extroverted students or their fear of losing or failing to connect (Çelik İnce, 2021). Moreover, social people try to build more relationships with people and therefore resort more to mobile devices. As a result, in line with the findings of this study, extroverts tend to be nomophobic.

It was also observed that there was no significant correlation between conscientious traits and nomophobia. This finding is consistent with the findings of Kaplan Serin and Derya Ister (2022) and Yoğurtçu (2018). Contrary to this finding, there are also studies in the literature that have obtained results indicating that there is a negative or positive relationship between nomophobia and conscientiousness (Amiri & Taghinejad, 2022; García-Masip et al., 2023; Uguz & Bacaksiz, 2022). Lastly, it was found that the trait of agreeableness was not significantly correlated with nomophobia as a result of the study, consistent with the results of studies in the literature (Kanwal et al., 2023; Kaplan Serin & Derya Ister, 2022; Yoğurtçu, 2018).

Consequently, the study results showed low but significant relationships between the students' specific personality traits and their nomophobia levels. Accordingly, students who are extroverted, open and neurotic tend to have nomophobia. In contrast, agreeableness and conscientiousness were not significantly associated with nomophobia.

LIMITATIONS

The study is limited to data collected from students who are easily accessible to researchers. Therefore, the inability to create a sample representing the country is a study limitation. In addition, the need for advanced analyses such as SEM can be considered a limitation due to the inability to provide goodness of fit.

SUGGESTIONS

Based on the research results, some suggestions were made within the framework of the study. The study showed that university students with open, extraverted and neurotic traits tend to be nomophobic. Therefore, these students can be identified, and individuals with these characteristics can be trained to be aware of nomophobia. Today, smartphones are widely used and forbidding them to avoid their adverse effects is impossible. The educational use of smartphones has come to the forefront since the COVID-19 pandemic, which has made online education an obligation or a necessity. In addition, smart phones have become one of the most important technological tools that students

are using to access information. Therefore, it is essential to raise awareness among students, academics, and university administrators that students' personality traits are effective in using smartphones and developing negative situations such as nomophobia. In addition, students can avoid the adverse effects of nomophobia by organizing information sessions on it and raising students' awareness of the issue in classes. The cultural characteristics of the sample group may have caused this difference. Nevertheless, it can be argued that the correlation between the conscientious trait and nomophobia must be examined in future studies to obtain consistent results. Finally, a similar analysis can be repeated using a stratified sampling method to represent all regions of the country.

AUTHOR CONTRIBUTIONS

The authors contributed to all sections of the manuscript together. Dr. Zeynep TURAN contributed mainly to the introduction and discussion sections, while Dr. Rabia Meryem YILMAZ prepared the method and findings sections.

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The More Digital You Are, The More Your Child is Addicted to Digital Games: A Correlational Study

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Abstract

A major concern in the socio-psychological development of today's students is gaming addiction, which is one of the risks associated with the use of digital technologies. It is the responsibility of parents to help their children deal with this problem as best they can. Students' health and behaviour may be negatively affected by parents' lack of knowledge about digital parenting awareness. This study aims to investigate the relationship between gaming addiction in middle school students and their parents' awareness of digital parenting. 371 students aged 11-14 and their parents participated in the study. A one-way variance test, dependent t-tests and descriptive statistical analysis were used to analyse the data collected using the Digital Parenting Awareness Scale and the Digital Game Addiction Scale. This led to the observation that students' digital game addiction is generally low. Time spent in a digital environment and gender have a significant impact on students' digital game addiction. Parents are moderately aware of their role as negative role models, neglect of digital devices and effective use of these devices. There was a low level of negative correlation between students' digital game addiction and parents' awareness of digital parenting in terms of digital neglect and protection from risks, and a low level of positive correlation in terms of negative modelling and effective use. As a result, suggestions were made about how digital parenting awareness can protect students from the risks associated with digital technology use.

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INTRODUCTION

The use of digital technologies creates convenience and differences in our lives, but their unconscious use can also create some negative effects (Aydemir, 2020). Technology such as the internet, computers, and mobile phones have many negative physiological or psychological effects, especially on individuals (Bekir, 2019). It is common for users to experience addictions (such as gaming, internet use, phone use), harmful content, cyberbullying, cyberfraud, and cybe harassment in this area (Hasebrink, Livingstone, Haddon & Olafsson, 2009; Van den Heuvel, Van den Eijnden, Van Rooij and Van de Mheen, 2012; Ybarra, 2004). Digital games are becoming increasingly popular among students, and the risk of being exposed to them increases as the number of students playing them increases.

There are some positive educational aspects of digital games, as well as some negative situations (Freitas, 2018), among which a significant majority of students spend a great deal of time. Digital games are one of the most prominent addictive elements on the internet, and playing games is the most common reason for individuals to prefer the internet. Research has shown that playing digital games excessively may result in many physical and psychological problems such as obsessive and aggressive behaviors (Mentzoni at al., 2011), signs of mechanisation and violence in players (Fischer, Kastenmüller & Greitemeyer, 2010), personality idioms, low level of emotions, hyperactivity (Gentile, Swing, Lim, Khoo, 2012)), learning disorders, psychomotor disorders (Ballard, Gray, Reilly & Noggle, 2009 ; Jacobs, Hudak & McGiffert, 2009), health problems caused by lack of physical movement (King et al. 2013; Fullerton, Taylor, Dal Grande & Berry, 2014), anti-social behaviors, loss of free thinking and desire, tendency to conflict with teachers and friends, decreased academic achievement (Anand, 2007), increased level of anxiety, deterioration in interpersonal relationships, avoidance of reality and life, loss of vision, loss of sensation, and confusion between dream and reality (Wack, Tantleff-Dunn, 2009). Students playing digital games are subject to risks brought by these technologies, and parents have an important duty to protect them from these hazards. The way parents approach their children can be influenced by how they understand digital technologies. Thus, the study was conducted within a framework that included basic structures such as digital games, digital parenting, and their relationships (Lemmens, Valkenburg, & Peter, 2009).

Digital game addiction supports the view that gender is a remarkable factor (Nazlıgül et al., 2018; Király et al., 2018; Ko et al., 2005; Chou and Tsai, 2007). Some studies show that boys show more interest in digital games and showed that they tend to spend more time on this topic (Amendola et al., 2019; Uçur & Dönmez, 2021). In a mixed study conducted by Hazar, 2019, it was found that the scale total scores and subscale average scores of male participants were higher and the difference was statistically significant. The main reason for this difference was that digital games are more attractive to male individuals in terms of content and accessibility (game rooms, etc.). He stated that he might come. However, these findings may reflect individual differences rather than generalizations. The complexity of research on digital game addiction highlights the importance of context, culture, and individual factors. More research and studies that include diverse contexts are needed to better understand the gender-related relationship on digital game addiction. On the other hand, it has been stated that adolescents who spend too much time on social media become lonely and experience communication problems (Kırık, 2014). It is considered to be related to internet addiction and digital game addiction resulting from uncontrolled use of social media. As a matter of fact, in their study, Kudubes & Efe (2023) claimed that spending more than 3 hours in daily virtual games, being influenced by influencers followed on social media, and adolescents being influenced by social media in daily life are related to the average digital game addiction and social media addiction scores.

DIGITAL GAMES AND DIGITAL PARENTING

Individuals' educational, psychological, emotional and social needs are met by their parents, with whom they first and most often interact. Individuals develop their personalities, self-esteem, identities, adaptabilities, attitudes towards people, and emotional skills through their relationships.

The attitudes and behaviors of family members towards each other, parents' approaches to their children, the way children relate to other people in the future, have an important place in the interpretation of emotional and cognitive processes (Kırık, 2014). Children's interactions with digital games can also be shaped by parents' approaches. According to Rosen et al., (2014), parents have a responsibility to minimize the risk of children becoming addicted to digital games. Accordingly, some researchers suggest that especially parental attitudes may contribute to gaming addiction (Te'eni, 2017; Abedini, Zamani, Kheradmand & Rajabjzadeh 2012).

Some of these tasks include being aware of what children are doing, warning them, and informing them. Similarly, Aksoy and Koçtürk (2019) studied parents who were able to control their children's unconscious play and those who were not. This study determined that children of conscious parents are more likely to experience internet addiction than children of unconscious parents. Studies have shown that when parents fail to meet the affective needs of their children, children become addicted to technology (Huang, Li, Chen & Straubbhaar, 2018; Büyükşahin Çevik & Çelikkaleli, 2010). In a study on gaming addiction, Kırık (2014) notes that most parents are busy with their own work and don't follow their children while they're online. Children who play digital games without family control have higher gaming addiction levels than children who play them under family control (Göldağ, 2018). Parents sometimes unwittingly direct their children to play digital games in addition to neglecting their control over their children when they play digital games. In today's society, it is quite common for children to get used to digital games without realizing it, especially since they love devices like tablets and phones so much at such a young age, because they can make some successful transactions or not disturb their parents. According to Livingstone, Mascheroni, Dreier, Chaudron and Lagae (2015), parents' education levels have a significant impact on their children's digital game play. As a result, they claim that parents with low digital literacy are more likely to use restrictive strategies, and they suggest offering this education through guidance. It is believed that parents with this education can accompany their children more often and reduce the risks.

In today's society, parents often neglect the controls regarding their children's play of digital games due to their intense workload. Despite these controls, parents may be limited in their knowledge of how to give their children necessary warnings. It has been observed that children rarely take their parents' suggestions into account for problematic uses (Sümer, Gündoğdu Aktürk & Helvacı, 2010). The positive use of digital games by children can be enhanced by knowing that some games can be useful in certain situations. In order to raise digital parenting awareness, it is necessary to address all the roles that parents play. Therefore, this study has been guided by the idea that parents' digital parenting awareness and their risk of playing digital games may be related. Parents and educators can therefore determine their children's level of digital awareness and their children's level of gaming addiction in order to determine precautions to take. Additionally, it can contribute to the understanding of the structural features of indicators related to digital awareness and digital game addiction levels when it is combined with the analysis of relationships between parental digital awareness and children's digital game addiction levels. It is possible to develop suggestions based on this relationship by revealing the structural relationship between the two variables, if any. Educators, parents, and researchers can use the findings of the research to raise healthy generations, especially in the digital age.

This study was conducted to investigate the relationship between children's gaming addiction and the level of digital parenting awareness among parents of middle school children. Accordingly, the following research questions guided the study:

RESEARCH QUESTIONS

1) What is the level of digital game/gaming addiction among middle school students?

a. Do middle school students' digital game addiction levels differ in terms of different variables (gender, having a computer at home, use of mobile phone, time spent in digital environment)?

2) What is the digital parenting awareness level of parents of middle school students?

b. Do the digital parenting awareness levels of the parents of middle school students differ in terms of different variables (gender, having a computer at home, use of mobile phone, time spent in the digital environment)?

3) What is the relationship between the digital parenting awareness level of the parents of middle school students and the game addiction level of the students?

METHOD

RESEARCH DESIGN

Correlational design, one of the quantitative research methods, was used within the current study. Correlational design tries to determine whether the variables change together, and if they do, to determine how this happens. In this study, this research model was used as the relationship between digital parenting awareness levels and students' digital game addiction will be examined.

STUDY GROUP

In this research, was chosen appropriate sampling method. This method involves selecting individuals who are readily accessible and available within the researcher's reach. The research was conducted with 175 male and 196 female students in a secondary school and their parents (50 males, 321 females: 371 in total). 137 of the students did not have a computer and 164 do not have a telephone. The demographic information of the students is shown in Table 1.

Table 1. *Demographic Characteristics of Students*

		f	*%*
Gender	Male	175	47,2
	Female	196	52,8
Having a computer	Yes	234	63,1
	No	137	36,9
Use of moile phone	Yes	207	55,8
	No	164	44,2
Average Daily Time Spent in Digital Environment	1-2 hours	223	60.1
	3-4 hours	113	30.5
	5-7 hours	30	8.1
	7+ hours	5	1.3

Demographic characteristics of the parents is presented in Table 2.

Table 2. *Demographic Characteristics of Parents*

		f	*%*
Gender	Male	50	13.5
	Female	321	86.5
Age	20-40	183	50.1
	40-50	165	45.2
	50-65	17	4.7
Having a computer	Yes	231	62.3
	No	140	37,7
Average Daily Time Spent in Digital Environment	1-2 hours	295	79.5
	3-4 hours	67	18.1
	5-7 hours	7	1.9
	7+ hours	2	0.5

There are 183 parents aged between 20 and 40, 165 parents aged between 40 and 50, and 17 parents aged between 50-65. While the number of parents who do not have their own computer is 140, only 1 parent does not have a phone.

DATA COLLECTION

Digital Parenting Awareness Scale and Digital Game Addiction Scale were used for data collection. During the data collection process, these scales were sent via internet and voluntary participation of parents and students was ensured.

DIGITAL PARENTING AWARENESS SCALE

The Digital Parenting Awareness Scale (DPAS) was used to determine parents' digital awareness. This scale was developed by Manap and Durmuş (2020) and validity and reliability studies were conducted. DPAS includes 16 items and four sub-dimensions as “Protection from Risks” (PR, 4 items); “Effective Use” (EU, 4 items), "Negative Modeling" (NM; 4 items) and "Digital Neglect" (DN, 4 items). It is a five-point Likert-type scale and scored as 1 (Never), 2 (Rarely), 3 (Sometimes), 4 (Often), and 5 (Always). The sub-dimensions of DPAS are evaluated independently of each other, and the scores that can be obtained from the sub-dimensions vary between 4 and 20. The high scores obtained from the Risk Protection and Effective Use sub-dimensions indicate high level of digital parenting awareness while high scores on Negative Modeling and Digital Neglect sub-dimensions indicate that low level of digital parenting awareness (Manap, & Durmuş, 2020). The Cronbach alpha value of the data from this study is α=,701

DIGITAL GAME ADDICTION SCALE

Digital Game Addiction Scale (DGAS) was used to determine students' digital game addiction levels. It is a 5-point Likert-type scale including 7 items and one dimension. This scale was developed by Lemmens et al. (2009) and adapted into Turkish by Irmak and Erdoğan (2016). The validity and reliability values of the scale were determined as .92 for Cronbach's alpha, .904 for CFI, .053 for RMSEA (90% CI=.049 and .056). The Cronbach alpha value of the data from this study is α=,772

DATA ANALYSIS

Before analysing the data, evaluations were made about whether the data obtained from both scales were normally distributed. The data obtained from DGAS showed skewness as .966 and kurtosis as .756. Digital parenting awareness scale had skewness values of -.260, -.370, -.226, and -.460, and kurtosis values of 1.184, -.033, .879, and -.216 for sub-dimensions of NM, DN, EU, and PR, respectively. According to Tabachnick and Fidell (2013), these values are sign of normality if they are between -1.50 and +1.50. In this context, the analysis techniques of the normally distributed data obtained from both scales are shown in Table 3 for each of the research questions.

While descriptive analysis, independent samples t-test, one-way ANOVA and one-way MANOVA were used for the descriptive analysis of the data, Pearson correlation analysis was used to determine the relationship between the variables.

Table 3. *Data Analysis Techniques across Research Questions*

Research Question	*Data Collection*	*Data analysis*
1. What are the digital game addiction levels of middle school students?	Digital game addiction scale	Descriptive analysis
a. Do middle school students' digital game addiction levels differ in terms of different variables (gender, having a computer at home, use of mobile phone, time spent in digital environment)?		t- test and One-way Anova
2. What is the digital parenting awareness level of parents of middle school students?	Digital parenting awareness scale	Descriptive analysis
a. Do the digital parenting awareness levels of the parents of middle school students differ in terms of different variables (gender, having a computer at home, use of mobile phone, time spent in the digital environment)?		t- test and One-way Manova
3. What is the relationship between the digital parenting awareness level of the parents of middle school students and the game addiction level of the students?		Pearson Correlation

FINDINGS

The findings of the research are presented under three headings as parents' digital parenting awareness levels, students' digital game addiction levels, the relationship between digital parenting awareness and digital game addiction within the scope of research questions.

WHAT ARE THE DIGITAL GAME ADDICTION LEVELS OF MIDDLE SCHOOL STUDENTS?

The digital game addiction levels of middle school students are presented in Table 4 across with the scale items.

Table 4. *Students' Perceptions of Digital Game Addiction*

	N	*x̄*	*SD*
Have you thought about playing a video game all day long?	371	1,77	1,035
Have you gradually increased the time you spend playing the game?	371	2,28	1,015
Have you ever played games to get away from daily life?	371	2,07	1,145
Have people close to you (such as family members, friends) failed to reduce your play time?	371	2,21	1,282
Did you feel bad when you couldn't play games?	371	1,87	1,111
Have you quarreled with people close to you (such as family members, friends) about the time you spend in the game?	371	1,97	1,156
Have you neglected other important activities (such as school, work, sports) to play games?	371	1,44	,885
Students' Perceptions of Digital Game Addiction	371	1,94	,712

1.00-1.79=Very low, "1.80-2,59=Low", "2.60-3.3.39=Moderate", 3.40-4.19=High", 4.20-5.00=Very High

Table 4 shows that students' digital game addiction levels are low with an average of 1.94 points. When the items of the scale are examined separately, the average (2.28) of the item "Did you gradually increase the time you spent for the game?" is higher than the others and that (1.44) of the item "Have you neglected other important activities (such as school, work, sports) to play games? is quite low. The game addiction levels of the students are evaluated below in the context of different variables.

GENDER

An independent t-test was conducted to examine the differentiation of students' digital game addiction levels according to gender, and the findings obtained from the test are presented in Table 5.

Table 5. *Digital Game Addiction Levels of Students by Gender*

		N	*x̄*	*Sd*	*df*	*t*	*p*
Digital Game Addiction	Male	175	2,0882	0.75	369	3.733	.000
	Female	196	1.8163	0.65		3.702	

Table 5 shows that the level of digital game addiction of males (2.08) is higher than that of females (1.81). It is also found that students' digital game addiction levels differ significantly by gender (p<.05).

TIME SPENT IN DIGITAL ENVIRONMENT

The differentiation of levels of digital game addiction according to the amount of time students spent in the digital environment was analysed using the one-way ANOVA test, and the results of the analysis are presented in Table 6.

Table 6. *Digital Game Addiction Levels by Time Spent by Students in Digital Environment*

	N	*x̄*	*Ss*	*p*
1-2 hours	223	1.7085	0.572	
3-4 hours	113	2.1530	0.630	.000
5-6 hours	30	2.6714	0.883	
7+ hours	5	1.9446	1.000	

When Table 6 is examined, it is seen that the game addiction averages (2.67) of the students who spend time in the digital environment between 5-6 hours are higher than the rest. While it is expected that the addiction levels of students who spend 7 hours or more in the digital environment is higher, it has been observed that there is a decrease in the average after 5-6 hours. Students' digital game addiction levels (p<.05) differed significantly according to the time they spent in the digital environment. By checking the homogeneous distributions of groups since the variances were not equal, the nonparemetric test, Tamhane post hoc, was used. The results of the Tamhane Post Hoc test performed to determine the source of the significant difference are shown in Table 7.

Table 7. *Comparing the Time Spent in Digital Environment*

Time Spent in Digital Environment (I)	*Time Spent in Digital Environment (J)*	*Mean difference*	*Sd*	*p*
1-2 hours	3-4 hours	-,444*	,070	.000
	5-6 hours	-,962*	,165	.000
	7+ hours	-1,691	,452	.112
3-4 hours	1-2 hours	,444*	,070	.000
	5-6 hours	-,518*	,171	.027
	7+ hours	-1,247	,454	.264
5-6 hours	1-2 hours	,962*	,165	.000
	3-4 hours	,518*	,171	.027
	7+ hours	-,728	,478	.712
7+ hours	1-2 hours	1,691	,452	.112
	3-4 hours	1,247	,454	.264
	5-6 hours	,728	,478	.712

It is seen that the difference in students' digital game addiction levels according to the duration of digital media use is in favor of students who spend 1-2, 3-4 and 5-6 hours a day in digital media. It is understood that the usage time of students who use 7 hours or more has no effect on the differentiation of digital game scores between groups.

WHAT IS THE DIGITAL PARENTING AWARENESS LEVEL OF PARENTS OF MIDDLE SCHOOL STUDENTS?

The digital parenting awareness levels of the parents were described and the average scores they had are presented in Table 8 across with the items.

Table 8. *Digital Parenting Awareness Levels*

	N	*x̄*	*SS*
It happens that I don't listen to what my child is saying while I'm fiddling with my phone	371	1,68	,864
I also have the behaviors that I criticize in my child when using the phone/tablet	371	2,35	,967
My child witnesses that I spend too much time with my phone	371	4,45	,844
I deal with my phone instead of contacting my child	371	3,75	1,146
Negative Modeling (Total)	*371*	*3,05*	*,4546*
If my child insists too much, I can't stand it and let him use a phone/tablet.	371	1,57	,751
When my child is cranky, I calm his/her down with a phone/tablet	371	1,44	,746
I allow my child to use the phone/tablet intensively outside and inside the home (guest, shopping, friend environment, etc.).	371	4,15	,995
While I am busy with my work, I allow my child to spend time with the phone/tablet.	371	3,80	1,525
Digital Neglect (Total)	*371*	*2,74*	*,5433*
I tell my child about the benefits and harms of the internet and the situations that need attention.	371	1,73	,870
I examine the effects (positive or negative) of digital tools (Smart Phone, Tablet, TV, etc.) on my child	371	1,90	,953
I show the articles, videos or photos that I think are useful to my children from my own device	371	3,93	1,059
I analyze the benefits and risks of technological innovations for my children	371	4,23	1,072
Effective Use (Total)	*371*	*2,94*	*,5381*
I can protect my child from the risks of the internet	371	1,16	,481
If my child encounters content that may harm him/her while surfing the internet, I will take legal action	371	1,91	,901
I will be notified if my child encounters disturbing videos (sexual, violent) while watching videos on the internet	371	4,03	1,026
I use security packages or antivirus programs that will protect my child from the risks of the internet	371	3,53	1,620
Protection from Risks (Total)	*371*	*2,65*	*,5416*

Not: .00-1.79=Very low, 1.80-2,59=Low, 2.60-3.3.39=Moderate, 3.40-4.19= High, 4.20-5.00= Very High

Table 8 shows that the average scores (3.05) of the parents in the "Negative Modeling" sub-dimension are higher than the other dimensions. The item “I deal with my phone instead of communicating with my child” in this sub-dimension had a higher average than the other items. On the other hand, it is quite remarkable that the sub-dimension of "Protection from Risks" has a lower average score (2.77) than the other sub-dimensions and that the item "I can protect my child from the risks of the internet" in this sub-dimension has the lowest average (1.16).

Findings regarding the differentiation of parents' digital awareness levels according to different variables are presented in terms of gender and time spent in the digital environment.

GENDER

The results of the MANOVA test, which was conducted to examine the differentiation of parents' digital awareness levels according to gender, showed no statistically significant difference according

to the gender in any sub-dimension. Statistics showing parental awareness levels by gender variable are presented in Table 9.

Table 9. *Digital Parenting Awareness Levels by Gender*

		N	*X*	*Sd*	*p*
Negative Modeling	Male	50	3,10	,4198	.426
	Female	321	3,04	,4599	
Digital Neglect	Male	50	2,73	,6296	.923
	Female	321	2,74	,5297	
Effective Use	Male	50	2,88	,6332	.405
	Female	321	2,95	,5223	
Protection from Risks	Male	50	2,77	,51715	.113
	Female	321	2,63	,54400	

When the digital parenting awareness levels of the parents by gender was analyzed according to the sub-dimensions, it was determined that the averages of males and females were very close to each other, but males had a higher average than females in the sub-dimensions of Negative Modeling (3.10) and Protection from Risks (2.77). On the other hand, females had a higher average than males in the sub-dimensions of Digital Neglect (2.74) and Effective Use (2.95). When the significant levels (p1= .426, p2=.923, p3=.405, p4=.113), in each sub-dimension are examined, it can be seen that the sub-dimensions of parents' digital parenting awareness do not differ significantly according to gender.

TIME SPENT IN DIGITAL ENVIRONMENT

Digital parenting awareness levels according to the time spent in the digital environment is shown in Table 10.

Table 10. *Digital Parenting Awareness Levels by Time Spent in Digital Environment*

		N	*X*	*Sd*	*p*
Negative Modeling	1-2 hours	295	3,0314	,46207	.195
	3-4 hours	67	3,1604	,42796	
	5-6 hours	7	3,1429	,31810	
	7+ hours	2	3,1250	,17678	
Digital Neglect	1-2 hours	295	2,6822	2,6822	.000
	3-4 hours	67	2,9888	2,9888	
	5-6 hours	7	2,6429	2,6429	
	7+ hours	2	3,6250	3,6250	
Effective Use	1-2 hours	295	2,8915	2,8915	.001
	3-4 hours	67	3,1157	3,1157	
	5-6 hours	7	3,3214	3,3214	
	7+ hours	2	3,6250	3,6250	
Protection from Risks	1-2 hours	295	2,6271	2,6271	.034
	3-4 hours	67	2,7687	2,7687	
	5-6 hours	7	2,6071	2,6071	
	7+ hours	2	3,5000	3,5000	

When the sub-dimensions of digital parenting awareness levels were examined according to the duration of time spent in the digital environment, it was seen that Negative Modeling scores did not differ significantly (p>.05) according to the time spent in the digital environment. The average scores of Digital Neglect (p<.05), Effective Use (p<.05) and Protection from Risks (p<.05), differed significantly according to the time spent in the digital environment.

THE RELATIONSHIP BETWEEN THE DIGITAL PARENTING AWARENESS LEVEL OF THE PARENTS OF MIDDLE SCHOOL STUDENTS AND THE GAME ADDICTİON LEVEL OF THE STUDENTS

The relationship between students' digital game addiction and parents' digital parenting awareness was determined using the Pearson correlation test. The relationships between the variables are presented in Table 11 within the sub-dimensions of digital parenting awareness.

Table 11. *The Relationship between Students' Digital Game Addictions and Digital Parenting Awareness*

		NM	*DN*	*EU*	*PR*
Students' Digital Game Addictions	r	,028	-,004	,170**	-014
	p	,595	,940	,001	,786
	N	371	371	371	371

Negative Modeling (NM); Digital Neglect (DN); Effective Use (EU); Protection from Risks (PR)

Table 11 shows that there is a low-level positive correlation between parents' levels of negative modelling and effective use and students' levels of digital game addiction. On the other hand, there is a low-level negative correlation between the levels of digital neglect and protection from risks and students' digital game addiction.

DIGITAL GAME ADDICTIONS BY DIGITAL PARENTING AWARENESS DIMENSIONS

The data obtained through the sub-dimensions of NM, DN, EU, and PR in the Digital Parenting Awareness Scale are considered important to deal with Digital Parenting Awareness in these dimensions in detail. Accordingly, the relationship between all the items in each of the sub-dimensions and digital game addiction has been examined.

The relationship between students' digital game addiction and the items in Negative Modeling is shown in Table 12.

Table 12. *The Relationship Digital game addiction among students and Negative Modeling of Parents*

		M1	*M5*	*M9*	*M13*
Digital game addiction among students	r	0,52	,312**	,027	-,279**
	p	,314	,000	,601	,000
	N	371	371	371	371

Table 12 shows that there is a low positive relationship between students' digital game addiction and M1 and M9. While a moderate positive relationship was found between students' mean scores of digital game addiction and mean scores of responses to item M5, this relationship was found to be moderately negative with M13. Looking at the results, it can be seen that there is a positive and moderate relationship between the mean score of the responses to the item 'I also do the things I criticise my child for doing when using the phone/tablet' (M5) and the mean scores of the students' digital game addiction. On the other hand, this relationship was found to be negative and low for the item 'I use my phone instead of communicating with my child' (M13). This suggests that parents who spend more time on the phone instead of communicating with their children do not have a negative effect on their children and do not increase their digital game addiction.

The relationship between the digital game addiction of students and the Digital Neglect sub-dimension is presented in Table 13.

Table 13. *Relationship between Digital Game Addictions of Students and Digital Neglect of Parents*

		M2	*M6*	*M10*	*M14*
Students' Digital Game Addictions	r	,154**	,240**	-,057	-,162**
	p	,003	,000	,277	,002
	N	371	371	371	371

It was observed that there was a low level of positive correlation between the students' digital game addiction levels and the average scores of M2 and M6, and a low level of negative correlation for M10 and M14. This indicates that there is a positive relationship between the students' digital game

addiction and the average scores of the items "If my child insists too much, I can't stand it and let him use the phone/tablet" and "When my child is cranky, I calm him down with the phone/tablet". On the other hand, there is a negative correlation between the students' digital game addiction and the average scores of the items "I allow my child to use the phone/tablet extensively outside and inside the home (guests, shopping, friend environment, etc.)" and "I allow my child to spend time with the phone/tablet while I am busy with my work". Hence, it can be said that allowing their children to use a phone or tablet while the parents are busy with a work in non-continuous situations does not increase the digital game addiction of the students.

The relationship between the digital game addiction levels of the students and Effective Use sub-dimension is shown in Table 14.

Table 14. *The Relationship Between Students' Digital Game Addictions and Parents' Effective Use*

		M3	*M7*	*M11*	*M15*
Students' Digital Game Addictions	r	,240**	,303**	,022	-,145**
	p	,000	,000	,676	,005
	N	371	371	371	371

There is a low level positive correlation between the students' digital game addiction levels, and M3 and M11. Similarly, it was determined that there was a moderate level positive relationship and a low negative relationship with the mean scores obtained from M7 and M15, respectively. There is a positive relationship between students' digital game addiction levels and the average scores of the item "I examine the effects of digital tools (Smart Phone, Tablet, TV, etc.) on my child (positive or negative)" (M7). This indicates that students' digital game addiction increases as parents examine the effects of digital tools for their children. There is a negative relationship between the average scores of the item "I analyze the benefits and risks of technological innovations for my children" (M15) and the digital game addiction levels of the students.

The relationship between students' digital game addiction and Protection from Risks sub-dimension is presented in Table 15.

Table 15. *The Relationship Between Digital Game Addictions of Students and Protection from Risks*

		M4	*M8*	*M12*	*M16*
Students' Digital Game Addictions	r	,140**	,201**	-,121*	-,096
	p	,007	,000	,020	,065
	N	371	371	371	371

Table 15 indicates that there is a low level positive correlation between the students' digital game addictions, and M4 and M8 and a low level negative correlation between the students' digital game addictions, and M12 and M16. There is a positive relationship between the average scores of the items "I can protect my child from the risks of the internet" and "If my child encounters content that may harm him while surfing the internet, I will take legal action" and the average scores of the students' digital game addiction. This indicates that parents try to protect their children from the risks of the internet and take legal action in case of a negative situation on the internet, which increases students' addiction to digital games. On the other hand, the students' digital game addiction and the items "If my child encounters disturbing videos (sexual, violent) while watching videos on the internet, I will be informed" and "I use security packages or antivirus programs to protect my child from the risks of the internet" was negatively correlated. Hence, it can be said that the ability of parents to protect their children from risks in situations that may pose a negative example in the internet environment does not increase students' digital gaming addictions.

Overall, students' digital gaming addiction is low, and parents' awareness of negative modelling, digital neglect, effective use and protection from risks is moderate. Students' digital game addiction differs significantly according to gender and time spent online. There is a low-level negative relationship between students' digital game addiction and parents' awareness of digital parenting in

the sub-dimensions of digital neglect and protection from risks, while there is a low-level positive relationship in the sub-dimensions of negative modelling and effective use.

DISCUSSION, CONCLUSION AND IMPLICATIONS

This study examined the relationship between middle school students' game addiction and their parents' awareness of digital parenting. When evaluated in general, it is remarkable that the students are addicted to games at a low level. It has been seen that parents' digital parenting awareness levels are moderate in terms of negative modeling, effective use, digital neglect and protection from risks. It was concluded that while the digital awareness levels of the parents were higher in the Negative Modeling sub-dimension than the other dimensions, it was lower in the Protection from Risks sub-dimension than the other dimensions. The low scores in the sub-dimension of protection from risks indicate that the parents' digital awareness in this dimension is high according to the nature of the scale. Therefore, the fact that the scores in this dimension are lower than the other dimensions can be interpreted as higher parental awareness compared to other dimensions. Spending time in the digital environment did not only make a significant difference in the negative modeling sub-dimension, but for other sub-dimensions, it was also determined that the scores of the parents differed according to their time spent in the digital environment. Hence, it can be interpreted that although the time spent by the parents in digital environments is more or less, the parents consider these times as not a negative modeling, and that they do not make a negative modeling assessment based on the time spent. A study by Lauricella, Wartella, and Rideout (2015) discussed the relationship between the digital use of children aged 0-8 and their parents' digital use. The current study differs partially from that study, as their results showed that there is a high level of correlation between the duration of parents' use of digital devices and their children's use of digital devices. Looking at it from another perspective, Hazar, 2019, in his study examining children's addiction levels of playing digital games and evaluating their parents' views on playing digital games, found that the addiction of participants with parents who play digital games and poor family relationships was higher than other participants.

As a result of analyzing parents' digital parenting awareness in relation to the sub-dimensions of "Being a Negative Model" and "Avoiding Risks", it has been found that males have a higher average than females, while females have a higher average in the sub-dimensions of "Digital Neglect" and "Effective Use." It is clear from the studies that children also mimic and take role models their parents' use smart devices. It can be said that parents' attitudes toward digital tools and their own use also affect children's digital play processes (Ataman Yengin, 2019; Chaudron, Geneiatakis, Kounelis & Di Gioia, 2019; Siibak & Nevski, 2019; Lauricella at al., 2015). As a matter of fact, the study, which aims to understand parents' attitudes, mediation and monitoring behaviors towards the digital games their children play, suggested that parents' digital parenting approaches have effects on the risks that students may experience in digital games. (Fidan, Güneş & Karakus, 2021)

Overall, the digital game addiction level of the students was low, and the males had a higher game addiction level than the females. Students' digital game addiction increased as they spent more time in digital environments, and the average of gaming addiction for students who spent 5-6 hours in digital environments was higher than the other time averages. At this point, Spagnuolo Lobb, Sciacca, Jacono Isidoro and Hichy (2022) found that children with fewer restrictions on their internet usage spend more time online than those with more restrictions, which supports the finding of this study.

Students' digital game addiction and parents' awareness of digital parenting have a low-level negative relationship in the dimensions of digital neglect and protection from risks. In its broadest sense, digital neglect occurs when parents are unable to ignore or follow their child's excessive use of digital media while performing their daily tasks, as well as to resist the insistent attitude of their child (Manap & Durmuş, 2020). In accordance with this definition, parents' high levels of digital neglect may

contribute to their children's high levels of gaming addiction. According to Rode (2009), parents' negligent behaviors increase children's problematic internet use and negatively influence children's digital behaviors. Interestingly, in this study, parents' awareness of digital neglect has a negative relationship with students' digital gaming addiction levels.

An example of a negative modeling would be not taking care of the child while talking on the phone, excessively using digital media, and having difficulties communicating with the child. Hence this study concluded that there is a low level positive relationship between the negative modeling sub-dimension and the game addiction levels of students. Parents warn their children to use these environments appropriately, but their own misuse of these environments can lead to the warnings losing their meaning and causing negative effects. The study by Manap and Durmuş (2020) also found that negative parental role models are associated with their children's internet addiction. Children's internet addiction and unsafe internet use can be influenced by parents using digital media negatively (Rode, 2009). Although parents may try to control or prevent their children when necessary, this situation may cause them to fail sometimes. A possible explanation for this situation can be found in a study by Sümer et al., (2010), which suggests that children take what parents do more than what they say. Considering that digital awareness is an important part of parents' roles, an individual's behavior is negatively affected by parents' misguided use of their roles and being a negative role model (Çivitci, Çivitci, & Fiyakalı, 2009). As a matter of fact, Beyazıt& Bütün Ayhan (2019) in his study, he suggested that as the neglectful behavior of parents increases, the digital game addiction levels of adolescents also increase.

In the digital neglect sub-dimension of parents' digital awareness, it is striking that the average scores obtained from the item "I allow my child to spend time with my phone/tablet while I am busy with my work" are high. However, the level of awareness of parents concerning this item did not appear to be related to the children's addiction to digital games. Children who are persistent and grumpy are more likely to become addicted to digital games if their parents neglect them and let them use phones or tablets. The results of a similar study show that children who play digital games without family control have higher levels of game addiction than those who play under family control (Göldağ, 2018). Parents are believed to be able to reduce their children's gaming addiction by analyzing both the positive and negative aspects of technological tools. As a result of parents' awareness of the importance of focusing on the positive aspects of devices instead of prohibiting them, they can reduce their children's addiction to games in a positive way. In addition, high digital parent awareness is associated with parents paying close attention to their children, spending time with them, and especially the mother having a positive communication with her children (Yiğit, 2017).

Students' addiction to digital games is at a low level, while parents' awareness levels are moderate in terms of negative modeling, digital neglect, effective use and protection from risks. There is a low-level negative relationship between students' digital game addiction and parents' digital parenting awareness in the dimensions of digital neglect and protection from risks, and a low-level positive relationship in the dimensions of negative modeling and effective use. Chaudron et al. (2019) states that parents' ignorance about their children's use of digital tools causes them to devote less time to their daily activities and may cause children to continue their playing habits. Although not directly focusing on gaming addiction, Huang et al. (2018) evaluated in a study that children with disinterested parents had high internet addiction scores, as they did not have information about how much time they spent on the internet and did not control this time. This result is not in line with the findings of current study. As a matter of fact, in the study conducted by Şenol, Şenol and Yaşar (2024), the level of digital game addiction tendency is related to parents' digital game manipulation strategies. He stated that active parental guidance strategy prevents children's tendency towards digital game addiction, while digital-focused guidance and free parental strategies increase the tendency towards addiction.

Parents who are not sufficiently aware of their digital parenting role can negatively influence children's game addiction, although it is not high. Parents can prevent their children from developing characteristics of gaming addiction by not setting negative examples, using digital media consciously and following their children's lead. In this regard, training for parents should focus on digital parenting roles, especially in specific areas such as gaming addiction. Ultimately, parents who fulfil their family roles in a healthy way can both use digital tools effectively and protect their children from risks. We hope that this study will provide insight into parents' awareness of their children's use of game-based technologies in terms of their digital parental awareness.

While convenience sampling served the immediate needs of this study, it is essential to acknowledge its limitations. The sample may not be fully representative of the entire population, and caution should be exercised when generalizing the findings. Future research endeavors may explore more extensive sampling methods for a more comprehensive understanding. Additionally, in future studies, the research question can be addressed more comprehensively by conducting interviews with parents and using the observation method.

AUTHOR CONTRIBUTION

Individual contributions of authors should be specified in this section to give appropriate credit to each author.
i.e.

- First author have made substantial contributions to conception and design, or acquisition of data, or and interpretation of data, final approval of the version to be published

-Second author have acquisition of data, or analysis and interpretation of data

-The third author have analysis of data given, design, final approval of the version to be published

-The fourth author have been involved in drafting the manuscript or revising it critically for important intellectual content

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The Effect of Group Guidance Program on Family Stress and Burnout Levels for Parents of Children with Special Needs

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Abstract

The purpose of this study was to investigate the effect of the group guidance program on family stress and burnout scores of parents who have children with special needs. Pre-test, post-test quasi-experimental control grouped design was used in the study. There were four parents (mother) in the experimental group and four parents (mother) in the control group. The Questionnaire on Resource and Stress-F and the Maslach Burnout Inventory were used as data collection tools. The group guidance program, which was developed by Ayşe Çin in 2001 and consists of eight sessions was applied to the experiment group. Group guidance was conducted online through the Zoom Meetings program, considering the ethical principles of online counseling due to the COVID-19 process. Group guidance was applied to the experimental group between 31.05.2021 and 25.07.2021. Control group has not been subjected to any application. Significance of differences in pre-test post-test scores of subjects were analyzed with Mann Whitney U test. The research findings showed that the group guidance program had a significant effect on the family stress levels and burnout levels of the parents in the experimental group. Based on the research findings, comments were made and suggestions for practice and research were developed.

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INTRODUCTION

At the dictionary of Turkish Language Association definition of family is as follows; “The smallest union in the society formed by the relations between husband, wife, children, siblings, based on marriage and blood ties” (Türk Dil Kurumu, 2021). Family adapts to changes in the outer world (environmental) while maintaining the functioning of its own system (Nazlı, 2014). As in other systems it is in constant interation with family values in order to protect its natural balance and maintain it. In some cases, the balance of the family system may be disrupted by a situation that may originate from outside or a situation that may arise from within the system itself (Bitter & Corey, 2001). For example, in the family system, if the child is faced with a serious health problem or any disability after birth serious crisis situations may occur in the family (Fortier & Wanlass, 1984; Floyd & Zmich, 1991). During the developmental processes of the child difficulties and expectations, leaves parents in stress-induced crisis situations and affects their life quality negatively (Habib, Asmat & Naseem, 2016).

Many parents experience stress as their children goes through developmental stages in the family (Ardıç, 2010). With the birth of the child, the expectation of the family about the child's health is not realized, and the determination of the child's special needs begins to disrupt the healthy family structure, and family psychology is negatively affected (Dereli & Okur, 2008). When there are children with special needs in the family, the care burden of the parents’ increases (Kazak, 1987; Kazak & Marvin 1984), and as a result of this, the stress level of the parents may increase (Bilal & Dağ, 2005; Sarı, 2007; Uğuz, Toros, İnanç, & Çolakkadıoğlu, 2004). Atasoy (2022) determined that families with mentally disabled children have high stress levels.

The definition of stress by Baltaş & Baltaş (2013) is as follows: "It is a situation that occurs when the physical and mental limits of the organism are threatened and forced". When the expectation of the family about the child and the real situation are compared, the size of the difference between these two situations increases the severity of the stress that the family will experience. The hardening and inflexibility of the attitudes of families with children with special needs brings about the hardening of their reactions to the problems that the family will experience, and accordingly, the level of stress experienced by the parents in the family increases (Ardıç, 2010). The stress factor experienced by the parents in the family transforms and changes the existing relationships. In this case, the emotional problems of the parents in families with children who has special needs increase, the communication within the family weakens, and the conflicts of the family with the immediate environment increase. Therefore, it is important to keep the stress that the family who have a child with special needs under control during the adaptation process to the disability (Ardıç, 2010), and accordingly, burnout that may occur due to long-term stress can also be prevented.

Due to the excessive sense of responsibility in the care process of the child with special needs, situations such as depression and stress that may occur in the parents, especially in the mothers, increase the possibility of showing the symptoms of burnout in the future (Temel, 2015). Maslach, Schaufeli, and Leiter (2001) expressed the concept of burnout as follows: Experiencing feelings such as chronic fatigue, bodily exhaustion, hopelessness and helplessness, and the negative development of self-concept in the individual, and mental, emotional, cognitive and physical exhaustion that manifests itself with negative behaviors and attitudes towards other people during the time spent in daily and business life. It has been determined that the concept of burnout, which was first defined on working individuals, may be related not only to work life but also to the parenting process (Norberg, 2007; Shearn & Todd, 1997; Weiss, 2002) depending on the nature of long-term exposure to stress. One of the important reasons for the emergence of burnout is that the expectations of the individual are unrealistic and away from reality, and there is no harmony between expectations and reality (Tümkaya, 1996). As the difference between the family's future expectations and the current

situation of the family, which is directly related to stress, increases, the difficulties experienced in the family increase and the family has difficulty in coping with the real situation (Altuğ-Özsoy, Özkahraman & Çallı, 2006). Parents' responsibilities increase when they have a child with special needs -unexpectedly- and as a result, it brings about emotional, physical and mental exhaustion in parents (Aydoğan & Kızıldağ, 2017). Variables such as parents' lack of knowledge about special education, economic difficulties they experience, tension in marital relationships, changing roles of parents, decrease in participation in social activities, and society's attitude towards mentally disabled individuals increase the stress experienced by families (Bilal & Dağ, 2005; Küçüker, 2001). When the relevant literature is examined, the level of burnout will increase with the increase in stress levels in parents who have children with special needs (Akman, 2006; Duygun & Sezgin, 2003; Elçi, 2004; Ertürk, 2018; Güler & Çapri, 2020; Karacasu, 2019; Nergiz & Uluç, 2018; Tunç & Özkardaş, 2020), on the other hand, it was revealed that stress is a predictor of burnout (Akman, 2006; Elçi, 2004; Güler & Çapri, 2020; Nergiz & Uluç, 2018). There is a great need for family guidance practices for families who have children with special needs (Çin, 2001; Çin & Kılıç, 2014).

To prevent the transmission of COVID-19, social distance must be maintained, staying at home and not going out as much as possible have become recommended policies in the world (Saxena & Saxena, 2020). This situation has become a challenging situation for individuals in need of special education and their parents (Dhiman, Sahu, Reed, Ganesh, Goyal & Jain, 2020). Children in need of special education often need individual education in rehabilitation centers and treatment in hospitals and clinics (Mishra & Siddharth, 2018). However, virus prevention measures prevent these children from receiving rehabilitation services and their parents from receiving psychological support. Therefore, it is important for parents to receive online psychological support in this case. Group guidance is a type of service that is carried out at the cognitive level or by offering package programs to many people in order to provide orientation – familiarization with the situation – and informing about professional, educational and social situations (Voltan Acar, 2014). One dimension of the services provided to families who have children with special needs can be considered as psychological counseling and guidance. Services performed in this regard; in addition to family education, it can be listed as providing services that families may need, guiding families towards the services they need, and gaining problem-solving skills related to various problem situations that families may encounter (Özdemir, 2010). In studies for families of children with special needs, studies that will inform families about children and the field and reduce their anxiety about their psychological problems are considered necessary (Çin, 2001; Çin & Kılıç, 2014). Developing communication skills, problem solving behaviors and coping with stress, which are carried out depending on the scope of counseling services in special education, will positively affect the functionality of the family and facilitate taking measures against some future difficulties (Özdemir, 2010). In this context, the effect of group guidance program (Çin, 2001; Çin & Kılıç, 2014) on family stress and burnout scores of parents of children with special needs can be seen. It will contribute to the few group guidance studies which have examined their effectiveness on burnout in the relevant literature. It is expected that the results obtained from this research will help psychological counselors in developing and arranging the content of group guidance programs to be prepared within the scope of rehabilitation counseling in rehabilitation centers. The general purpose of this study is to examine the effect of the group guidance program applied to parents of children with special needs on their family stress and burnout scores. The independent variable of the research is the group guidance program training which was given to parents of children with special needs. The dependent variable is family stress and burnout scores of parents of children with special needs.

As related to general aim, research questions which are given at the below will be tested.

Hypothesis 1: Do to “family stress levels” pre-test post-test scores differ significantly in favor of the experimental group?

Hypothesis 2: Do to “burnout levels” pre-test post-test scores differ significantly in favor of the experimental group?

METHOD

In this study, the pre-test-post-test control group quasi-experimental model was used. In this model, there are two groups (experimental and control) created by unbiased assignment. Pre-experimental and post-experimental measurements are made under equal conditions for both groups (Büyüköztürk, 2019). Individual interviews were conducted by the researchers with the parents of children in need of special education attending the rehabilitation center, and a problem screening survey was applied to the parents. As a result of surveys and interviews, the priority needs of parents were determined. The design of the study was pre-test-post-test model (2×2) with experimental and control groups, and before starting the research, The Questionnaire on Resource and Stress-F and the Maslach Burnout Inventory were applied to the trial and control groups as a pre-test. Afterwards, the group guidance program consisting of eight sessions (Çin, 2001; Çin & Kılıç, 2014) was applied to the experimental group, while no training was given to the control group. At the end of the group guidance program, The Questionnaire on Resource and Stress-F and the Maslach Burnout Inventory were applied to the experimental and control groups as a post-test.

FORMING RESEARCH GROUPS

This study was carried out with the parents of students attending a special education and rehabilitation center in Nilüfer, Bursa, affiliated to the National Education Directorate. There are 184 parents of children with special needs in the study group. While selecting parents to participate in the group guidance program training, 19 parents who received high scores from The Questionnaire on Resource and Stress-F and the Maslach Burnout Inventory were selected among 184. In the preliminary interview with these parents, 4 parents who wanted to participate in the training program were included in the experimental group. Parents close to the mean scores of the experimental group were tried to be selected for the control group. Experimental group consists of 4 parents (mother) and control group consists of 4 parents (mother). The average age of the parents in the experimental group is 39.00 (Standard deviation: 7.483), the average age of the parents in the control group is 35.75 (Standard deviation: 5.188). For both groups, the diagnoses of parents' children were: pervasive developmental disorder, specific learning disability, intellectual disability, and hearing impairment. Children in need of special education are secondary school children and attend the rehabilitation center.

The parents in the experimental and control groups were analyzed to determine whether they were similar in terms of dependent variables (family stress and burnout pre-test scores) with the Mann Whitney U-Test, and the analysis results are shown in Table 1.

Table 1. *Mann Whitney U-Test Results About Family Stress and Burnout Pre-test Scores*

Group	*Experimental*		*Control*		*U*	*p*
	Mean Rank	*Sum of Ranks*	*Mean Rank*	*Sum of Ranks*		
QRS-F [a]	4.00	16.00	5.00	20.00	6.000	.56
MBI [b]	5.13	20.50	3.88	15.50	5.500	.47

Note. The parents in the experimental and control groups were analyzed to determine whether they were similar in terms of dependent variables (family stress and burnout pre-test scores) with the Mann Whitney U-Test, and the analysis results are shown in Table 1.

[a] The Questionnaire on Resource and Stress-F.

[b] The Maslach Burnout Inventory.

When Table 1 is examined; pre-test analysis shows that family stress (U=6.000, p=.56, p>.05) and burnout (U=5.500, p=.47, p>.05) scores did not have any significant difference between groups before starting the experimental application.

DATA COLLECTION TOOLS

The Questionnaire on Resource and Stress-F (Friedrich, Greenberg & Crnic, 1983): Questionnaire on Resource and Stres-F (QRS-F) which translated to Turkish as "Aile Stresini Değerlendirme Ölçeği", was developed to determine the stress of parents who have children with special needs. The adaptation studies of the scale into Turkish were carried out on 622 parents (mother and father) of children with hearing impairment, mentally disabled, multiple disabilities and normal development. As a result of the factor analysis performed for the scale adaptation, three factors were determined different from the original scale: dysfunction, pessimism, parent and family problems. The reliability of the scale was calculated with KR-20, Cronbach's alpha and split-half reliability techniques (Kaner, 2002). As a result of the adaptation to Turkish, the scale consists of 52 items. It was itemized according to a 2-point Likert type (1: True – 0: False). Since nineteen items in the scale consist of positive statements, they are scored as reverse items. For example, one of the reverse items: "_____ can adapt to the social life of our family." (item 10) and one of the non-reverse items: "I am worried about what will happen to _____ when I am unable to look after him/her." (item 4). The scale was collected in 3 sub-dimensions. These are dysfunction, pessimism, and parental and family problems. The total score of the scale is obtained by summing the scores from the sub-dimensions. As the score to be obtained from the scale increases, the family stress levels of the parents also increase. First, permission was obtained via e-mail from the researcher who adapted the scale into Turkish. Afterwards, the scale was applied to the participants in the rehabilitation center and individually.

Maslach Burnout Inventory (Maslach, Jackson & Leiter, 1997): Three dimensions of the Maslach Burnout Inventory (MBI) were examined in the study carried out with mothers who have children with intellectual disability and children with normal development. Adaptation studies of the scale into Turkish were carried out with 118 parents who have children with mental disabilities and 121 parents of normally developing children (Duygun & Sezgin, 2003). The scale consists of 22 items in total. It was itemized according to a 5-point Likert type (0: Never – 1: Very rarely – 2: Sometimes – 3: Often – 4: Always). Since eight items in the scale consist of positive statements, they are scored as reverse items. For example, one of the reverse items: "I find the most appropriate solutions to my child's problems." (item 7) and one of the items not reversed: "It is really tiring for me to deal with my child all day." (item 6). The scale was collected in two sub-dimensions. These are emotional exhaustion and personal accomplishment. The total score is obtained from the scale with the scores related to the sub-dimensions. As the score to be obtained from the scale increases, the burnout levels of the parents also increase. First, permission was obtained via e-mail from the researchers who adapted the scale to Turkish. Afterwards, the scale was applied to the participants in the rehabilitation center and individually.

PROCEDURE

The scales study of the research was carried out in the second half of the 2020-2021 academic year. The application of the scales was carried out by the researcher himself between the hours when the parents were in the institution. Before the scales were applied, necessary explanations were given to the parents by the researcher. How to fill in the scales was also explained to the parents by the researcher by showing examples on the scales. It was stated by the researcher that the answers given by the parents would not be shared with the administration in any way in accordance with the confidentiality principle and would be kept completely confidential, due to these measures to reach the aim of the study the parents had been asked to answer the questions sincerely as possible. Necessary explanations were given to the parents about the psycho-education to be carried out. At the end of informing, 4 parents in the experimental group stated that they wanted to participate in the psycho-education program. Group guidance was carried out online through the Zoom Meetings program, taking into account the ethical principles of online psychological counseling (Poyrazlı & Can, 2020) due to the COVID-19 process. Group guidance was

applied to the experimental group between 31.05.2021 and 25.07.2021. No application was made to the control group. The group guidance program was developed by Çin (2001) to reduce the anxiety levels of parents who have children with special needs, and it is a group guidance program consisting of 8 sessions in total. The aims of the program are: 1. To help parents who have children with special needs cope with both their educational and psychological problems, 2. To help parents develop their awareness by revealing the emotions, reactions and thoughts they experience when they learn that they have a child with special needs, 3. To raise awareness of mothers and fathers about the acceptance processes they had been through or may experience when they realize that they have a child with special needs, 4. To raise awareness about the '*special education*' field and the institutions and organizations that they can benefit from, 5. To help them gain awareness on sibling relations in families who have children with special needs and society's perception of children with special needs, 6. To increase their awareness of the importance of family support for children with special needs and their needs for family guidance, 7. To enable parents to comprehend and apply the '*compulsory field analysis technique in problem solving*', 8. (Çin & Kılıç, 2014).

DATA ANALYSIS

Before testing the hypotheses, it was examined whether The Questionnaire on Resource and Stress-F and The Maslach Burnout Inventory scores of the experimental and control groups met the assumptions of normality and homogeneity. It was determined that for both experimental and control groups The Questionnaire on Resource and Stress-F scores and The Maslach Burnout Inventory scores were not normally distributed. In addition to this, since the number of subjects included in the study was below the critical value of 30 in both the experimental group and the control group, nonparametric analyzes were performed (Alpar, 2000). In this context, groups' which are formed by series of difference scores which obtained from pre-test and post-test score differences of subjects, paired comparisons analyzed by Mann Whitney-U Test (Büyüköztürk, 2007). The data obtained from the experimental and control groups were analyzed with the SPSS Statistics 25 package program and the significance level was taken as $p<.05$.

RESULTS

In line with the purpose of the research, the hypotheses were tested and the findings are presented below. Before moving on to the findings regarding the hypotheses of the study, descriptive statistics regarding family stress and burnout pre-test post-test scores of parents in the experimental and control groups are given in Table 2.

Table 2. *Mean and Standard Deviation Values of Family Stress and Burnout Pre-test and Post-test Scores*

Group		*Experimental*		*Control*	
		M	*SD*	*M*	*SD*
QRS-F [a]	Pre-test	26.25	7.46	28.00	7.12
	Post-test	20.75	10.05	28.50	6.76
MBI [b]	Pre-test	42.25	11.53	37.25	7.14
	Post-test	33.00	11.23	34.75	7.50

Note. Descriptive statistics regarding family stress and burnout pre-test post-test scores of parents in the experimental and control groups are given in Table 2.

[a] The Questionnaire on Resource and Stress-F.

[b] The Maslach Burnout Inventory.

In order to test the research hypotheses, the pre-test scores were subtracted from the post-test scores and their differences were found. To test the significance of difference between control and experimental group Mann Whitney U-Test was applied (Büyüköztürk, 2007). Results of Mann Whitney U-Test have been shown at the Table 3.

Table 3. *Mann Whitney U-Test Results of Family Stress and Burnout Pre-test Post-test Scores of Experimental and Control Groups*

Group	Experimental		Control		*U*	*p*
	Mean Rank	*Sum of Ranks*	*Mean Rank*	*Sum of Ranks*		
QRS-F [a]	2.50	10.00	6.50	26.00	.000	.02*
MBI [b]	2.75	11.00	6.25	25.00	1.000	.04*

Note. In order to test the research hypotheses, the pre-test scores were subtracted from the post-test scores and their differences were found. To test the significance of difference between control and experimental group Mann Whitney U-Test was applied. Results of Mann Whitney U-Test have been shown at the Table 3.

[a] The Questionnaire on Resource and Stress-F.

[b] The Maslach Burnout Inventory.

*$p < .05$.

The first hypothesis of this research is "The pre-test post-test difference scores of family stress levels differ significantly in favor of the experimental group.". When Table 3 is examined, the results of the analysis show that there is a significant difference between the pre-test and post-test scores of the experimental and control groups (U=.000, p=.02, p<.05). Considering the mean rank of the difference scores, it was seen that it was in favor of the experimental group. According to these results, it can be said that the group guidance program applied to the parents in the experimental group was effective in decreasing the family stress levels.

The second hypothesis of this research is "Burnout levels differ significantly in favor of the experimental group in the pre-test post-test difference scores.". When Table 3 is analyzed, the analysis results show that there is a significant difference between the pre-test and post-test scores of the experimental and control groups (U=1.000, p=.04, p<.05). Considering the mean rank of the difference scores, it was seen that it was in favor of the experimental group. According to these results, it can be said that the group guidance program applied to the parents in the experimental group was effective in decreasing the burnout levels.

DISCUSSION, CONCLUSION AND IMPLICATIONS

This research was carried out to investigate the effect of group guidance program on family stress and burnout scores of parents who have children with special needs. The findings of the study showed that the group guidance program had a significant effect on family stress and burnout scores of parents who have children with special needs in the experimental group. The implemented group guidance program is aimed at parents of children with special needs and the main purpose of the program is to reduce parents' perceived stress (Çin, 2001; Çin & Kılıç, 2014). It is thought that the group guidance program may also be effective on burnout, which may be the result of long-term stress experienced by parents who have children with special needs.

One of the main purpose of the group guidance program to accomplish is to help to cope with experienced stress and burnout parents who have children with special needs (Çin, 2001; Çin & Kılıç, 2014). When related literature is examined conducted studies nationally (Adam Karduz & Özbey, 2022; Ardıç & Cavkaytar, 2019; Arıdağ & Erbiçer, 2018; Beşer & İnci, 2014; Çelebi, 2003; Çin & Kılıç, 2014; Dilmaç, Çıkılı, Koçak & Çalıkçı, 2009; Kaya & Yöndem, 2020; Özhan, 2001; Özokçu & Canpolat, 2013; Tümlü & Akdoğan, 2019; Tümlü, Akdoğan & Türküm, 2017) and internationally (Abedin & Molaie, 2010; Bagner & Eyberg, 2007; Greaves, 1997; Lee, 2017; Wong, Poon & Kwok, 2011) exists. Adam Karduz & Özbey (2022) carried out group guidance based on the Contextual Positive Psychology approach for mothers of children with moderate to severe mental and physical disabilities. Accordingly, it was concluded that group guidance reduced levels of stress, depression and experiential avoidance and increased subjective well-being levels. Ardıç & Cavkaytar (2019) concluded that the psychoeducation group family training program they carried out reduced the

stress levels of parents. Arıdağ & Erbiçer (2018) reached to this result that the group psychological counseling program they carried out reduced the anxiety levels of mothers who have children with special needs. Beşer & İnci (2014) concluded that the group counseling program they carried out was effective on the anxiety levels of families who have children with intellectual disability. Çelebi (2003) concluded that group counseling and group guidance were effective in the dimensions of addiction and self-management of parents of children with mental disabilities, but not in other dimensions of anxiety. Çin & Kılıç (2014) concluded that the group guidance program they carried out was effective on the trait anxiety and state anxiety levels of mothers and fathers who have children with special needs. Dilmaç et al. (2009) concluded that the group guidance program they carried out was effective on the trait and state anxiety levels of parents who have children with mental disabilities. Kaya & Yondem (2020) concluded that the group guidance program they carried out was effective in reducing the stress levels of mothers of children diagnosed with pervasive development disorder. Özhan (2001) concluded that the individual psychological counseling program based on the Gestalt approach was effective on the trait anxiety levels of mothers who have children with mental disabilities. Özokçu & Canpolat (2013) concluded that the group guidance program they carried out was effective on the stress levels of mothers of children with intellectual disabilities. Tümlü & Akdoğan (2019) concluded that group counseling was effective on the anxiety dimension of psychological symptoms of mothers who have children with special needs. Tümlü et al. (2017) concluded that the group counseling program based on reality therapy was effective on the state anxiety, but not on trait anxiety of parents who have children with special needs. Abedin & Molaie (2010) concluded that the group counseling program was effective on the parental stress levels of mothers of children with mild intellectual disability. Bagner & Eyberg (2007) concluded that the individual counseling program they carried out was effective on the parental stress levels of the parents of students with intellectual disability and oppositional defiant disorder. Greaves (1997) concluded that the psychoeducation program he carried out was effective on the parental stress levels of mothers who have children with Down syndrome. Lee (2017) concluded that the psychoeducation process he carried out was effective on parental stress and perceived stress levels of mothers of disabled individuals. Wong et al. (2011) concluded that the psychoeducation program they carried out was effective on the parental stress levels of the parents of children with mental disabilities. The results of group guidance, group counseling and individual counseling programs developed in the related literature on coping with stress have a significant effect on the stress levels of the experimental groups support the findings of this research. The fact that mothers realize that the stress they experience is due to their children's disability and that they are supported to share their feelings in the group helps them understand the importance of family support, solve stress-related problems, and learn to cope with stress. Accordingly, these results have been achieved.

In this study, the effect of the group guidance program on the burnout of parents with children with special needs was examined. In the related literature, results of studies conducted with mothers (Bilgin & Gözüm, 2009; Güler & Çapri, 2019) and fathers (Güler, 2021) of disabled individuals have supported this study. Accordingly, in the studies conducted by Güler & Çapri (2019) and Güler (2021), it was determined that group guidance programs were effective on parental spouse burnout. In the study conducted by Bilgin & Gözüm (2009), it was determined that the group guidance program was effective on the burnout levels of parents. With these studies, it can be said that parents may experience burnout as a result of the stress they experience on the development of their children, and the risk of experiencing burnout will decrease if parents are helped to cope with stress.

When the results of the research were evaluated in general, it was concluded that the group guidance program was significantly effective on the family stress and burnout levels of the parents of children with special needs. Accordingly, it is necessary for parents to be aware of their feelings, thoughts and reactions when they have a child with special needs, to be aware of the process of accepting the child with special needs, and to increase their knowledge about special education. In

addition to this, it is important for parents to be aware of the importance of family support and family guidance in the education of children with special needs. Doğan & Görgü (2022) conducted a study on parents of children with autism spectrum disorder during the COVID-19 period. Accordingly, the area where the COVID-19 process affects parents most negatively is behavioral problems. According to the results of a study, the areas with the most problems during the COVID-19 process are education and health (Aydemir, 2022). Families with children with special needs need psychological counseling and group guidance services (Özdemir, 2010). Considering the results of the research, the importance of the group guidance program (Çin, 2001; Çin & Kılıç, 2014) to be carried out by psychological counselors working in the field of rehabilitation counseling is revealed.

The psychoeducation program which applied in this study had been carried out with the mothers of children with different diagnoses. In future studies, it is recommended to implement a group guidance program by forming counseling groups among the parents according to the diagnoses of the children. The psychoeducation program which had been applied in this study carried out with mothers only. In future studies, the effect of psychoeducation program on stress and burnout can be examined in more heterogeneous groups by including fathers. The psychoeducational intervention process of this research was carried out during the COVID-19 pandemic period. For further studies to be carried out, after the COVID-19 pandemic process is over, the effectiveness of the psychoeducation intervention program can be re-evaluated by performing a needs analysis beforehand in order to identify new problems experienced by children with special needs in adapting to a new process for their parents.

The limitations of this study are that only mothers were included in the experimental and control groups and the number of parents in the groups was low. Due to Covid-19 global pandemic circumstances psychoeducation program had to be held online. In this context, the findings obtained from this research can be generalized to study groups that have similar characteristics and had been carried online. At the same time some of the group sessions exceeded planned session time due to prolonged group exercises Exceeded session period might have influenced emotional status of the participants.

AUTHOR CONTRIBUTION

Second author has made substantial contributions to conception and design, acquisition of data, analysis and interpretation of data. The first author have been involved in drafting the manuscript and revising it critically for important intellectual content.

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