CHAPTER 4

ACCESSIBILITY EXPERIENCES OF THE VISUALLY IMPAIRED STUDENTS ABOUT DISTANCE EDUCATION IN HIGHER EDUCATION DURING CORONAVIRUS DISEASE (COVID-19) PANDEMIC

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INTRODUCTION

When examining the data published by the World Health Organization in 2018, it has been stated that 188,5 million people have a mild distance vision impairment, 217 million people have moderate-to-severe vision impairment. 36 million people have total vision loss, namely blindness. The number of people in the risk group is 826 million in total (WHO, 2018a). Legal regulations and adaptations are necessary for the students to fully participate in the family, school, and social life and to benefit from education, health services in visual impairment. The education and training process is based on the Special Education Services Regulation for individuals with special needs in Turkey. Besides this regulation, there are legal regulations including various areas such as health, social service, social participation (Aile ve Sosyal Politikalar Bakanlığı, 2005, 2014; Başbakanlık Yönetmelik Bilgi Sistemi, 2014; Milli Eğitim Bakanlığı-MEB, 1997; Özel Eğitim Hizmetleri Yönetmeliği, 2018).

It has been stated that the visual disability includes not only screening and intervention, but also early childhood, life-long support process and full participation in the Global Eye Health Screening and Intervention Action Plan for 2014-2019 in the literature. It has been also stated that the policies based on community-based rehabilitation, accountability, and minimum restrictiveness principle in educational environments are compulsory (Medley & ark., 2018; WHO, 2013, 2018b, 2019 a,b). Accordingly, the right interventions made in the education of the individuals with low vision and blind individuals with total vision

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loss will enable them to live independently and based on human rights (Altunay Arslantekin, 2018; Mani, 1998; MEB, 2010, 2018; Tuncer, 2003, 2014).

Educational environments accessible for everyone should be planned starting from compulsory education age including the higher education period. For this purpose, universities use Higher Education Institutions Disability Solidarity and Coordination Regulation published in the Official Gazette numbered 27672 and dated 14.08.2010 as a base for the regulations of the students who continue associate, undergraduate and postgraduate education in higher education in Turkey (MEB, 2018; Yükseköğretim Kurulu-YÖK, 2020e). The transition to higher education is provided with the national exams taken by the individuals who are in the senior year of a secondary education institution and who are at the position of graduation or are graduates in our country. In this exam conducted by Student Selection and Placement Center (ÖSYM), some arrangements have been made for students with disabilities of different types at different levels such as visual, hearing impairment, autism, difficulty in learning, physical disability or multi-disability. Giving additional time, using big font sizes, indoor and outdoor regulations in the scope of physical accessibility, screen reader, and screen reading assistant with marker, tools, and aid use are some of these arrangements. Accessibility, participation, and supportive arrangements such as software use, tablet computer, digital exam booklet, marker, and electronic magnifier are conducted in electronic foreign language exam (Atak, 2018). The aim here is to provide an equal and accessible environment based on the individual differences of the students (ÖSYM, 2018).

Council of Higher Education (YÖK) Disabled Students Commission is responsible for implementing and following the services for the disabled students after the transition to higher education. This commission affiliated with Council of Higher Education conducts all following, evaluation, and information processes of the disabled students in all higher education institutions. Disabled Student Units are formed in the state and foundation universities affiliated with Council of Higher Education to provide the full participation of the students with special needs to academic, social, cultural, and sports activities and access both face-to-face and distance education processes regarding the professional life. In accordance with the Law on the Disabled numbered 5378, Higher Education Institutions Solidarity and Coordination Regulation is used as a based with the legal regulation published by the Council of Higher Education in the Official Gazette numbered 27672 and dated 14.08.2010 (Türkiye Cumhuriyeti Cumhurbaşkanlığı Bilgi Sistemi Düzenlemeler, 2010).

It is important to provide support in academic, cultural, and full participation in all aspects in accordance with special needs in Higher Education (Eğitimde Görme Engelliler Derneği-EGED, 2016; European Commission-EC, 2011; Kayhan, Sen & Akcamete, 2015). For this purpose, it is expected from the higher education institutions to adopt practices based on equality, participation, and social integration in the life-long learning process including face-to-face and distance education (EC, 2011). When examining the Council of Higher Education data in 2019 in Turkey, the number of the universities according to their type was 208 (4 foundation vocational schools of higher education, 75 foundations and 129 state), there were 2.829430 associate degree, 4.420699 undergraduate, 394.174 postgraduate and 96.199 doctoral students (YÖK, 2020a). When examining the participation rate of disabled students in higher education, there were 32.944 male and 14.807 female students. When examining in accordance with the disability type, 1371 male and 660 female, 2031 students in total have been studying in state and foundation universities (YÖK, 2020b).

Oz-Uslu (2019) drew attention to the importance of technological infrastructure, personnel competencies as well as the legal regulation. When considered from this point of view, fair and right-based education requires an immediate action plan. It requires national policies as well as European Union Reports (2011), United Nations Decisions (2016), WHO (2019a, b), OECD (2020). It is necessary to organize physical opportunities, academic, cultural and social regulations, information technologies, face-to-face or distance education technologies in a way all students can benefit from (Reimers & Schleicher). Accessibility was defined as allowing the access of all individuals including the people with disabilities to an environment, service, or product in the report by the United Nations (2016). Thus, the criteria of accessibility of contents, lectures, and people, as online or offline in the educational institutions can be thought. The educational institutions affiliated with the Council of Higher Education started distance education process because of the covid-19 pandemic, which started to be seen in December of 2019 and became a global pandemic that has been affecting the whole world (Ozer, 2020; YÖK, 2020c). In this process, the importance of immediate action plans and strategic plans regarding the national or global contingencies became apparent. In this study, the accessibility perceptions of the visually impaired students who continued higher education during covid-19 global pandemic regarding their distance education experiences were investigated. The data of the study were evaluated in the scope of the personal experiences of the visually impaired students with the distance education centers, information

processing centers, directorate of student affairs, and supervisors in the faculty and vocational school of higher education of the state and foundation universities. For this purpose, the study questions are as follows:

During the covid-19 pandemic;

What do the visually impaired students who continue higher education think about the accessibility according to their distance education experiences?

What do they think about the distance education method and lecturing?

What are the difficulties they experienced in the distance education process?

What are their experiences about the educational regulations conducted for them?

What are their opinions and suggestions to conduct distance education more effectively?

MATERIALS AND METHODS

Study Design

In this study which was conducted in descriptive design, the distance education experiences and accessibility perceptions of the visually impaired students who continued higher education during covid-19 pandemic which started in the last months of 2019 and have continued in the first half of 2020. The study was conducted in accordance with purposive sampling criteria. The study was based on the experiences of the visually impaired students in the distance education process. The suggestion about the educational regulations, use of information technologies, academic and administrative personnel support process, the way of lecturing, content, and access to the system, suitability of the preferred software during the covid-19 pandemic were investigated. In this regard, the study was conducted with the qualitative method (Creswell, 2005).

Sample/Participants

In the study conducted with 20 visually impaired students, the purposive sampling method was used. The participant group is restricted to the students who study in different state-foundation universities in Turkey. A great majority of the students are located in Aegean, Southeastern Anatolia, and Central Anatolia Regions in terms of the provinces they study in. Vision impaired adult participants provided volunteer and independent participation upon their consent. Purposive sampling was conducted in the study in which qualitative research method and interview technique were used. The criteria for participation are to continue higher education, to have low vision or total loss of vision, to be willing to participate in

the study, and to have received distance education during the pandemic. Students who had applied to the transition to higher education exam with low vision or total vision loss (blind) diagnosis report, met distance education criteria in 2019-2020 spring term in associate degree, undergraduate or postgraduate period in a state or foundation universities participated in the study. Age, gender, type of university, year of education, department information of the participants were shown in Table-1.

	Code Name	Age	Gender	Type of University	Department	Year	Level of Vision	Is s/he exempt from the course?	Distance education experience?
Table 1. Demographic Information of Visually Impaired Students									
1	VIS1	21	Female	Foundation	Special Education	2	Total	No	No
2	VIS2	20	Female	State	Special Education	1	Total	No	No
3	VIS3	21	Male	State	Guidance and Psychological Counseling	2	Total	No	No
4	VIS4	24	Male	Foundation	Law	4	Low vision	No	No
5	VIS5	24	Female	State	Social Sciences Teaching	4	Total	No	No
6	VIS6	21	Female	Foundation	Special Education	3	Total	No	No
7	VIS7	24	Female	Foundation	Guidance and Psychological Counseling	4	Low vision	No	Yes
8	VIS8	20	Female	Foundation	Special Education	1	Low vision	No	No
9	VIS9	23	Male	Foundation	Special Education	3	Total	No	No
10	VIS10	21	Male	State	Turkish Teaching	1	Low vision	No	No
11	VIS11	23	Female	State	Mathematics	1	Low vision	No	Yes
12	VIS12	28	Female	State	Psychology	4	Low vision	No	No
13	VIS13	24	Female	Foundation	Psychology	3	Low vision	No	No
14	VIS14	25	Female	Foundation	GPC	4	Total	No	Yes

Table 1. Demographic Information of Visually Impaired Students									
15	VIS15	21	Female	State	Pharmacology	3	Low vision	No	No
16	VIS16	19	Female	State	Public Relations	1	Low vision	No	No
17	VIS17	28	Female	State	Translation and Interpreting	4	Total	No	No
18	VIS18	25	Male	State	Local Administration	2	Low vision	No	No
19	VIS19	22	Male	State	History	2	Total	No	Yes
20	VIS20	23	Female	State	Sociology	4	Low vision	No	No

As stated in Table 1, the study group consists of 14 female, 6 male students who are between the ages of 19-28, 1 of whom continues associate degree, and others continue undergraduate education, 8 of whom study in foundation, 12 of whom study in state universities, 9 of whom are with total vision loss and 11 of whom are with low vision. The permission of the ethics committee for this research is Ege Unıversıty Rectorate Social and Humanities Scientific Research and Publication Ethics Committee (85553214-050.06.04).

Data Collection Tool and Implementation

The data of the study were collected with the questionnaire form prepared by the researchers. While preparing the form, open-ended questions were prepared about accessibility, distance education, academic, social, full participation principle, educational adaptations, academic and administrative staff who can use the software effectively, evaluation in distance education, and support services. Open-ended questions prepared by the researchers were sent to 3 experts, 2 of whom work in special education, 1 of whom works in information processing directorate, who have studied about technology-advanced education of the visually impaired individuals. Opinions of the experts were received. The experts assessed the questions in terms of similarity, fitness for purpose, and clarity; the questions were rearranged in accordance with the editing suggestions.

To reach the study group of the study which was conducted in the spring term of 2020, the steps below were followed. Both authors have a doctoral degree in the special education field. They conduct academic scientific studies and projects about Turkish sign language, education of hearing-impaired individuals, educational regulations for the visually impaired individuals for the full participation of the students who continue their education in higher education institutions to the

academic, social, cultural activities. First, Disabled Unit Coordinators of the state and foundation universities were interviewed (10 units were called in accordance with accessibility criteria). Then, the contact information of the students who accepted volunteer participation was received (e-mail, telephone). Both authors first called or e-mailed the students and informed the students with a content letter that explained the aim of the study. Besides, acceptance and information form was forwarded to the participants through e-mail. Day and hour of the interview were planned and the interviews were conducted via phone or online on the determined day. The interviews lasted for 30-40 minutes with each participant. Table 2. Examples of the questions in the interview form.

Table 2. Examples of The Questions in The Interview Form
Q-1) What do you think about the accessibility and distance education in higher education institutions?
Q-2) Did you have distance education experience at your school before COVID-19? (e.g. Mutual courses) Can you mention this process? Who do you think is responsible to disabled students in this process and what are they responsible for?
Q-3) What do you think are the arrangements that should be made in higher education for vision impaired students in case of an epidemic or unexpected situation? What do you suggest for pre-process preparations?
Q-4) Can you mention your COVID-19 distance education experience as a vision impaired student? How were your face-to-face education and distance education experiences? What kind of skills do you think the instructors and students should have in distance education in terms of quality?
Q-5) What can you say if you are asked to compare your face-to-face and distance education experiences?
Q-6) What do you think about the assessment and evaluation of the students who continue distance education practices?
Q-7) Are there any difficulties you experienced during distance education practices? What do you suggest to eliminate these difficulties? (Internet, technological support, related person, content etc.)

Data Analysis

Descriptive documents that were approached in a holistic and detailed way were investigated in-depth with the content analysis method. The themes were derived from similar codes (Yıldırım & Şimşek, 2008). Visually Impaired Student code and sequence number were used for each student (VIS1, VIS2...VIS20). Reliability between coders was calculated as 94% using the Reliability=[Agreement/(Agreement + Disagreement)] x 100 formula (Miles & Huberman, 1994). The main and sub-themes obtained as a result of the analysis regarding the accessibility

experiences of the visually impaired students who continue higher education were shown in Table 3. The first main theme is stated as *Action Plans in Education,* the second main theme is stated as *Personnel Competencies in Higher Education*, the third main theme is stated as *Accessibility, Concepts, and Rights* the fourth theme *Laws and Implementers* in Table 3.

Table 3. Main Theme and Sub-Themes
1 – Action Plans in Education
1.1. Multi-directional accessibility
1.2. Teamwork
1.3 Data literacy in science and technology
2 – Personnel Competencies in Higher Education
2.1. Academic administrative staff
2.2. Simultaneous cohesion – Change
2.3. Holistic view-Assessment and Evaluation
3 – Accessibility, Concepts and Rights
3.1. Information Barrier-free Units
3.2 Preparation and sustainability
3.3. Program-process-self evaluation
4 – Laws and Implementers
4.1. Needs-Right-based education
4.2. Distance education units inspection
4.3. Participant corporate assessment

Results

According to the data obtained in the study, when examining the opinions of the participants related to the main and sub-themes, the first main theme "Action Plans in Education" consists of *Multi-directional accessibility, Teamwork, and data literacy in science and technology* sub-themes. A great majority of the students (18 participants except for VIS2, VIS8) stated that the preparations for accessibility in the education process were not applicable to sudden and unexpected situations. The participants who stated that the accessibility problems during the lessons are related to the course materials and academic content, emphasized that they could not see a difference between face-to-face education and distance education in terms of course materials. For example, while VIS2 defined accessibility as *it's usually access in the web environment, everything is easily accessible for everyone but personnel competencies are important,* VIS8 drew attention that the action

plans of the educational institutions for the students with special needs should consider their current conditions.

The students stated that there is usually a closer communication with the executives of the university (chancellor, vice chancellor) and disabled student unit about the teamwork with disabled students units. However, they stated that the cooperation with the student affairs, information processing directory, administration of their faculty, advisor in the department is not at the desired level. For example, VIS7: *I don't think that distance education is accessible for all students. Because the environmental factors can affect or the visually impaired individual may not use a computer.* VIS10 emphasized that the disabled student units have a highly important role, the units in which personnel who studied in the special education field are highly active in the implementation and regulations. *Our unit is very concerned, when we have a problem, we can always find someone to solve it. Cooperation with the barrier-free unit should be provided for e-learning content.*

The second main theme is *Personnel Competencies in Higher Education* consists of *Academic-administrative staff, Simultaneous cohesion-change, Holistic view-assessment, and evaluation* sub-themes. In this theme, the opinions of the students about the academic and administrative staff during the distance education process draw attention. For example, students (VIS2, VIS3) stated that the academic members need education about acquaintance-use of synchronous (live) and asynchronous (via record) software which can be used in the distance education process. VIS13 stated that: *I always prefer face-to-face education, using the technology, having an ability to manage the crisis. The information processing unit of the school can provide the necessary support in this period, the lecturer of the course can help if necessary.*

The third main theme *Accessibility, Concepts, and Rights* consists of *Information, Preparation, and sustainability and Program-process-self-evaluation* sub-themes. For the course adaptation and full participation in the process, VIS3, VIS5, VIS6, VIS7, VIS8, VIS9, and VIS11 stated that the distance education is not very efficient, the course contents and the materials are not accessible (as they are not compatible with the pdf screen reader). The lecturer should be solution-oriented and reach the students via e-mail or telephone. For example, VIS10: *I find face-to-face education more accessible.* The students emphasized that it is necessary to consult the disabled student units as in face-to-face education (all participants) and the role of the disabled student units is highly important in the distance education process.

The fourth main theme *Laws and Implementers* consists of *Needs-Right-based*

education, distance education units inspection, and Participant corporate assessment sub-themes. Under this theme, the visually impaired students stated that they are disturbed by perception as if only the Disabled Student Units are responsible for all the regulations about the disabled students in the universities. Yet, all units and personnel of the university should have a work approach in accordance with accountability in legal regulations. For example, VIS6 stated that the advisors are also responsible by saying: *I think the lecturers should individually contact the visually impaired student until some deficiencies are fulfilled as the distance education program is a new process. I think the evaluations can be insufficient during the process. It is necessary to study with the visually impaired student beside the courses.* They explained that they can record the voices without technical problems, take the exams written in big font sizes, benefit from peer teaching during face-to-face education. For example, VIS7 stated: *Face-to-face education is advantageous, we can more easily communicate both with the lecturers and our friends.*

As a result, it would be better to prepare booklets which include information about the special education and independent life skills of the visually impaired individuals, computer, tablet, mobile phone, software instead of trying to find a fast solution in the transition to distance education in covid-19 pandemic period.

Conclusion

In this study, which was conducted with 20 visually impaired students as qualitative research in the covid-19 global pandemic period, four main themes were obtained. The students stated that they are highly satisfied with the Disabled Student Units in the Higher Education Institutions both in the face-to-face education and distance education process. According to the Higher Education Institutions Solidarity and Coordination Regulation, which was published in the Official Gazette dated 14.08.2010 and numbered 27672, then published in the Official Gazette dated 14.02.2014 and numbered 28913 with the last amendments, the disabled student units have been directly affiliated with the rectorate (Türkiye Cumhuriyeti Cumhurbaşkanlığı Bilgi Sistemi Düzenlemeler, 2010). Besides the legal inspections of these units' operation and competencies, encouragement, and reward systems were adopted (MEB, 2020; YÖK, 2020d).

Forming a barrier-free university surely depends on various factors. Curricula should be made suitable for the needs of individuals with special needs as well as the physical opportunities stated in the legal regulations (Oz-Uslu, 2019). The prominent findings are that academic accessibility is given more priority but the visually impaired students have some problems because of the attitudes and

behaviors, low number of personnel, and technical equipment. Piştav Akmeşe (2018) drew attention to the physical and academic regulations for the disabled students and disabled personnel and the responsibilities of the personnel in a study which examines the legal regulations and the difficulties faced in accordance with the opinions of the disabled students and personnel in higher education. Piştav Akmeşe (2018) stated that the satisfaction level of the disabled students generally depends on two variables, academic regulation, and accessibility, and the variables for the disabled staff are education and social activities and accessibility services. According to the distance education experiences of the students who participated in the study, both the academic and administrative personnel have a lack of information about right-based education and legal regulations. A similar finding was stated by Walker (2020). Walker, independently of the pandemic, drew attention that although there are legal regulations for vision impaired individuals, there are delays in Braille materials, they are full of errors or they are never used, education software and websites are limited. Vision impaired students drew attention to the importance of accessibility for school, family, social, and professional life. They also emphasized that they received more limited communication, support, and feedback in the covid-19 process, and stated that they had problems in evaluation processes most often. In the literature, Rosenblum et.al. (2020) emphasized the importance of including screen reader, magnifier, Braille, audio description and stated that the curricula should focus on the areas that the vision impaired students need education. Orientation, independent life, social interaction, recreation, assistive technology, career education are within this context.

Another finding of the study is about the contribution of the legal regulations to the active participation of the visually impaired individuals to work, employment, and social productivity after graduation. The students drew attention to the relationship between both face-to-face and distance education alternatives and family education including early childhood education. It is stated that both the teachers and administrative staff should have the knowledge to comply with the technology, provide effective teaching, and make education qualified. In this finding which coincides with the literature, it drew attention that the visually impaired students who overcome various difficulties and enroll in the programs they desire want to find a job and employment on an equal basis with their peers after higher education (Kayhan, Sen & Akcamete, 2015; Melekoğlu, 2017; Piştav Akmeşe, 2018). One of the studies on this subject is Current Situation Analysis on the Accessibility for the Disabled at Universities: 2015-2016 by Association of the Visually Impaired in Education (EGED-2016). In the result report of the

study by EGED (2016), the low number of personnel in the special education and disability field, accessibility of course materials, the importance of the right-based concept to eliminate the problems in the national exam regulations have been stated. Another study conducted by EGED (2017) is statements and suggestions for a barrier-free university. In the result report of the study by EGED (2017), the curriculum of the departments which have an important role in the accessibility of physical places such as architecture, Urban and Regional Planning, Landscape Architecture, Interior Architecture were investigated. It was determined that the courses about accessibility are included in limited numbers and accessibility is taught as an elective course. The students stated that they do not demand positive discrimination such as exemption from the course or having grades without completing the exam requirements. A similar finding can be seen in a study by Piştav Akmeşe (2018), it has been stated in the study that the disabled students feel disturbed by positive discrimination toward themselves in school and work life. Similarly, it was emphasized in a study by Kayhan, Sen and Akcamete (2015) that making regulations based on the individual needs of each individual at universities will contribute to the qualified graduation of disabled students. Accordingly, each country should use universal design principles as a base while shaping its own education policy and health policy. Because covid-19 precautions (for example mask-distance) have affected accessibility in daily life. Individuals with disabilities are the group that is affected by these precautions most intensely. For example, Gombas and Scakvari (2021), examined the effects of pandemic precautions on vision impaired Hungarian young adults and investigated to which extent their access to shopping, daily support needs, higher education life, and education, and their leisure time activities had changed. The answers of Hungarian young adult vision impaired participants showed that the lockdown negatively affected their lives and formed an intense effect on shopping and education. Turkish vision impaired students also expressed a similar opinion. They explained that the accessibility was affected negatively during the lockdown, they had problems in infrastructure, receiving information, sustaining independent life.

In conclusion, the importance of the readiness for face-to-face education and distance education for the unexpected situations in the higher education as in the covid-19 pandemic process has been understood. To provide accessibility standards for the equal participation with all students who do not have a disability is a corporate responsibility. In accordance with the findings of this study, the problems experienced in the distance education process can be determined and education for the academic and administrative personnel can be organized.

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