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The Future of Accessible Museums: Qualitative Analysis on Educational Practices

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Abstract: When the tourism policies of the countries were examined, it can be seen that that a very limited number of countries have knowledge and practices on accessible tourism. Museums, which are the most important building blocks of tourism, play an important role in both the creation of accessible tourism and the socialization of all individuals in society. Ensuring the accessibility of museums, which also makes important contributions to cultural sustainability, can be effective in shaping the museums of the future. In this context, the aim of this research was to evaluate the accessible museums of the future in terms of the views of teacher candidates trained in museums and lecturers taught and experienced in special education and to make recommendations. The sample group of the research consists of teacher candidates trained in museums (n=20) and lecturers taught and experienced in special education (n=22). The research data were carried out with the Phenomenology model which is one of the qualitative research methods. The data was collected through a semi-structured interview form. The data were analyzed by descriptive method. Research findings revealed that the interviewees think that accesible musems of the future have deficiency in time-space concept, the creation of virtual environments and digital infrastructures. In addition, they stated that there are deficiencies in accessing museums such as digital tools, architectural infrastructure, and virtual museums, and that these should be eliminated, and necessary stakeholders should be trained. Within the scope of the research, it is recommended that subject experts should provide training on accessibility to the Ministry of Tourism and Culture, officials and workers in museums, in archaeological sites and in historical places by taking the results of this study into consideration. Also, in order to obtain a permit for a new museum, ensuring the necessary mentioned conditions must become an important necessity. These will lead to a smooth accesibilty to museums for all stakeholers.

Keywords: *Accessible tourism; accessible museums of the future; accessibility; phenomenology model; teacher candidates trained in museums and lecturers taught and experienced in special education views'; barriers and recommendations.*

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1. Introducation

Tourism activities constitute an important share of the service sector (Evci & Kus Sahin, 2017). This sector is one of the rapidly developing and growing industries in the world (Ercan, 2022). Various policies have been produced by states in order to ensure the sustainability of the tourism sector, which plays such an important role in the development of societies. "Accessible tourism" especially for people with disabilities is an important activity implemented within the scope of these policies (Evci & Kus Sahin, 2017). Accessible tourism aims to benefit from tourism activities of equal standards for people with disabilities, as do other individuals in the community. It also aims to provide accessible facilities to these individuals both in accommodation facilities (Ercan, 2022) and in places such as museums and ruins that promote cultural heritage (Reyes García et al., 2021). In this context, it is an important issue that should be addressed in accordance with the needs of people with disabilities, especially museums that are considered to be effective in ensuring the cultural sustainability of societies (Reyes García et al., 2021). Museums are expressed in the most general definition as "a permanent public, non-profit organization that protects, researches, communicates, exhibits, serves both society and the development of society, for the purpose of education, work and enjoyment of the tangible and intangible heritage of humanity and its environment" (Statute of the International Council of Museums, 2017). Museums that play such an important role for society should have the characteristics to appeal to all individuals in society from seven to seventy to equal standards. At this point, it is significant that making museums accessible to all individuals is one of the most important steps to be taken in order to bring the cultural heritage of societies to a wider audience. In this direction, the accessibility of museums is important both for the cultural and social development of individuals in society and for the integration of individuals with special needs into society (Yesilyurt et al., 2014). Making museums accessible for individuals with disabilities to socialize easily in society is an issue that needs to be addressed (Demirezen, 2019). Especially digital applications (virtual museum, virtual reality, etc.) are insufficient in terms of accessibility in museums, and the architectural infrastructure in museums has not been designed with special walking areas and ramps (Dincer et al., 2019). There are deficiencies in audio guide systems to promote museum collections; there are no copies of works that visually impaired individuals can touch, and many technological difficulties experienced in hardware are obstacles

that are difficult to overcome (Sen et al., 2014). Each of these challenges limits making museums accessible.

In parallel with the information mentioned above, it is important to overcome the difficulties encountered in making museums accessible. In this context, it is believed that in this research, the creation of accessible museums of the future, the emergence of different views can be effective in overcoming these difficulties and creating awareness. From this point of view, in this research, it is aimed to create an accessible museum profile by taking the views of interviewees in the field of special education and teacher candidates trained in the field of museum teaching.

2. Literature Review

Following the examined literature, most researches on accessible museums focused on "the suitability of museums for disabled people", "disabled people's views about the museums", “museums and visitors with disabilities education projects”, “Ways to make places more accessible”, “accessibility of the museums”, accessible tourism concept at museums” (Dundar & Bezci, 2019; Ozer Erbay, 2017; Sen et al., 2014;Wiastuti et al., 2018). In the research conducted by Akıncı and Sonmez (2015), the general expectations of disabled people about tourism services were evaluated. The sample group of the study consisted of public and non-governmental organizations, disabled individuals and disabled families. The findings revealed that disabled people experienced the most problems related to economic, physical conditions and transportation problems. Also, according to the results obtained, holiday facilities did not have the necessary physical infrastructure for disabled individuals; travel opportunities were not sufficient, and there was a transportation problem. As can be seen, there is no finding regarding the accessibility of museums. In addition, the research conducted by Wiastuti et al. (2018) aimed to identify accessible tourism practices in museums in Jakarta and to determine the recommendations for ensuring accessibility. In the study, observation and interview techniques were applied. 12 museums in Jakarta were identified as the preliminary group of the research. The identified museums were evaluated according to five criteria: information, transportation, common requirements, universal design and accessibility. There was no museum where the five criteria were observed fully and comprehensively. On the other hand, it was also found that the two museums in the country met most of the criteria determined by other museums. In addition, recommendations on the arrangements of museums according to the expectations of disabled individuals were suggested. These recommendations included the provision of wheelchairs

and ramps, audio visual facilities. As can be understood, the research highlighted the importance of providing accesibility, and stated that museums in the country must meet the criteria. In addition, in the research prepared by Hutchinson and Alison (2020), the necessity of using audio description in museums in order to make museums accessible was mentioned. In this research, forty-two museums from 12 different countries were evaluated. It was stated that the use of the tools could be effective especially for visually impaired individuals to visualize the art work. In addition, the research revealed that museums in Europe found it more necessary to use these tools during museum visits compared to museums in America. Finally, the research conducted by Reyes Garcia et al. (2021) evaluated the accessibility of museums in Seville, Spain. Eight museums in the city of Seville were examined within the scope of the research. As a result of the evaluation, it was determined that only the architectural structures of the archaeological museums (corridor crossings, walking areas, ramps, restrooms) were designed to be more suitable for the needs of disabled individuals. It was also determined that none of the museums in the research fully met the concept of accessibility in the universal sense. It was also determined that museums in the city had limited access. As a result of the research, it was suggested that important policies had to be developed in order to increase the accessibility in tourism.

In this context, there was no research in which the views of any teacher candidates trained in museums and faculty members were evaluated. Consequently, examining the views on the creation of accessible museums of the future in terms of different stakeholders and presenting recommendations on the subject within the scope of this research will create an important awareness against the obstacles encountered in museums, and contribute to the literature.

3. The Aim of the Research

The general aim of the research is to evaluate the accessible museums of the future according to the views of teacher candidates trained in museums and lecturers taught and experienced in special education and to make recommendations. In this direction, answers to the following questions were sought in the study.

1. What are the views on the concept of accessible museum?
2. What are the views on the obstacles to creating accessible museums?

3. What are the views on accessible museums and technological tools that can be used in education?

4. What are the recommendations for accessible museums and education?

4. Methodology

4.1. The Model of Reseearch

The research was carried out using the phenomenology model which is the one of the qualitative methods. Phenomenology, which focuses on the experiences of individuals and focuses on what these experiences mean for individuals, is based on philosophy. It assumes that the essence of these experiences will be reached in the resulting product. Phenomenology studies offer useful information both theoretically and practically, and the information obtained in these studies is frequently used in schools and suggestions that will lead to different practices and changes are put forward. In this method, pre-interview preparation mostly requires the researcher to be mentally and emotionally prepared and to prepare a good interview form (Marshall & Rossman, 2014). As the aim of phenomenology is to determine the perspective of those who have an experience in the subject matter, and it describes the meaning of this experience both in terms of what was experienced and how it was experienced (Teherani et al., 2015), it was the best method to be used in this study. Within the scope of this research, it was aimed to determine the experiences and opinions of the teacher candidates, who took the museum education course regarding the concept of "accessible museum" in the previous academic term. In addition, it was aimed to determine the beliefs, experiences and opinions of the ones who have previous experience in "accessibility" and taught in special education departments. In order to increase accessibility to museums, it is important to take the views of both teacher candidates who have been trained in museums and lecturers who have taught and experienced in special education. Considering that the sample group was trained and specialized in this subject, effective results waere expected to achieve in the creation of accessible museums for the future. As a result, a semi-structured interview form was used to determine the views of teacher candidates trained in museums and lecturers taught and experienced in special education. In this interview open ended questions were asked instead of strictly structured questions.

The approval for this study was obtained from the Educational Sciences Ethics Committee affiliated to the Near East University Scientific Research Ethics Committee for the ethical permission of the research.

4.2. Participants

The views of two different sample groups were used in the study. The first sample group of the study consists of teacher candidates trained in museums (n=22) who study at a private university and take the museum education course. The first group study in the department of primary school teaching. The second group includes the lecturers taught and experienced in special education (n=20) who give lectures to university students in the special education department. In the selection of the study group, easily accessible case sampling method, one of the purposive sampling methods, was used. Lecturers taught and experienced in special education and teacher candidates trained in museums who are willing to participate in the research have been approved in writing and orally with the Informed Consent Form. Systematic Random Sampling Method was used in the study. In this method, the interviewees were randomly numbered and sorted, and systematic random sampling was made from the lists obtained. Thus, the randomly selected participants' views were evaluated and analysed. As a result the interviewees were taken into consideration as one mixed sample.

4.3. Data Instrument and Analysis

Research data were collected with a semi-structured interview form whose content validity was determined in line with expert views. The interview form consistsed of four questions to collect views on accessible museums of the future. The interview questions were indicated in Table 1.

Table 1. Semi-structured interview form Questions

No	Questions
1	How do you think the Accessible Museum should be?
2	What do you think are the current obstacles to creating accessible museums?
3	What are your suggestions for accessible museums and education?
4	What technologies do you think can be used in the Accessible museum and its education?

Source: Authors' own conception

In the research, the interviews were conducted face-to-face. Before the interview, it was clearly stated that participating in the research was voluntary, and their consent was ensured. In addition, the group was informed that their names would not be mentioned during the research process. Thus, assurances were offered about the confidentiality and security of the research. The interviews, which were recorded in accordance with the permissions obtained from the teacher candidates trained in museums and leturers, lasted approximately 10 minutes. During the semi-structured interviews, the researcher took care to act objectively. The descriptive analysis model, which is a technique frequently used by researchers to obtain summary information about different phenomena and events they want to research (Buyukozturk, 2022), was used to analyse research data. In this study, the views of the participants who participated in the interview, were evaluated by descriptive analysis method. As a result of the interviews, the data that were found to be similar and related to each other were brought together within the framework of themes. In addition, the obtained data were interpreted with a descriptive approach by adhering to the original form and directly quoting the statements of the participants. At this stage, the findings were identified and interpreted as descriptive analysis. The descriptive content analysis method means that studies carried out independently of each other in a specific subject or field are examined and organized in depth. Thus, general trends in that subject or field are determined. In order to reflect the views of the participants interviewed with descriptive analysis in a striking way, their direct statements were included and the findings were arranged and interpreted respectively.

5. Results

The findings obtained from the research were analyzed under four headings.

5.1. Views on the Concept of an Accessible Museum

The data obtained regarding the first sub-purpose of the study were presented in Table 2. The vast majority of the participants associated the concept of accessible museum with the availability of digital infrastructures. Again, the majority of the participants stated that virtual environments were necessary for accessible museums. In addition to these views, it was determined that the participants also had views on eliminating the difference in time and space in order to create an accessible museum, and the appropriate architectural structure of the interior spaces. The participants

also mentioned the importance of all individuals in the society having equal access to museums. Sample comments were given below.

Table 2. *Participant's Views of Accessible Museum*

No	Views	n
1	Having digital infrastructures	21
2	Accessible from virtual environments	10
3	Time and place are not different	5
4	The architectural structure of the interior is suitable	4
5	Providing equal opportunities	2

Source: Authors' own conception

"*Thanks to digital infrastructures, accessible museums are museums where people with disabilities can easily access and obtain complete and accurate information about the artefacts exhibited in the museum* (P18)."
"*Accessible museums should be accessible and informative via virtual environments at all times* (P40)."
"*Museums should be accessible from all media regardless of time difference. People can reach easier the museum platforms whenever they desire* (P2)."
"*In my opinion, an accessible museum should be designed to be more enlightening; people with disabilities should be able to navigate easily without assistance* (P11)."
"*All individuals in the community, including people with disabilities, should be able to visit the museum. To make this. Governments should put some regulations to provide the equlity* (P21)."

The findings obtained from the research revealed that the participants discussed the concept of accessible museum from different perspectives. Most of the participants' views associated the concept of accessible museum with having sufficient digital infrastructure. It was highlighted that technological tools and applications, which are becoming increasingly important in the 21st century, make significant contributions to the accessibility of museums.

5.2. The Views on Barriers to Creating Accessible Museums

The data obtained regarding the second sub-purpose of the study were presented in Table 3. Participants stated that the most important obstacle in creating accessible museums was the insufficient use of digital applications. At this point, the participants emphasized that virtual museums were not available in all museums, and that virtual reality applications were not widespread. They added that the applications were really crucial to make

museums more accessible. It was also among the views that the architectural designs of the museums were not suitable for the accessibilty of the people with disabilities, and there are deficiencies in the infrastructure and equipment. Also, they indicated that museums should have walking areas and ramp to provide the availability for the people with dissabilities (*See Figure 1*).

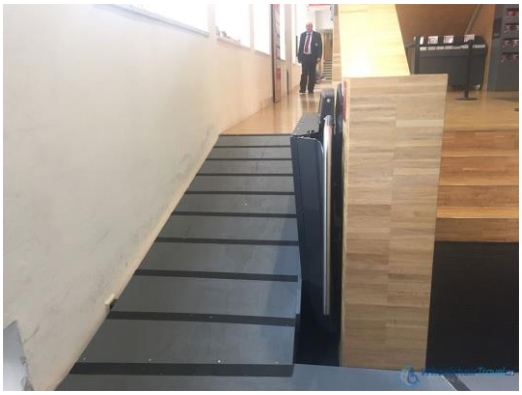


Figure 1. Walking Areas for Disabled People
(Source : https://wheelchairtravel.org/review-visiting-the-amsterdam-museum-in-a-wheelchair/)

Table 3. Participant's Views on Barriers to Creating Accessible Museum

No	Views	n
1	Inadequate use of digital applications	24
2	Lack of infrastructure and hardware in architectural design	11
3	Tool and device deficiencies in the promotion of the museum (audio systems)	4
4	Effects of the Covid 19 epidemic	3
5	Accessibility problems to museums	2

Source: Author's own conception

The participants also stated that the limited number of audio guide systems for disabled individuals during museum visits created problems in the promotion and access of the museum. They indicated that people with disabilities could obtain more information regarding art works by using audio guide systems *(See Figure 2),* and also they are able to feel more comfortable themselves during museum visits.



Figure 2. Audio Guide Systems
(*Source* : https://mw2016.museumsandtheweb.com/glami/audio-guide/index.html)

In addition, it was stated by the participants that the Covid-19 epidemic and the fact that the museums are located in remote areas which are far from public transportation are important obstacles to visiting the museums. They emphasized that epidemic prevented people from going to the museums physically. Some sample comments were given below.

"I think that the absence of virtual museums in all museums and the dissemination of virtual reality applications are an important obstacle in the creation of accessible museums. Without virtual applications people cannot reach museums' collections, if they are disabled (P25)."

"The architecture of many museums does not allow disabled people to easily visit the museum. For example, there are no ramps or large areas where they can get around freely in museums (P 39)."

"The lack of audio devices and guides for visually impaired individuals to promote the collections in museums is one of the main obstacles. However, if the museums have these applications, disabled people can learn more information about the art works (P4)."

"The epidemic we are in is gradually reducing museum visits and affecting access. Cause of this, people do not want to go to the museums physically. (P27)."

"The fact that not all museums are located in suitable locations and their accessibility makes it difficult to access the museum (P19)."

In parallel with the findings determined within the scope of the first sub-goal of the study, similar results were obtained within the scope of the

second sub-goal. In this context, the majority of the participants emphasized the importance of digital applications for making museums accessible. They stated that the lack of infrastructure in digital applications in museums created barriers for the accessibility of the museum. In addition, the fact that the physical spaces of the museums were not designed for individuals with special needs was among the issues that the participants especially focused on. The absence of ramps in museums and the fact that the walking areas were not designed in accordance with disabled individuals were among the important obstacles.

5.3. Views on Accessible Museums and Technological Tools That Can Be Used in Education

The data obtained regarding the third sub-purpose of the study were presented in Table 4. The majority of the participants stated that it was important to prefer simulation and virtual reality applications in accessible museums and education.

Table 4. Participant's Views on Accessible Museum and Technological Tools in Education

No	Views	n
1	Simulation and virtual reality applications	21
2	Touch-operated digital tools	9
3	Audio guide systems	7
4	Mobile device apps	3
5	Creating digital exhibits	2

Source: Author's own conception

Especially they indicated that blind people could not feel the art works without these kinds of applications. However, through using the simulations and virtaul reality blind people will able to touch the works. Therefore, they can feel the works and visualize the art works with their hands.

Again, the participants emphasized that touch-operated digital tools are very important for disabled individuals to feel and experience the works. Via this, people with dissabilities can learn the details of the works regarding their appearance. In addition, some of the participants stated that audio guide systems are very important in the promotion of museums, and mobile device applications will make museum visits more accessible for people with

disabilities. Therefore, people can follow the directions and also have knowledge about the art works' features. Finally, the participants emphasized that there should be digital exhibitions that can be created through virtual environments for easy accessibilty. They argue that digital exhibitions can be effective, especially for individuals who cannot reach the museum, to learn about the features of the works. Sample comments were given below.

"*Simulations and virtual reality applications will enable people with disabilities to visualize and experience parts of museums that they cannot reach easily. Through these applications, individuals with special needs can grasp and feel the characteristics of the works in the museum, just like other individuals in the society.* (P11)."

"*Disabled individuals should be able to touch the works with their senses of sound and touch, and this should be possible digitally. Devices used in tours with audio descriptions can enable these individuals to get around the museum by listening to them aloud* (P4)."

"*Audio guide systems can be created, where especially visually impaired individuals can learn about the features of the artefacts in museums. In this way, they can forget for a moment that they have no sense of sight. They can see themselves as equal to other individuals in society via audio guide systems* (P 19)."

"*With Smart mobile applications, it is possible for disabled people to obtain information about the artefacts in museums over the phone. In addition, with this application, not only individuals with special needs, but also other individuals in the society can spend their museum tours more effectively* (P 33)."

"*Via digital exhibits, disabled people can learn and access more information regarding artworks which are presented in the museum* (P 2*)"*

The results obtained within the scope of the third sub-objective of the research revealed that the majority of the participants thought that the most important application in making museums accessible was virtual reality and simulations. Virtual reality and simulation applications, which can be easily adapted to all areas, facilitate the learning skills of the individual. At this point, it is thought that virtual applications are important for all individuals in the society to benefit from museums under equal conditions and to get the same pleasure from museum visits as other visitors. These applications can be especially effective for visually impaired individuals to feel with their hands and visualize art works with the sounds they hear.

5.4. Recommendations for Accessible Museums and Its Education

The data obtained regarding the fourth sub-purpose of the study were presented in Table 5. The participants expressed various views on accessible museums and related education. It was recommended to use more promotional tools, infographics, and posters by using digital tools, and to design architectural designs in accordance with the physical characteristics of disabled individuals.

Table 5. Participant's Recommendations for Accessible Museums and Its Education

No	Views	n
1	Increasing the use of digital tools	10
2	Suitable architectural designs for disabled individuals	9
3	Increasing virtual museum and virtual reality applications	6
4	Increasing 3D tactile experiences for artifacts in the museum	6
5	Providing braille alphabet for the visually impaired	5
6	Providing training to museum staff	3
7	Rasing awareness of people with dissabilities about access to museums	3

Source: Author's own conception

The majority of the participants highlighted that the preparation of posters reflecting the features of the museum and the design of info graphics with visuals were very important in making museums accessible. It is believed that these practices can be effective in spreading museum visits to many segments of the society. In addition, the participants expressed their views on increasing the virtual museum and virtual reality applications, increasing the three-dimensional tactile works (*See Figure 3*) in the museum, and providing the braille alphabet (*See Figure 4*).



Figure 3. Three-dimensional tactile works in the museum
(Source from: https://www.museumnext.com/article/making-museums-accessible-to-visually-impaired-visitors/)



Figure 4. Braille alphabet in the museum
Source: Senga (2011)

In addition, the participants made recommendations regarding the museum and related education, training the museum staff and raising the awareness of the disabled about the accessibilty to museums. Sample comments were given below.

"*The use of more promotional tools, infographics and posters can enable people with disabilities to experience museums better* (P36)."

"*I think architectural elements are important in making museums accessible. Ramps and toilets can be created for disabled people to navigate more easily* (P3)."

"*Virtual museums should be gradually expanded. Thus, disabled individuals who cannot physically access the museums can access the museums. Via virtual reality especially blind people can touch and feel the art objects that can be very effective for them.* (P 7).

"*For people with disabilities who cannot see the works, reproductions that will represent similar works can be produced. Thus, individuals can understand what the work looks like by touching it with their hands* (P 16).

"*There should be content written in braille alphabet, especially for visually impaired individuals, where they can learn about the features of the artefacts in the museum* (P 28)."

"*Trainings that enable people with disabilities to act according to their needs and learn sign language for people with hearing impairment should be given to museum personnel* (P 2)."

"*Trainings should be organized explaining which museums have activities for people with disabilities and providing information on practices* (P 23)."

The findings obtained within the scope of the fourth sub-objective supported the views stated within the scope of the other sub-objectives. As the participants mentioned within the scope of other sub-objectives, they pointed out that virtual reality applications were effective in making museums accessible for individuals with special needs. However, the majority of the participants believed that digital tools (infographics, posters, banners, etc.) have a vital role in making museums accessible. These tools, which are frequently used in the education process, arouse interest and curiosity in the individual, and simplify complex and intense information. Through these tools that can be used in the promotion of museums, visitors will be able to see museums as more interesting places. In addition, the participants emphasized that not only digital tools, but also three-dimensional and embossed works that blind individuals can touch with their hands are important to gain positive impressions and comprehend the features of the art works. In parallel with this finding, it is thought that the braille alphabet, which is important in every field for the blind people, is effective in following the instructions in the museum and learning information about the history and features of the art works. Finally, as stated by the participants, it is of great importance that museum staff takes courses on this issue in order for individuals with special needs to access museums. Through this training, museum staff will be able to help individuals who come to visit the museum more easily.

6. Discussion and Conclusion

The findings obtained from the research revealed that the participants had various views and recommendations regarding the accessibility to museum and education of the future. At this point, as a common view on the four sub-objectives determined within the scope of the research, the participants especially emphasized the necessity of technology in the creation of accessible museums. In parallel with the result obtained, it was mentioned in the literature that the use of technology could be effective in making museums accessible as in all areas. In this context, it is suggested that the use of mobile applications, virtual reality applications and 3D figures

should increase the accessibility of museums (Rodrigo, Paniagua & Serrano, 2019). As can be understood, the findings obtained from the research and the results in the literature coincide. In addition, within the scope of the four sub-objectives of the research, it was also determined that the participants had similar and different views with each other.

Participants had different views on the concept of accessible museum, which is considered in line with the first sub-goal. The teacher candidates trained in museums and lecturers taught and experienced in special education especially associated the concept of accessibility with the presence of digital infrastructures and virtual environments in museums. Within the scope of this view, they emphasized that these infrastructures were important for the works exhibited in the museum for disabled individuals. In parallel with this, it was stated in the researches that the use of technology in making museums accessible was important both in easily accessing the collections through virtual environments and in gaining experiences about the works in the museum (Demirzen, 2019). In the literature, the importance of digital applications that could be used in museums and what kind of applications could be created were mentioned. Within the scope of digital applications, there are activities such as transferring collections to digital environments, creating 3D images of works with augmented reality applications (Demirzen, 2019) that can be used. The participants stated that the concept of accessible museums and the concept of time and space were also related. At this point, the views in the studies also supported this finding. Studies mentioned that it was important to create virtual museums that contain the collections in order to ensure that museum collections can be accessed under equal conditions for all individuals in the society from every place and environment (Dincer et al., 2019). Again, within the scope of the first sub-goal, the participants associated the concept of accessible museum with museum architecture and the presentation of equal opportunities. In parallel with these views, it was mentioned in the studies that museums should provide equal opportunities not only for a part of the society but also for all individuals, including disabled individuals, and that museum architecture should be shaped according to the physical conditions of disabled individuals (Lisney et al., 2013; Simbarashe & Mupira, 2017).

Findings related to the second sub-objective of the study revealed that the participants stated that there were some obstacles in the creation of accessible museums. It was also determined that the views of the participants about the "accessible museum concept" and their views on the obstacle were in parallel. Accordingly, the participants stated that the most

important obstacle encountered in the creation of accessible museums was the insufficient use of digital applications. Parallel to this finding, it was emphasized in the literature that digital applications were important in promoting museums and providing interactive interaction, and the absence of these applications in many museums was an important obstacle (Vaz et al., 2018). Also, the participants also stated that the infrastructure and hardware deficiencies of the designs in the interior and exterior of the museums were among the obstacles. In the literature, it was also stated that there should be markings, walking areas, ramps and touch-operated devices for physically disabled individuals in museums and ruins (Yeşilyurt, 2014).The participants also found the tools and devices for the promotion of the artefacts in the museums insufficient. In the related literature, it was stated that there was a need for devices with audio explanations that enable disabled individuals to closely recognize the works in museums, and especially for visually impaired individuals, where directions can be given while walking around the museum, and they can listen while visiting (Mesquita & Carneiro, 2016). Finally, the participants in the research emphasized the Covid-19 epidemic and transportation difficulties as important obstacles to accessing museums. At this point, it was also stated by ICOM (International Council of Museums) that more than 85,000 museum institutions were affected by the COVID-19 global epidemic and the visits decreased after the crisis (Kasapoglu Akyol, 2020). In addition, it was stated in the literature that transportation was an important problem regarding the difficulties faced by individuals with disabilities in accessing museums (Yumuk & Kocoglu, 2020).

Findings related to the third sub-purpose of the research revealed that the majority of the participants considered simulations and virtual reality important within the scope of the technological tools that should be used to make the museum accessible. Parallel to this finding, exemplary museums in which virtual reality applications were used, were mentioned in the literature. It was stated that with this application, various historical points could be visualized and individuals can access additional information with information buttons as well as historical pictures taken from the museum's large collection and placed on their real views. Especially blind people can feel the artworks via virtual reality (Demirezen, 2019). They also stated that there was a need for exhibitions. These findings are in line with the views in the literature. In the literature, it was stated that objects that represent a combined or original work for visually impaired individuals are needed (Yesilyurt, 2014), and audio guide systems are important for disabled individuals to experience museum visits (Dincer et al., 2019). In addition, it

was mentioned in the literature that mobile devices had an important place in the lives of individuals, and it was seen as one of the most important applications for all individuals to gain experience with museums and integrating museums with technology (Akca, 2020). Also, the importance of adding museums' collections to digital environments was also mentioned in the literature (Karadeniz, 2020).

Findings related to the fourth sub-purpose of the research reflected the recommendations of the participants how museums should be accessible. The majority of the participants offered recommendations on increasing the use of digital tools, arranging the designs of museum architectures according to disabled individuals, increasing virtual museum and reality applications, and increasing three-dimensional tactile works in the museum in parallel with the views they expressed under other sub-objectives. In the literature, it was determined that there were views parallel to these findings, and that all precautions should be taken in the creation of accessible museums (Sen et al., 2014; Yesilyurt, 2014). In addition, the participants emphasized the importance of providing the braille alphabet in museums for the visually impaired, training the museum staff and raising the awareness of the disabled about access to museums. Similar views were found in the literature. In the researches, it was mentioned that the preparation of documents giving information about the works in braille alphabet will facilitate the access of the visually impaired individuals to information (Yumuk & Kocoglu, 2020). Again, it was pointed out in the literature that museum personnel avoided communicating with disabled individuals (Dincer, 2019) and did not have sufficient information about the areas arranged for the disabled, and this deficiency should be eliminated (Poria & Brandt, 2009).

The number and variety of educational projects for disabled visitors in museums should be increased day by day, because this is also a requirement of the universal disability rights adopted and accepted by many world states (Caroline, 2016). Many studies and projects indicate that museum projects for the disabled will develop further in the future to include special education studies of different dimensions (Homem & Pinto, 2019). In this context, it is necessary to pave the way for people with disabilities to visit museums in a comfortable area with short- and medium-term exchange projects (Stinger, 2014). In Northern Cyprus, projects should be produced so disabled people can easily visit museums and participate in trainings. With the physical and environmental regulations to be made, taking measures for the disabled should be made compulsory. This necessity will enable the production of many projects for the disabled. Another option

is to increase social responsibility projects, especially supported by municipalities and private companies, for disabled visitors in museums (Sandell, 2002). It should be aimed to increase the projects that facilitate the adaptation of the disabled to social life. In line with these goals, museums, elements such as interior designs, educational tools promoting the museum and the artifacts should be changed.

As interior design, exhibition areas of museums, training workshops should be reorganized considering the needs of the disabled, and new arrangements should be made for the disabled in elevators, ramps, corridors, toilets, cafeterias, wet floors, museum libraries and social areas (Caroline, 2016). Entrance platforms to the museum, car park for the disabled, and environmental regulations that provide easy access to the museum should be made (Swigger, 2022). On the other hand, educational tools should be changed and technology supported projects and audio-based virtual tours should be made to enable disabled people to access the artifacts in museums remotely without going to the museum (Asami & Beatriz, 2022). Special programs should be transformed into digital-oriented data in order to serve the hearing-impaired visitors in museums and to promote the works. By employing guides who speak in sign language, it will be possible to transfer the information in the museum to the hearing and visually impaired visitors with touch screens, holograms (Jose & Ana, 2020). Braille can be used for museum information boards, brochures and museum maps, floor plans, direction boards. With 3D technology, it is possible to make copies of the works and touch them. With programs that can be downloaded to technological products such as portable smartphones and ipads, technology-supported programs can be developed to enable people with disabilities to visit museums easily, as in geolocation programs. In museum education projects, studies for disabled visitors should be increased and the service quality of museums should be increased to a level suitable for the use of disabled people.

Within the scope of the research, it is suggested that providing training on accessibility is a necessity. Also, ensuring above mentioned conditions museums will be accessible for everyone.

7. Recommendations

All the findings obtained from the research revealed that teacher candidates trained in museums and lecturers taught and were xperienced in special education had various views on making museums accessible and their awareness of the importance of this issue is at a sufficient level. At this point, within the scope of this research, it is suggested that the necessary

conditions should be provided by the state stakeholders in order to make museums accessible to individuals with disabilities. In addition, the joint work of experts in the field of museums and special education on the arrangements to be made and the determination of the needs for this is considered important. It is also recommended that subject experts should provide training on accessibility. In this way, awareness about disabled tourism will also be created. With information about the accessibility to museums and education, all individuals in the society will be able to access and socialize on equal terms without any barriers. Finally, applying regulations before giving a permit, and ensuring the necessary conditions for museums should become an important requirement. In addition, this standard should be applied in the sustainability of existing museums.

8. Research Limitations

The participants of the study were determined by using an easily accessible pattern from the purposeful sampling methods. Determining the participants with this research method limits the treatment of the research findings within the scope of the generalizability principle. This constitutes the limitation of the research. In this context, in order to reach generalizable interpretations, it is recommended that subsequent researches reach wider masses in sample selection. However, since the research was prepared as a pilot study, disabled people were not included in the sample group. This constitutes another limit of the research. After the pilot application phase, it is planned to include disabled people in the sample group and to expand the research further with the survey model.

References

Akıncı, Z., & Sönmez, N. (2015). A Qualitative research on evaluation of accessible tourism expectations of people with disabilities. *Anatolia*, *26*(1), 97 – 113. https://dergipark.org.tr/tr/download/article-file/154480

Braden, C. (2016). Welcoming All Visitors: Museums, Accessibility, and Visitors with Disabilities. *University of Michigan Working Papers in Museum Studies*, *12*, 4-14. http://ummsp.rackham.umich.edu/wp-content/uploads/2016/10/Braden-working-paper-FINAL-pdf.pdf

Buyukozturk, S., Kilic Cakmak, E., Akgun, O. E., Karadeniz, S., & Demirel, F. (2022) *Scientific research method.* Pegem Akademi, Ankara. https://depo.pegem.net/9789944919289.pdf

Carlton, B. (2018, April 5). *This VR Exhibit Lets the Visually Impaired Touch Art*. Vrscout. https://vrscout.com/news/vr-exhibit-visually-impaired-touch-art/

Cuseum. (2017, May 24). *North Carolina Museum Of Art Launches Mobile App To Provide Themed Tours For Visitors*. Cuseum. https://cuseum.com/blog/north-carolina-museum-of-art-launches-mobile-app

Demirezen, B. (2019). A literature review on the availability of augmented reality and virtual reality technology in the tourism sector. *International Journal of Global Tourism Research*, *3*(1), 1-26. https://dergipark.org.tr/en/download/article-file/710628

Dincer, F. I., Ozcit, H., Cifci, I., Sezer, B., Kahraman, O. C., & Sahinoglu, S. (2019). Accessible Museums for Visually Impaired: A Case Study from Istanbul. *Journal of Tourismology*, *5*(2), 113-126. https://doi.org/10.26650/jot.2019.5.2.0032

Dundar, V. T., & Bezci, İ. (2019). An action research on accessibility of museums: PTT Stamp Museum. *Art Writtings*, *40*, 335-363. https://www.researchgate.net/publication/333144752_MUZELERIN_ERISILEBILIRLIGI_UZERINE_BIR_EYLEM_ARASTIRMASI_PTT_PUL_MUZESI

Enrique Llamazares De Prado, J., & Rosa Arias Gago, A. (2020). Education and ICT in Inclusive Museums Environments. *International Journal of Disability, Development and Educatio*n, 1-15. https://doi.org/10.1080/1034912X.2020.1856350

Ercan, F. (2022). Accessible tourism experiences in smart destinations: The case of Breda (Netherlands). In R. A. Costa, F. Brandão, Z. Breda, & C. Costa (Eds.), *Planning and managing the experience economy in tourism* (pp. 274-300). GOVCOPP, University of Aveiro, Portugal. https://doi.org/10.4018/978-1-7998-8775-1.ch015

Evci, A., & Kus Sahin, C. (2017). A research on assesment of accessible tourism by physically handicapped individauls. *Nevsehir Journal of Science and Technology*, *6*(2), 681-689. https://doi.org/10.17100/nevbiltek.334625

Frayer, L. (2015, MAy 26). *Do Touch The Artwork At Prado's Exhibit For The Blind*. Parallels. https://www.npr.org/sections/parallels/2015/05/26/408543587/do-touch-the-artwork-at-prados-exhibit-for-the-blind

Homem, P., & Pinto, M. (2019). Challenges In Educating Museum Professionals For The 21st Century. The Mu. Sa-Museum Sector Alliance Project. *In ICERI2019* Proceedings (pp. 8406-8413). IATED.

Hutchinson, R. S., & Eardley, A. F. (2020). The accessible museum: towards an understanding of international audio description practices in museums.

Journal of Visual Impairment & Blindness, *114*(6), 475-487. https://doi.org/10.1177/0145482X20971958

ICOM (June, 2017). International Council of Museums (Icom) Statutes. https://icom.museum/wp-content/uploads/2018/07/2017_ICOM_Statutes_EN.pdf

Karadeniz, C. (2020). Use of digital technologies in the museum and digital participation during the attack. *The Journal of Idil Art and Language, 9*(70), 975-84. https://doi:10.7816/idil-09-70-06

Kasapoglu Akyol, P.K. (2020). Museum activities during and after the Covid-19 pandemic. *Millî Folklor*, *16*(127), 72-86, https://dergipark.org.tr/tr/pub/millifolklor/issue/56908/765898

Lisney, E., Bowen, J. P., Hearn, K., & Zedda, M. (2013). Museums and technology: Being inclusive helps accessibility for all. Curator: *The Museum Journal*, *56*(3), 353-361. https://doi.org/10.1111/cura.12034

Marshall, C., & Rossman, G. B. (2014). *Designing qualitative research*. Sage publications, New York.

Mesquita, S., & Carneiro, M. J. (2016). Accessibility of European museums to visitors with visual impairments. *Disability & Society*, *31*(3), 373-388. https://doi:10.1080/09687599.2016.1167671

National Gallery of Prague. (2018, March). *National Gallery of Prague: Touching Masterpieces by Geometry Prague*. Creative Works. https://www.thedrum.com/creative-works/project/geometry-prague-national-gallery-prague-touching-masterpieces

Ozer Erbay, N. (2017). Museums and education projects targeting visitors with disabilities. *National Education*, 214, 345-358. https://dergipark.org.tr/en/download/article-file/441179

Poria, A. R., & Brandt, Y. (2009). People with disabilities visit art museums: An exploratory study of obstacles and difficulties. *Journal of Heritage Tourism*, *4*(2), 117-29. https://doi.org/10.1080/17438730802366508

Reyes-García, M. E., Criado-García, F., Camúñez-Ruíz, J. A., & Casado-Pérez, M. (2021). Accessibility to cultural tourism: The case of the major museums in the city of Seville. *Sustainability*, *13*(6), 3432. https://doi.org/10.3390/su13063432

Robledo-Allen Yamamoto, A., & Asfora Galuban, B. (2022). Illness and Empathy: Promoting Anti-Ableist Practices in Art Museum Education. *Journal of Museum Education*, *47*(2), 223-237. https://doi.org/10.1080/10598650.2022.2072609

Rodrigo, C., Garcia-Serrano, A., & Rodrigo, C. (2019). Museum Accessibility through Technology. The MUSACCES Project Experience. In E. Inglese, & A. Poce, (Eds.), *Studi Avanzati Di Educazione Museale. Experimental*

Education Studies Series. Napoli. https://www.researchgate.net/publication/337010813_Museum_Accessibility_through_Technology_The_MUSACCES_Project_Experience

Sandell, R. (ed.), (2002). *Museums, Society, Inequality. London, New York: Routledge. Standards*. ICOM. https://icom.museum/en/resources/standards-guidelines/standards/

Sen, N., Yetim, A. C., & Bilici, N. S. (2014). A study to determine the suitability of cultural heritage and museums for disabled tourist visitation. *The Journal of Erzincan University Institute of Social Sciences*, *7*, 1-16. https://dergipark.org.tr/en/download/article-file/68575

Senga, E. (2011, March 4). *A Touching Experience: Exploring Art with Blind and Low Sighted Visitors*. Getty. http://blogs.getty.edu/iris/a-touching-experience-exploring-art-with-blind-and-low-sighted-visitors/

Simbarashe S. C., & Mupira, P. (2017). 'Disabled access': Debating the accessibility of Zimbabwe national museums by people with disabilities. In M. Manyanga & S. Chirikure (Eds.). *Archives, Objects, Places and Landscapes* (pp. 355-378). Langaa RPCIG. https://doi.org/10.2307/j.ctvh9vz54.21

Stringer, K. (2014). P*rogramming for people with special needs: A guide for museums and historic sites*. Rowman & Littlefield. https://www.amazon.com/Programming-People-Special-Needs-Association/dp/1442227613

Swigger, J. (2022). Museums and the Educational Mission from the Progressive Era to World War II. *Oxford Research Encyclopedia of American History*. https://doi.org/10.1093/acrefore/9780199329175.013.990

Teherani, A., Martimianakis, T., Stenfors-Hayes, T., Wadhwa, A., & Varpio, L. (2015). Choosing a qualitative research approach. *Journal of Graduate Medical Education*, *7*(4), 669-670. https://doi.org/10.4300/JGME-D-15-00414.1

Vaz, R. I. F., Fernandes, P. O., & Veiga, A. C. R. (2018). Interactive technologies in museums: How digital installations and media are enhancing the visitors' experience. In. Rodrigues, J. M. F., Ramos, C. M. Q., Cardoso, P. J. S., & Henriques, C. (Eds). *Handbook of research on technological developments for cultural heritage and e Tourism applications* (pp. 30-53). IGI Global. https://doi:10.4018/978-1-5225-2927-9.ch002

Wiastuti, R. D., Adiati, M. P., & Lestari, N. S. (2018). Implementation of accessible tourism concept at museums in Jakarta. *Earth and Environmental Science*, *126*. https://doi.org/10.1088/1755-1315/126/1/012061

Yesilyurt, H., Kırlar, B., & Ceyda, L. A. (2014). The silent and dark world of museums: Is "Museums for all" possible?.*The Journal of Gazi University Tourism Faculty*, *2*, 1-9, https://dergipark.org.tr/en/download/article-file/811698

Yumuk, Y., & Kocoglu, C. M. (2020). Evaluation of applications for children in the museums within the scope of visitor Experience. *Journal of Turkish Tourism Research*, 4, 3964-3975. https://www.ceeol.com/search/article-detail?id=923854