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Türkiye Bilimler Akademisi
Turkish Academy of Sciences

PRINCIPLES FOR PROMOTING ACCESS TO CULTURAL HERITAGE FOR INDIVIDUALS WITH DISABILITIES



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PRINCIPLES FOR PROMOTING ACCESS TO CULTURAL HERITAGE FOR INDIVIDUALS WITH DISABILITIES

Easy to Read Book

Principles for Promoting Access to Cultural Heritage for Individuals with Disabilities

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Turkish Academy of Sciences
Vedat Dalokay Cad.
No:112 06670 Çankaya - Ankara
Tel: +90 312 442 29 03 • www.tuba.gov.tr

TÜBA Project Team

Prof. Dr. Muzaffer ŞEKER - Manager
Assoc. Prof. Dr. Kevser ÇINAR - Coordinator
Assoc. Prof. Dr. Mürsel DOĞRUL - Researcher

Authors

Prof. Dr. İbrahim DİKEN - Anadolu University
Dr. Ümit Savaş TAŞKESEN - SOBE & Necmettin Erbakan University
Dr. Tezcan ÇAVUŞOĞLU - Kafkas University
Dr. Uğur Onur GÜNDEN - Anadolu University
Şerife İLKAYA - SOBE
Cemre GÜREL - SOBE

Secreteriat

Furkan AKBAŞ

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Ali Buğra ERGİN

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FOREWORD

The Turkish Academy of Sciences (TÜBA) is an autonomous apex institution committed to the advancement, promotion, and dissemination of scientific knowledge in Türkiye. Its intellectual foundations date back to the Society of Scholars established in 1851 during the Ottoman period. Today, TÜBA encompasses all scientific disciplines under three main domains: basic and engineering sciences, health and life sciences, and social sciences and humanities. Through research groups, grants and awards, scientific reporting, and international cooperation, TÜBA actively supports scientific excellence, innovation, and evidence-based knowledge production.

Cultural heritage is a shared legacy of humanity, reflecting the collective memory, creativity and identity of societies. Ensuring equal access to this heritage is a fundamental human rights, social inclusion and cultural participation issue, not merely a technical or architectural one. In this regard, accessibility must be understood as a comprehensive, multidimensional process addressing physical, sensory, cognitive and communication needs.

The booklet Principles for Promoting Access to Cultural Heritage for Individuals with Disabilities – Easy-to-Read Book has been prepared as part of the iNCLUSION Erasmus+ KA220-HED (2023-2-TR01-KA220-HED-000177708) project to address this issue by providing a clear, practical and evidence-based

approach. Based on scientific research, international standards and inclusive design principles, it translates complex accessibility concepts into practical recommendations that cultural heritage institutions of all sizes and in all contexts can implement.

This booklet's easy-to-read format is particularly noteworthy. It recognises that accessibility begins with understanding, and that information must be presented in a clear, readable and inclusive way for individuals with intellectual, sensory and learning disabilities. This approach benefits not only individuals with disabilities, but also enhances the overall visitor experience for everyone.

I believe that this book will function as both an academic reference and a strategic guide for policymakers, educators, and cultural leaders working to promote inclusion across heritage and tourism systems. I also hope it will strengthen ongoing collaboration between researchers and decision-makers, supporting the transformation of scientific evidence into long-term, inclusive policy outcomes. I extend my thanks to the Turkish National Agency and all project partners and authors for their invaluable support.

Prof. Dr. Muzaffer ŞEKER
Turkish Academy of Sciences (TÜBA), President
ORCID: 0000-0002-7829-3937

PREFACE

Every year, millions of people around the world set out to experience both national and international cultural heritage. However, this demand often falls short or fails to materialize because cultural heritage sites and the experts working in these areas are often "less inclusive." In this context, one of the groups most deprived of this experience is undoubtedly individuals with special needs. Building a truly inclusive society is possible by making that society's cultural heritage accessible to the entire community and the world. In this context, inclusive cultural heritage work is of great importance. This book you are reading has been written to support more inclusive access to cultural heritage. The primary target audience of the book is cultural heritage agents, managers, or experts working to make cultural heritage sites accessible; civil society organizations working on cultural heritage access; and university students studying cultural heritage. It is also important for specialists working with individuals with special needs who wish to start inclusive cultural heritage work, as it broadens their perspective on accessibility in the context of "cultural heritage sites."

Research on the accessibility of individuals with special needs to cultural heritage sites focuses on the entire access experience, particularly before, during, and after access. Because each category of special needs has distinct and shared developmental requirements, access to cultural heritage requires a highly

detailed approach. In this context, it is crucial to rethink accessibility across many contexts, from communication to physical access, sensory regulation, and self-care opportunities. As we address accessibility issues for individuals with special needs in cultural heritage areas, new accessibility issues and solutions emerge; every day, this endeavor contributes to the creation of more inclusive solutions. Therefore, this book presents the general characteristics of individuals with special needs and adaptations to these characteristics in cultural heritage areas. The book approaches accessibility to cultural heritage as a holistic experience, following a flow that includes adaptations before, during, and after the visit; recommendations for multimedia, booklets, and maps for use at cultural heritage sites; and, finally, communication tips for each specific need category. Written in an easy-to-read style, the book has been stripped of as much field-specific jargon as possible. It is presented as a scientific adaptation guide with simple descriptions and functional information for a general audience. The book addresses the most common categories of special needs encountered in cultural heritage settings, specifically: hearing loss and deafness, low vision and blindness, intellectual disability, learning disability, autism spectrum disorder, and physical disability.

Finally, the book points to an area that requires specialized, comprehensive intervention for experts seeking new horizons in a more accessible cultural heritage, as well as for those wishing to deepen their expertise in cultural heritage or to support individuals with special needs. As the editors of this book, we hope that this content, written with the motto of a more inclusive cultural heritage, will help create a more accessible

society. We hope that every accessibility tip, adaptation principle, or practice highlighted here will be implemented in the field of cultural heritage. We hope this book will serve as a guide for everyone who wants to create a more inclusive cultural heritage and an accessible society.

Authors

This book has been produced as an output of the survey studies conducted within the framework of the iNCLUSION Erasmus+ KA220-HED Project (2023-2-TR01-KA220-HED-000177708), which is funded by the Turkish National Agency under the Presidency for European Union Affairs of the Ministry of Foreign Affairs of the Republic of Türkiye and coordinated by the Turkish Academy of Sciences (TÜBA).

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DEAFNESS AND HEARING LOSS



What is Deafness and Hearing Loss?

Deafness and hearing loss (DHL), in its simplest definition, is the partial or total loss of an individual's sense of hearing due to a problem in part or all of the hearing system. Depending on the problem in the hearing system, the individual has problems in academic, social and emotional development, especially in acquiring spoken language.

Frequently Encountered Nomenclature in DHL

The picture encountered due to problems in the hearing system is a partial or complete loss of hearing. However, in all circumstances, the individual and the situation in which the individual finds himself/herself are not referred to in the same way. The frequency of use of these concepts, which are used together in daily life, may vary according to the culture and the approach adopted by the official institutions in the geography where they live. Hearing impairment, hearing loss and Deafness are frequently encountered in this context. Hearing loss is a medical term that refers to a decrease or complete loss of sensitivity of the auditory system to sound.

On the other hand, hearing impairment relates to the limitations that the individual experiences in general development areas, especially language development, due to the loss of the hearing system. Finally, although it may seem like slang or offensive expression at first glance, deafness is a cultural designation. Deafness is a community that accepts sign language as its mother tongue and sees deafness as a community with its own language and cultural artefacts rather than a disability. Throughout this text, the acronym DHL will be used to describe the loss itself and Deaf and Hard of Hearing (DHH) will be used to describe the group as more inclusive.

Identity of DHH Individuals

Deaf identity is a concept that refers to the place where DHH individuals group themselves in society. This grouping depends on the positioning of the individual within the "hearing community" and the preferred communication

modality. In this context, four identities can be mentioned: hearing identity, bilingual identity, deaf identity and marginal identity. Hearing identity is when an individual sees himself/herself as a member of the hearing community and chooses oral language as the primary communication modality. Individuals who adopt this identity benefit from hearing assistive technologies due to their DHL and have a positive view of medical operations (e.g. cochlear implants, brainstem implants) to support their hearing. Individuals with bilingual identities accept themselves as a member of both hearing and deaf society. In this context, they use both sign and oral language and refer to themselves as natural members of both communities. Deaf identity is the adoption of deafness as a subculture rather than a disability. Individuals with a Deaf identity accept sign language as the primary communication modality and are mostly distant from using assistive hearing technology or related operations. There are also individuals with marginalised identities, albeit in smaller numbers compared to other groups. These individuals do not feel they belong to the hearing or deaf community within social groups. The identity expressions mentioned here are based on the life practices of individuals rather than the units in which individuals directly express themselves. Therefore, evaluating individuals in their context and conditions is always important.

Causes of DHL

DHL can occur at any stage of development. Accordingly, we can share the conditions that lead to hearing loss according to the classical classification used to understand the causes of DHL (e.g. prenatal, perinatal and postnatal).

Prenatal causes

Prenatal causes of DHL include various factors. Hearing loss in the family and close relatives, exposure of the mother to X-rays during pregnancy, maternal infections during pregnancy, heavy smoking and alcohol use during pregnancy, accidents and traumas during pregnancy are among the causes that can lead to prenatal DHL.

Perinatal causes

Preterm birth, low birth weight (1500 grams or less), oxygen deprivation during birth, including anoxia-hypoxia, and trauma during birth are among the causes of DHL.

Postnatal causes

Postnatal causes often include ear infections such as scarlet fever, rubella, meningitis, and whooping cough. Accidents can also cause DHL. Finally, postnatal causes include exposure to high doses of antibiotics.

Classification and Prevalence of DHL

DHL is classified in different ways. These classifications can be based on the type, degree, time of onset, period of language acquisition, and location in the auditory system where the hearing loss occurs. The causes of DHL (e.g. pre-, peri- and postnatal) can lead to different degrees and types of DHL. The degree of DHL is expressed in decibels (dB), representing sound intensity. Two main classifications are used worldwide to classify the degree of DHL: the American Speech and Hearing Association (ASHA) and the British Association of Teachers of Children and Young People with Hearing

Impairment (BATOD). Since the ASHA classification is more widely used worldwide, it is explained in this text. Table I shows this classification.

Table I.
Classification of DHL by Degree

Type	Degree	Effect on Communication Skills
0-15 dB*	Normal	There is no negative impact on communication skills.
16-25 dB	Slight	They may have difficulty hearing sound in a noisy environment. Language development may be delayed.
26-40 dB	Slight-Mild	Even in a quiet environment, the child may have difficulty hearing soft conversations and distant sounds. Language development is delayed. Hears speech sounds with hearing assistive technologies.
41-55 dB	Mild	Can only follow conversations at close range. Has difficulty following group discussions. Hears speech sounds with hearing assistive technologies.
56-70 dB	Mild-Modarate	The individual can follow conversations that are loud and repetitive. Has difficulty understanding group conversations. The intelligibility of speech is low.
71-95 dB	Severe	Cannot hear many voices in conversations and has difficulty recognizing most of the words they hear. Difficulty perceiving environmental sounds. Speech has low intelligibility.
96 dB	Profound	Cannot hear sounds without hearing assistive technology. Language development is delayed. Speech has low intelligibility.

*dB: Decibel

Another approach used in the classification of DHL is the classification based on the location of the hearing loss. Accordingly, there are four types of hearing loss. Conductive type hearing loss is the inability to transmit sound to the inner ear as a result of a condition affecting the outer ear and middle ear. Sensory-neural hearing loss is caused by damage to the inner ear and the nerves running

from the inner ear to the brain. Mixed-type hearing loss is a combination of both conductive and sensorineural hearing loss. Central-type hearing impairment is the result of damage to the central nervous system. DHH individuals represent an extensive group. The World Health Organization (WHO) emphasises that 32 million individuals worldwide may be affected by DHL, with DHL occurring at any stage of life after birth. However, considering the trend in the incidence of DHL, WHO estimates that by 2050, 2.5 billion people will be affected by various types and degrees of DHL and 700 million of this group will need auditory rehabilitation services. Today, Universal Newborn Hearing Screening Programs (UNHBSP) can diagnose DHL at birth. Current UNHBSP data estimates that 1-3 out of every 1000 live births have various types and degrees of DHL.

Characteristics of DHH Individuals

DHL can occur at different stages of life due to many other factors. In addition, the behaviours or developmental characteristics of DHH individuals depend not only on their level of being affected by DHL. The age at which DHL is diagnosed, the age at which intervention begins, the quality and intensity of the education received, the use of technology, the participation of the family in education and the level of knowledge are all factors that affect the developmental characteristics of an individual affected by DHL. Therefore, a broad spectrum can be presented rather than a commonality in the developmental characteristics of DHH individuals. In this context, the analogy used as "hearing loss is a natural experiment" becomes even more meaningful. Despite all this heterogeneity, the general developmental characteristics of DHH individuals can be mentioned.

Physical and motor development; they perform similarly to typical hearing individuals. Ear anomalies due to genetics or trauma (such as absence of auricle or ear canal). Although their motor development follows a similar sequence, it is relatively slow. Fine motor skills may be limited due to the overprotective attitudes of the family and delays in receptive language skills. In gross motor skills, it is observed that they score lower than their peers and have problems, especially in dynamic-static balance.

Cognitive development: Cognitive development is similar in terms of potential vto their peers unless there is an additional disability. The current approach is that DHH individuals have different ways of thinking. Accordingly, DHH individuals are more successful in recalling visual content than written and numeric content. They may have limitations in remembering complex expressions. Their memory of the events they experienced performs at a better level. In addition, their memory performance is better when auditory and visual stimuli are presented simultaneously.

Language and communication development: They also lag behind their peers in language development and progress more slowly. It is known that they use abstract concepts and metaphors very little and have difficulty understanding metaphors. They form shorter, simpler sentences and use prepositions, conjunctions, and verbs less frequently. Because of their limited vocabulary, they may have difficulties understanding idioms, analogies, homonyms and figurative words. Problems such as difficulties initiating and maintaining conversations and insufficient information about the content of the conversation may be observed.

Academic development: Due to low readiness in literacy learning due to hearing loss and lack of sufficient language experience, they may experience limitations in making sense of the texts they read. In addition, difficulties may be observed in acquiring literacy skills due to limited vocabulary, syntax, writing, spelling, and grammatical errors. They may have problems in understanding compound and cyclic sentences and using inflectional suffixes.

Social-emotional development: It is stated that DHH individuals tend to interact more with their DHH peers, and the feeling of loneliness increases with school age. It is reported that they have difficulty recognising, interpreting, and understanding emotional situations, and accordingly, they have limitations in responding appropriately to emotional situations. They show a rigid attitude towards new situations and are less aware of the personality traits of other individuals. It is stated that they show more selfish and impulsive behaviours than their typically developing peers.

Principles for Promoting Access to Cultural Heritage for Deaf and Hard of Hearing Individuals

Deaf/Hard of Hearing Individuals (DHH) benefit from adaptations at all stages of the visit process for active participation in cultural heritage sites. Regardless of the level of hearing loss, it should not be considered as a condition that only negatively affects communication. On the contrary, hearing loss at an early age affects language and

communication development as well as cognitive, social and academic development. Therefore, it would be appropriate to make adaptations that support all areas of development to ensure the active participation of DHH individuals in cultural heritage areas.



Pre-Visit

The pre-visit process is the stage where individuals receive information about cultural heritage and make plans for the cultural heritage site they intend to visit. Today, this stage is provided through cultural heritage social media accounts, websites and brochures at tourist information points. All these mediums, where DHH individuals receive information before their visit, need to be adapted so that individuals can access all possible information and services that the cultural heritage site offers and does not currently offer.

a. Principles for enhancing the accessibility of the cultural heritage site's website;

- Writing all website content in a simple and understandable language will increase accessibility. It is also recommended not to use a term-intensive language in the website content.
- The directions within the website should be titled clearly and understandably. It is very important to use titles that clearly reflect the content.
- Adding videos about the services offered in the cultural heritage site to the website will increase comprehensibility.
- Adding simplified subtitles to all videos on the website is crucial in supporting comprehensibility.
- Indicating which adaptations are available for DHH individuals in exhibitions, presentations, or meetings will help individuals plan qualified trips.
- Including a downloadable and simple map of the cultural heritage site on the website is particularly important for an accessible travel experience.
- If a sign language interpreter or assistive hearing technology service is available for DHH individuals, making an appointment through the website will eliminate possible communication difficulties that DHH individuals may experience.
- Providing written, verbal and face-to-face information via video conferencing applications will increase accessibility.

b. Principles for enhancing the accessibility of the cultural heritage site's social media content;

- Writing the information presented in social media content in a simple and understandable language will support comprehensibility.
- Using visual clues in the created content will reduce the limitations, especially related to vocabulary.
- Including simplified subtitles with voiceover in the content will increase comprehensibility.
- Including simplified subtitles and universal sign language translation in video content is essential.
- A simple background should be preferred so that the information in the content is easily understood. Attention should be paid to contrast formation, which will increase access to the content.

c. Principles for enhancing the accessibility of the cultural heritage site's brochures;

- It is essential to use simple and understandable language in brochures; care should be taken not to use term-intensive language.
- Services that are not currently offered should also be mentioned in addition to those offered in the cultural heritage area.
- Small font sizes and complex fonts should be avoided to make the brochures easy to read.
- The brochure's content should be surrounded by a plain and contrasting background to ensure easy text reading.

d. Principles for enhancing the accessibility of the cultural heritage site's multimedia content;

- The videos to be projected on the website or on the screens inside the cultural heritage site must be shot for a purpose (e.g. site rules, visitor instructions, and cultural heritage content).
- Subtitles in the videos should not be created by transcribing the audio; on the contrary, the content should be summarised in simple language.
- Video content should be kept short; considering the average attention span of DHH individuals, video durations should not exceed two minutes.
- It is essential to visualise the information presented in the videos. Simultaneously, using simple symbols or pictograms will increase comprehensibility.
- The inclusion of universal sign language translation with simplified subtitles will increase comprehensibility.
- The information should be presented on a plain background with a contrast that makes it easy to follow and watch the videos.

Arrival

- Visual signposts are required at toll booths or call points.
- Using assistive technologies (hearing loops, FM systems) for individuals using hearing aids at toll booths/ information points will increase accessibility.
- The presence of sign language-speaking staff at toll booths/ information points, if available, or the provision of this service by appointment before the trip will increase the participation of DHH individuals in heritage sites.

- When written communication is necessary, it is recommended to use simple, short sentences.
- A simple and understandable map of the services should be provided, such as exhibition areas, information points, restrooms, restaurants or quiet spots in the cultural heritage area.
- If there are staff who know sign language, a guide service should be provided for deaf individuals. Appointments and information about the guide service should be provided on the cultural heritage website and information points.

During Visit

- Name tags should be created for staff who know sign language.
- Ambient lighting should be adjusted so that Deaf individuals can communicate easily with sign language. Bright spots should be created in exhibition areas.
- Simple written descriptions of the artefacts in the cultural heritage site should be added.
- Artifacts should be vocalised for DHH individuals. If vocalisation is present in the areas, assistive hearing technologies should be used.
- If video narration is made in exhibition areas, subtitles and sign language should be added to the videos.
- If tour guide services are provided within the cultural heritage site, FM systems should be provided to the guides for individuals using hearing aids.
- It should be kept in mind that individuals using hearing aids may be affected by background noise. Creating quiet

areas or quiet (no background noise) tour hours in the cultural heritage area will increase accessibility.

Post Visit

- DHH individuals should be encouraged to leave comments in the visit book or comment cards. This will help the staff learn about the arrangements and the quality of existing adaptations.
- End-of-trip reminders about the content of cultural heritage should be prepared. It is crucial to create content summarising the contents of the cultural heritage site in simple language.

Tips for Communicating with Individuals with DHH

- It is necessary to ask which communication modality is used in communication with the person with DHH. DHH individuals can use lip reading, oral language, sign language, writing or mixed communication modality.
- During communication with DHH individuals, it is necessary not to take a position that hides facial expressions or lip movements.
- It is recommended to avoid speaking loudly and instead speak at a normal tone and speed.
- In group expressions, it is necessary to prefer a distance where DHH individuals can both follow facial expressions and hear comfortably.
- Individuals who prefer written communication should be communicated with using simple and understandable phrases.

- It is recommended to minimise background noise during communication with individuals using hearing aids (speaking in a quiet place or turning off or turning down the music if there is music in the cultural heritage area).
- If there is a sign language interpreter, it is recommended to speak towards the deaf individuals and not towards the interpreter.

BLINDNESS AND VISION LOSS



What is Blindness and Vision Loss?

Blindness and Vision Loss (BVI) defines a wide range of conditions from low vision to blindness. BVI occurs due to a decrease or complete loss of visual acuity. In this context, defining the concept of visual impairment would be appropriate first. It is defined as "low vision / visual impairment" when the presence or movement of an object in a particular area in the environment, faint letters or shapes cannot be seen from a distance of 6 meters, regardless of the glasses used by the person.

Causes of BVI

Low vision is caused by congenital or postnatal conditions or diseases. Without appropriate intervention, these conditions lead to various visual defects from early childhood. The most common of these conditions are refractive errors such as myopia, hyperopia, or astigmatism. In addition to refractive errors, congenital or postnatal eye diseases that affect vision lead to BVI. Congenital eye diseases include cataracts, intraocular tumours, eye pressure, metabolic diseases, head tilt, droopy lids, yellow spot diseases, and corneal stains. Eye diseases after birth include white pupils, cataracts, intraocular tumours, lazy eyes, droopy lids, retinopathy of prematurity, or trauma.

In addition to eye diseases, some brain diseases or structural anomalies in the brain can cause BVI. Some congenital conditions include hydrocephalus, meningitis, and brain tumours. Postnatal conditions include cerebral haemorrhage, shunt occlusion, epilepsy, cerebral palsy, ocular motor apraxia and eye paralysis.

In addition to the factors mentioned up to this point, it is possible to summarise the factors that lead to BVI under the classical classification as prenatal, perinatal and postnatal. Accordingly, prenatal factors include hereditary diseases, maternal accidents during pregnancy, consanguineous marriages and blood incompatibilities. Perinatal factors include birth traumas (asphyxia, hypoxia), premature birth, difficult birth, and infections transmitted during birth. Postnatal factors include oxygen deficiency or excess, febrile diseases, accidents and traumas, and diseases in the visual system.

Classification and Prevalence of BVI

BVI is defined in three ways: legal, medical and educational. In legal terms, blindness is when an individual sees too little to perform specific tasks. Individuals are legally blind if their visual acuity is 20/200 despite all corrections (medical intervention, driving, etc.). The individual is legally partially sighted if the visual acuity is between 20/70 and 20/200. Medical blindness is when an individual cannot even see light. This condition can be defined in one or both eyes.

Educational blindness occurs when an individual needs tactile or auditory materials such as Braille in education. Thus, educational blindness describes the inability of an individual to use their visual senses for learning. Educationally low vision is the use of the sense of sight for learning. Individuals with low vision need vision-supporting materials (such as glasses, magnifiers, lighting, and contrast) and environmental arrangements to use their existing visual potential best.

Table 2.
Classification of BVI According to Visual Function

Visual Acuity	Degree
Between 6/12 ve 6/18,	Mild
Between 6/18 ve 6/60,	Medium
Between 6/60 ve 3/60,	Severe
Less at 3/60	Blindness

*WHO (2022)

In addition to these classifications, BVI is also classified based on visual function. The World Health Organization (WHO) evaluates visual impairment on four levels by dividing it into two main groups: distance and near vision. Table 2 shows the WHO classification of visual impairment.

Although the prevalence of BVI varies according to the classifications and definitions mentioned so far, WHO emphasises that 2.2 billion individuals worldwide are affected by various types and levels of BVI. It is estimated that approximately 1 billion of these individuals are affected by conditions that can be prevented but are caused by undiagnosed conditions.

Characteristics of Individuals with BVI

The sense of sight is crucial in an individual's learning from the first moments of life. An individual born with normal vision explores their environment using their sense of sight from birth. Problems in the sense of sight may arise due to difficulties in motor, cognitive, social, language, and cognitive development.

Cognitive development: The sense of sight provides holistic information to the individual while recognising their environment. In cases where the sense of sight is limited, individuals need their senses and verbal descriptions to explore their environment. The experiences of individuals with BVI are limited compared to sighted individuals. Especially this situation shows its effect on concept development. For individuals to learn concepts, it is crucial to provide adaptations that appeal to multiple senses and various experiences.

Motor development: Motor development is one of the most intensely affected areas in BVI. Overprotective family attitudes from an early age can result in immobility and lead to limitations in motor development. Individuals can delay acquiring movement skills.

Language and communication development: Limitations may be observed due to limited visual stimuli, especially in receptive language development. Delays in language development may be observed due to limited eye contact, gestures and facial expressions. Communication can be observed in a louder voice and at a lower speech rate. Less use of lip movements in sound production may be observed.

Social-emotional development: Due to limitations in the sense of vision, individuals may become introverted and indifferent to the environment. Timidity and self-isolation behaviours may be observed, especially in individuals who cannot receive appropriate family support. The inability of the individual to recognise their environment sufficiently may cause insecurity and fear.

Principles for Promoting Access to Cultural Heritage for Individuals with Blindness and Vision Impairment

There is a wide range of individuals with Blindness and visual impairment (BVI). Visual acuity, ranging from low vision to blindness, affects not only visual and motor development but also academic, cognitive, and social-

emotional development. As a subgroup, individuals with BVI have different needs depending on their visual acuity and diversity in visual loss (such as monocular, diplopia, low vision, or blindness). Therefore, making arrangements at all access stages is crucial in supporting individuals with BVI access to cultural heritage.



Pre-Visit

The pre-visit is the stage where individuals receive information about cultural heritage and make plans for the cultural heritage site they intend to visit. Today, this stage is provided through social media accounts of cultural heritage, websites, and brochures that serve as tourist information points. Since the channels used by individuals with visual impairment to obtain pre-visit information can differ according to the needs of the individual, adaptations need to be made to the media (printed and/or digital) where pre-visit information is available. These adaptations can be as follows according to the environments where pre-visit information is presented;

e. Principles for enhancing the accessibility of the cultural heritage site's website;

Depending on their level of visual loss, individuals with BVI can benefit from screen reading programs. For this reason, increasing the digital content readability of the cultural heritage site's website is necessary.

- The title and heading layout should be appropriate so screen readers can easily access the content. The content on the website should be placed at appropriate heading levels. The presentation of information under first, second, third, and fourth-level headings enables individuals with visual impairments to provide quick access using shortcuts.
- The subtext of the website's non-textual content (graphic or visual) should be created. When screen readers encounter non-textual content, they will call it a picture or graphic, so a subtext that briefly describes the non-textual content must be added.
- Labels should be used for links or home buttons on the website. Individuals with BVI usually access all links on a website using shortcuts on screen readers. Therefore, it is vital to name the links on the website with simple, clear descriptions of the content.
- Screen readers are applications that use keyboard shortcuts. At this point, the website should be designed to allow keyboard shortcuts so that individuals with BVI can access the information they desire by navigating the website using the shortcuts in the program.
- By their very nature, websites contain many warnings, alerts or link buttons for users. These components are usually presented in different colours. These components

must be meaningful, especially for individuals with low vision or colour blindness. At this point, universal colouring (e.g. underlined blue text for links) should be used. However, if you want to draw attention to a link, it would be appropriate to use symbols [e.g., the symbol (!) for warning or (✓) for correct action]. Using underlined text and bold or different font sizes in these components will increase accessibility.

- Due to the nature of BVI, individuals may have different levels of visual loss. Websites must provide the opportunity to adjust the font size, especially for individuals with low vision. Including buttons to enlarge the font size on the page will increase accessibility, especially for older individuals.
- Too many colours can be used in website designs with aesthetic concerns. However, this limits access, especially for individuals with low vision and colour blindness. Therefore, website design should consider colour universal design (CUD), especially for colourblind individuals.
- Another condition for websites to be accessible for individuals with low vision is to provide sufficient contrast through colours and textures. For example, WCAG (Web Content Accessibility Guidelines) recommends a contrast ratio of 4.5:1 (14-point bold or larger) for normal text at the AA level and 3:1 (18-point bold or larger) for large text.
- The exhibitions, presentations or meetings should indicate the adaptations available for people with visual impairments.

- The website should include a downloadable and simple map of the cultural heritage site. To increase accessibility, it is important to be able to print these maps tactilely.
- Individuals with BVI should be able to make appointments on the website for guides and other services at cultural heritage sites.
- Before the trip, individuals should receive written, verbal or face-to-face information through video conferencing applications.

f. Principles for enhancing the accessibility of the cultural heritage site's social media content;

- All of the website's design adaptations also apply to social media content. At this point, it is very important to use colour, font size, contrast, and tags.
- If the created content can be a voice-over, it should be added (e.g., Instagram posts on cultural heritage).
- Posts should focus on one topic per unit of time. Short sentences written in simple language should be preferred in the content of the posts.

g. Principles for enhancing the accessibility of the cultural heritage site's brochures;

- Care should be taken to use simple and understandable language in brochures and not to use concept-intensive language,
- The services provided in the field of cultural heritage should be mentioned, as well as the services that are not currently offered,

- Avoiding the use of small font sizes and complex typefaces for easy reading of brochures,
- Choosing a simple background in the brochure content and a contrasting background to ensure easy reading of the text,
- Braille versions of the brochures should be created.

Arrival

- There should be floor guides for white cane users at toll booths and search points.
- Presenting the information at the counters/counselling points with multiple communication modalities would be appropriate. At this point, information should be given in Braille or adapted texts.
- When written communication is required, simple, short sentences should be preferred. At this point, the font, colour, and contrast adaptations that WCAG recommends should be considered.
- Services such as exhibition areas, information points, restrooms, restaurants, or quiet spots in the cultural heritage site should be presented on a simple and understandable map, which must be in large print or Braille format.
- Staff at toll booths, search points, and information points must receive awareness training. Being aware of individuals with BVI's needs will greatly increase access to cultural heritage sites.
- Creating large-print and/or Braille catalogues of the works in the exhibitions in the cultural heritage site is essential. Presenting information about the content of the cultural heritage site in the most diverse form possible is a prerequisite for a qualified visit.

During Visit

The best possible utilisation of sightseeing spots, exhibitions or services offered by individuals with BVI in the cultural heritage site depends on the adaptations made in the cultural heritage site. These adaptations can be exemplified as follows to meet the spectrum of individuals with BVI;

- Consistent lighting should be provided throughout the heritage site. This will increase the content and accessibility of the site for individuals.
- For individuals with low vision, additional lighting for informative texts/labels and/or signage/warnings within the heritage site is essential.
- The main panels and panels in the heritage site should have informative content written in 24 or larger font sizes.
- The text on the panels or labels used throughout the heritage area should be printed on a plain background.
- Guidance labels for white cane users should be placed on the floors throughout the heritage site.
- Artefact descriptions/labels in the heritage area should have audio versions. Allowing individuals to take audio tours from their phones through headphones or applications significantly increases accessibility.
- Braille prints should be available for artefact descriptions/labels in the heritage area.
- An audio-narrated guide to the exhibitions in the heritage area is vital for an accessible sightseeing experience.
- Tactile versions of the exhibitions in the heritage area are essential for a quality visit. The production of three-dimensional replicas of the artefacts in the exhibition is vital for ensuring a tactile visit.

Post Visit

- It is essential to enable individuals with BVI to leave comments in the visit book or comment cards. They can use Braille keyboards, writing boards, or audio comments. In this way, they can learn about the arrangements and the quality of existing adaptations.
- Preparing end-of-trip reminders about cultural heritage would be appropriate. It is crucial to create content that summarises the contents of the cultural heritage site in simple language. At this point, it is essential to have Braille or large font printing options.

Tips for Communicating with Individuals with BVI

- Always introduce yourself when communicating with BVI individuals. Speak out when you come near or leave a BVI person.
- You can give specific information when introducing yourself or someone else to an individual with BVI. They may have difficulty remembering you because they meet many people during the day.
- BVI is a broad spectrum. Some individuals may be sensitive to light. At the beginning of the communication, it should be asked whether they are disturbed by the level of light in the environment.
- Individuals with BVI in cultural heritage may need to be physically accompanied. In this case, make sure that the person takes your arm for easy perception of the movements. Describe the obstacles you encounter while moving together (e.g. there are steps in front of us, or there are five steps on the stairs)

- When describing a place, use the orientation of the person's body as a basis. In communication, do not avoid giving descriptions such as colour, shape, and size.
- When accompanying a person with visual impairment, describe the environment you enter in general. Explain what is happening in the environment with simple expressions.
- Although individuals with visual impairments cannot make eye contact, they should not neglect to make eye contact during communication and speak without turning away.
- Avoid speaking loudly; speak in a normal tone and speed,
- Preferring a distance at which the individual with BVI can hear comfortably in group lectures,
- Communicating with individuals who prefer written communication with simple and understandable expressions,
- It would be good to minimise background noise when communicating with individuals with BVI (speaking in a quiet spot or turning off or turning down music if it is playing in the cultural heritage site).
- It is crucial to enable individuals with BVI to leave comments in the visit book or comment cards. They can use Braille keyboards, writing boards, or audio comments. In this way, they can learn about the arrangements and the quality of existing adaptations.
- It would be appropriate to prepare end-of-trip reminders about cultural heritage. It is crucial to create content that summarises the contents of the cultural heritage site in simple language. At this point, it is crucial to have Braille or large font printing options.

INTELLECTUAL DISABILITY



What is Intellectual Disability?

Intellectual disability is a disorder characterised by limitations in three main areas: intellectual functions, adaptive behaviours and developmental period. These areas, part of the definition, are detailed in the following paragraphs. Mental disability has been called by different names in the historical process and various disciplines. These are concepts such as mental retardation, retarded, idiot, moron and imbecile, which can be slang and

offensive today. In some sources, concepts such as mental disability and mental deficiency are used. Due to the negative image that the concept of intelligence has acquired, it is observed that the concept of "intellectual disability" is frequently used both at the academic and legal levels. The term "intellectual disability" is also used in this resource.

Intellectual functions

Intellectual functioning can be expressed as subnormal mental capacity. Intellectual functioning is determined by standardised intelligence tests (IQ). Two standard deviations below the mean is considered an intelligence score for intellectual disability. The mean score on intelligence tests is usually 100. Each standard deviation is expressed as 15 points. Therefore, an intelligence test score of 70 points and below can be described as a criterion value.

Adaptive behaviors

Adaptive behaviours are a set of skills expected from peers at a certain age level. These skills are categorised under three headings: conceptual, social and practical skills. *Conceptual skills* mainly include skills related to concepts. These are skill sets such as language communication, reading-writing, mathematical operations and memory use. *Social skills* are skills involving communication and interaction with others. They are mainly behaviours such as establishing and maintaining relationships, displaying socially appropriate behaviours, understanding others› intentions and resolving conflicts. *Practical skills* are the set of skills required for an individual to be self-sufficient in daily life. These include self-care (eating, dressing, etc.), work skills, safety-related

skills and transportation skills. For a diagnosis, there should be limitations in at least two of the conceptual, social and practical skill areas.

Developmental period

The developmental period is from birth to 18 years of age. For a diagnosis, intellectual disability must be observed during the developmental period, including the age of 18. In some sources, the developmental period is considered as 22.

Causes of Intellectual Disability

The causes of intellectual disability are classified in different ways. These are mainly a time of onset and acquisition. Acquired status is the classification of disability into a) structural (chromosomal, genetic or other hereditary factors, etc.) and b) acquired causes (exposure, nutritional deficiency, trauma, infection, etc.). The other classification is the time of occurrence. Accordingly, intellectual disability is categorised under three headings: a) prenatal, b) intra-natal and c) postnatal causes. These causes are given in the following paragraphs.

Prenatal

These causes observed during pregnancy are divided into three categories. The first of these is *structural causes*. These include chromosomal disorders (Down syndrome, etc.), metabolic problems (PKU, etc.) and brain functioning (hydro- and microcephaly, etc.). Another is maternal illnesses. These are mainly syphilis, toxoplasma and rubella. Finally, substance abuse (alcohol, smoking, etc.) or trauma during pregnancy can cause intellectual disability.

Perinatal

Mental incompetence is often associated with traumatic conditions and oxygen deprivation during childbirth. These are mainly vacuuming, cord entanglement and other conditions, as well as oxygen deprivation, falling of the baby, etc., when the baby is trapped in the canal.

Postnatal

In some cases, factors experienced after birth also cause intellectual disability. Frequently, accidents, malnutrition, neglect and abuse, and high febrile illnesses cause postnatal intellectual disability.

Classification and Prevalence of Intellectual Disability

Individuals with intellectual disabilities are different from each other. This is also reflected in the level of being affected by the disability. In other words, not all individuals have the same severity. While the picture is more severe in some, it is milder in others. At this point, the need for classification arises. Two basic approaches are generally adopted in classification. These are a) educational and b) psychological approaches. The educational classification includes the categories of trainable, teachable and severe or very severe. In psychological classification, on the other hand, IQ tests are used as the basis for classification as mild, moderate, severe and very severe. According to this classification, an IQ of 70-55 is classified as mild, 54-40 as moderate, 39-25 as severe and below 25 as very severe.

The prevalence of intellectual disability is affected by many factors. These are primarily variables such as access to health services, screening and diagnostic processes, the country's level of development, levels of substance use, etc. Although it varies across the world, the rate of intellectual disability is reported to be between 1-3%.

Characteristics of Individuals with Intellectual Disabilities

The characteristics of individuals with intellectual disabilities vary depending on the degree to which they are affected by the disability and other accompanying disabilities and diseases. Sometimes the individual may be strong in one area and weak in another. In some cases, serious limitations are observed in holistic developmental areas. The main limitations observed in most individuals can be expressed as follows:

- **Language and ommunication:** Problems such as language comprehension, contextualization, vocabulary, and understanding metaphors are frequently observed. Therefore, their receptive and expressive language skills may lag behind their peers. Comprehension, expression, articulation, fluency, and voice disorders are also frequently observed.
- **Cognitive skills:** Although cognitive skills are evaluated in many areas, memory, attention, memory, problem-solving and academic achievement are the main developmental areas affected. *Memory* is divided into two as short-term and long-term. Limitations are observed in recall, retention and recall, mainly in these areas. Similarly, *memory* and retention are also affected. Another area is *attention*.

Individuals with intellectual disabilities have difficulties with concentration, maintenance and selective attention. Other limitations include finding solutions to problems, being consistent and finding new ways *to solve problems*. Finally, in parallel with all these, *academic achievement* also lags behind peers in relation to *learning*.

- **Personal and social skills:** Social skills are not independent of the skills listed above. Individuals with intellectual disabilities have limitations in social interaction skills, such as understanding rules, establishing and maintaining appropriate interpersonal communication, making contextually appropriate comments, and requesting or refusing information. Sometimes, they cannot concentrate and understand the other person's feelings and intentions. In some cases, they are even unable to demonstrate self-care skills. As a result, limitations in *interpersonal and social skills* are observed.

Principles for Promoting Access to Cultural Heritage for Individuals with Intellectual Disability

Intellectual disability is a disorder characterised by limitations in three main areas: Intellectual functions, adaptive behaviours and developmental period. Therefore, providing qualified access to cultural heritage sites for individuals with intellectual disabilities is possible through adaptations to be made for these areas. The needs of individuals with intellectual disabilities in the areas mentioned above should be met to provide qualified access to cultural heritage. Under this heading, adaptations that can be made to ensure access to cultural heritage for individuals with intellectual disabilities will be discussed.



Pre-Visit

The pre-visit is the stage where individuals receive information about cultural heritage and make plans for the cultural heritage site they intend to visit. Today, this stage is provided through cultural heritage social media accounts, websites, and brochures that serve as tourist information points. Individuals with intellectual disabilities have limitations in conceptual skills such as reading-writing, memory use and communication due to problems in cognitive development. Therefore, there is a need for adaptations for these limitations in the environments the individual reaches about cultural heritage in the pre-visit process. These adaptations can be as follows according to the environments where pre-visit information is presented;

h. Principles for enhancing the accessibility of the cultural heritage site's website;

- Individuals with intellectual disabilities need to access information, so all website content should be written in simple and understandable language. Short sentences and concept-free language should be used.
- Naming the buttons or links used to access website content is essential for accessibility.
- Having explanatory subtexts for non-textual content (such as tables, figures and pictures) on the website will increase comprehensibility. Non-textual content should be used with subtexts.
- The directions within the website must be clearly titled so that individuals can better access the content they desire. Titles that clearly reflect the content will prevent time loss and enable the individual to better plan his/her trip to the cultural heritage site.
- Adding videos about the services provided in the cultural heritage site to the website will increase comprehensibility. The videos must focus on a single topic regarding comprehensibility per unit of time. Adding simplified subtitles to all videos on the website will increase comprehensibility.
- In exhibitions, presentations, or meetings, the adaptations that are available for individuals with intellectual disabilities should be indicated. All activities in the field of cultural heritage
- The website must include a downloadable and simple map of the cultural heritage site. Explaining the services within

the cultural heritage site on the adapted maps in simple language and with paired symbols will increase accessibility.

- Individuals with intellectual disabilities may be negatively affected by stimuli such as noise, light or crowds. Sensory arrangements realised in the cultural heritage area should be shown on a map. This is important for individuals with intellectual disabilities to plan their visits.
- If services such as individual guides are offered for individuals with intellectual disabilities in cultural heritage sites, it is important to make an appointment through the website. The website should provide clear and explicit information about the conditions under which these services are offered and how to benefit from them.
- Providing face-to-face information to individuals through written, verbal and video conferencing applications and making appointments for pre-trip information will increase the accessibility of individuals with intellectual disabilities to cultural heritage sites.

i. Principles for enhancing the accessibility of the cultural heritage site's social media content;

- The information presented in social media content should be written in simple and understandable language.
- Using visual clues (symbols, pictograms) in the created content is essential for understanding the content.
- Including simplified subtitles with voiceover in the content will support comprehensibility.

- For the information in the content to be easily understood, a simple background should be preferred, and attention should be paid to the formation of contrast to increase comprehensibility. The background chosen should be compatible not only with the text but also with the visual cues used.

j. Principles for enhancing the accessibility of the cultural heritage site's brochures;

- The brochures should use simple and understandable language and not concept-intensive language.
- It is important to mention the services offered in the cultural heritage area and the services not currently offered for a quality visit experience.
- To make the brochures easy to read, small font sizes and complex typefaces must be avoided. Textual content should be supported with visual clues (symbols, pictograms).
- Choosing a plain background in the brochure content and a contrasting background to ensure easy text reading will increase comprehensibility. The chosen background should be compatible not only with the text but also with the visual cues used.

Arrival

- Simple language should be preferred in all directions from the moment of entry to the cultural heritage site. Visual stimuli (such as symbols, pictograms, etc.) should accompany the texts on the signposts inside the heritage site.

- It is important to provide information for multiple communication modalities at the toll booth or information desk. Simple written language, communication boards consisting of pictograms, and speech generators will enable communication with individuals.
- Providing a simple and understandable map of services such as exhibition areas, information points, restrooms, restaurants, or quiet spots in the cultural heritage area is essential for a qualified visit. Explaining the map to individuals will also increase accessibility.
- A sensory bag should be provided before the visit, especially for individuals with sensory sensitivities. Materials such as noise-canceling headphones and eye patches should be provided to protect against sensory stimuli such as smell, light, sound, and noise.
- Providing alternative communication systems that individuals can use during the visit is crucial. Communication boards created with pictograms or symbols should be presented at this point.
- Digital guides increase accessibility for individuals with intellectual disabilities as well as for all individuals with special needs. It is important to provide applications that present the content of cultural heritage sites with symbols and simplified language.
- Providing guide services in cultural heritage sites is an important element of increasing accessibility. Information about this service should be provided at toll booths and information points.

During Visit

The best possible utilisation of the sightseeing spots, exhibitions or services offered by individuals with intellectual disabilities in the cultural heritage area depends on the adaptations to be made in the cultural heritage area. These adaptations can be exemplified as follows to meet the spectrum of individuals with physical disabilities;

- The exhibitions or areas in the heritage site must be organised according to individuals' sensory sensitivities. Heavy odours, loud noises, and bright lights can trigger individuals with intellectual disabilities.
- Sometimes, background sounds or lighting may be used to present artefacts in exhibition areas. In these cases, individuals should be informed before entering the area. In addition, it would be appropriate to mark the rooms with such stimuli on the maps provided at the box office or information points.
- Individuals with intellectual disabilities may be affected by sensory stimuli despite the adaptations made. In these cases, it would be advantageous to have sensory rooms in the heritage area for the individual to regulate himself/herself. Sensory rooms can be defined as rooms where the room lighting can change, different types of tactile materials are available, and where the individual and the caregiver, if any, can sit and calm down.
- The information provided to individuals in the visitation area should be independent of a single communication modality. Simultaneously, using symbols and pictograms in all directions, warnings, or informative content will increase accessibility.

- Symbols and pictograms used in heritage sites should be clear and consistent.
- Information about heritage sites should be presented through multiple communication modalities. Simplified audio guides or digital guides are handy here. In particular, the use of digital tools serves to produce content on various levels simultaneously.
- Informative content on heritage sites should be written in as simple a language as possible. Simplifying the language, free of concepts, makes the content accessible to everyone.
- Language used in heritage content should be in easy-to-understand fonts (such as sans serif) and have a simple background.
- The design used in the heritage area should provide the individual with spontaneous clues for use. In particular, tactile pathways and symbolic guides will facilitate the access of individuals with intellectual disabilities.
- The presence of tactile learning opportunities in the exhibition areas will increase accessibility. Interacting with three-dimensional copies of the artifacts offers important educational opportunities for individuals with intellectual disabilities. Therefore, it is recommended that three-dimensional tactile replicas of the works be created in the exhibition area.
- One important condition of accessibility is that the staff should be accessible in the exhibition areas. Here, it is important for the staff to use more than one communication modality. Alternative communication systems are good solutions at this point. Communication boards created with pictograms or symbols will increase accessibility.

Post Visit

- It is very important that the cultural heritage site's experience is instructive for individuals with intellectual disabilities. For this reason, it would be useful to prepare end-of-trip reminders about the site's content. These can be brochures or booklets summarising the site's contents in simple language.
- It is important for accessibility that individuals with intellectual disabilities can leave comments in the visit book or comment cards. Thus, it will be possible for the staff to learn about the arrangements and the quality of the existing adaptations.
- For individuals with intellectual disabilities to share their experiences in cultural heritage sites, it is important to use more than one communication modality. At this point, the use of written, audio, and speech systems will increase accessibility.

Tips for Communicating with Individuals with Intellectual Disabilities

One prerequisite for cultural heritage sites to be accessible is communication. As with all types of disability, this is extremely important for individuals with intellectual disabilities. Staff knowledgeable about intellectual disabilities and the communication characteristics of people with intellectual disabilities will be able to provide a better experience for visitors.

- When communicating with individuals with intellectual disabilities, be in a calm environment. Distractions in the environment will negatively affect communication.

- It is essential to use simple language during communication. Using a language free of concepts and communicating with short sentences will increase comprehensibility.
- It is important to use physical and visual clues. In addition, making summaries from time to time will help individuals to understand the content more easily.
- Communication is mutual and possible with the participation of all stakeholders. Therefore, more than one communication modality should be offered to the individual to respond. At this point, the use of communication boards, speech-generating systems, or simple written language will be useful.
- Refrain from assuming that everything you say is understood. Instead, check whether you are understood.
- Exaggerated gesture-mimic use will reduce intelligibility.
- Allow the individual to take communicative cues. Make eye contact with the individual, and make sure that the individual can see your mouth and hand movements while you are speaking.
- It is important to repeat instructions and warnings more than once, especially when guiding individuals with intellectual disabilities. The warnings you gave at the beginning of the tour may be forgotten.
- It is important to give time to individuals with intellectual disabilities during communication. Giving the individual time to make choices, to make sense of what you say or to construct their expressions will strengthen communication.

LEARNING DISABILITY



What is Learning Disability?

Learning disability (LD) is a type of disability with a high prevalence, which became visible especially after the 1960s. Individuals with LD have normal or above-normal intelligence and have problems in learning activities. Thus, their academic success is negatively affected. By definition, LD is a condition that leads to inadequate skills such as listening, speaking, reading, writing and mathematical

calculations. These limitations in learning are not based on any other factor, such as visual or intellectual disability. In the literature, LD is referred to by terms such as learning disability, specific learning disability, and learning disorder. In this section, the term specific learning disability, used in academic and legal settings, is preferred.

Causes of LD

LD is a disability whose causes have not yet been fully identified. However, some variables may be related to LD. Neurological factors are among the most critical possible causes. Some individuals with SEN have a different brain structure and functioning than children with typical development. Another variable is heredity. The risk increases significantly in individuals with LD in the family. The environment is also one factor that increases and decreases the possibility of LD. When appropriate role models cannot be observed, the likelihood of LD increases. In addition to these, nutrition, substance abuse, biochemical anomalies and conditions that occur during birth are risk factors for LD.

Classification and Prevalence of LD

LD is delimited according to the areas affected and the degree of impairment. In the classification according to the degree of disability, a) mild, b) moderate and c) severe levels are used. Individuals with *mild LD* have limitations in one or two areas and continue their education with support. Individuals *with moderate LD* experience significant limitations in one or more areas. The education process continues with intensive support. In *severe level of LD*, limitations are observed in

many areas. Instructional plans are made with individualised interventions. LD is encountered in three areas. These are: a) dyslexia, b) dysgraphia and c) dyscalculia. These sub-areas are included in the following headings.

Dyslexia

It is the most common type of LD. These individuals usually show limitations in reading skills and have difficulty learning to read fluently.

Dysgraphia

Writing difficulties. Individuals have difficulty acquiring and using writing skills appropriately.

Dyscalculia

Math disability. Individuals experience limitations in acquiring and performing math-related skills.

Children with LD are a very heterogeneous group. While some children have only one sub-dimension, others may have both or all three. Therefore, the needs and characteristics of individuals diagnosed with LD are different from each other. The prevalence of LD varies across countries. In DSM-V, this rate is between 5-15%. The prevalence rate is around 40% in the USA among all disability groups. Some studies report a prevalence of around 8%. There is no official data on the rate of individuals diagnosed with LD in our country. However, it is stated that this rate is 6% among all disability groups.

Characteristics of Individuals with LD

The characteristics of children with LD are different from each other. Some children may have difficulties in writing, while others may have difficulties in reading. Therefore, there is a wide range of characteristics of individuals with LD. The characteristics of individuals with SEN are as follows:
- *Reading and writing*: Reading is observed in the majority of individuals. However, there are limitations in reading comprehension, word recognition, and appropriate reading skills. Reading can also affect writing. Problems are observed in writing, especially in the mechanical dimension. Writing fluency and appropriate spelling skills may also be affected.

- **Information processing:** Difficulties may be observed in processing information and, therefore, in learning.
- **Learning:** Learning speed may be low. Therefore, the learning process may take time.
- **Academic activities:** It is one of the frequently observed limitations. Difficulties may be observed in simple and basic academic activities. Participation, maintenance or fulfilment of the requirements are the main limitations.
- **Language and speech:** Language disorders accompanying LD are mainly in the areas of abstract elements of language, syntax, pragmatic use, not understanding jokes, and using words that are not appropriate for the context, comprehension and action. Language problems often have a negative impact on social adjustment and the quality of learning.

- **Attention and memory:** Attention problems are often observed together in LD. Short-term attention may be divided, and the individual may have difficulty concentrating. Attention and memory are also affected. Problems are observed in retaining information and recalling it when necessary. These problems in short-term memory also prevent the fulfilment of sequential tasks.
- **Social characteristics:** Limitations in speech, language, memory, learning, etc., also negatively affect social interaction. Problems are observed in understanding social cues, recognising expectations and understanding intentions.
- **Perception:** Some individuals have limitations in perception. Processing information coming through the senses is one of the main affected features.
- Individuals with LD do not have physical features that can be distinguished from the outside.

Principles for Promoting Access to Cultural Heritage for Individuals with Learning Disability

Learning disability is a condition that leads to difficulties in skills such as listening, speaking, reading, writing and mathematical calculations. Therefore, adaptations to the content of artefacts and practices in the heritage site are crucial in ensuring qualified access to cultural heritage sites for individuals with learning disabilities. Under this heading, adaptations that can be made to provide access to cultural heritage for individuals with learning disabilities will be discussed.



Pre-Visit

The pre-visit is the stage where individuals receive information about cultural heritage and make plans for the cultural heritage site they intend to visit. Today, this stage is provided through cultural heritage social media accounts, websites, and brochures that serve as tourist information points. Individuals with learning disabilities may experience reading, writing, listening, speaking and mathematical calculation limitations. For this reason, there is a need for adaptations for these limitations in different environments (such as websites and social media platforms) where the individual accesses information about cultural heritage in the pre-visit process. These adaptations can be as follows according to the environments where pre-visit information is presented;

k. Principles for enhancing the accessibility of the cultural heritage site's website;

Website design should avoid distracting elements that cause too much cognitive load. For this reason, simple navigation tabs and avoiding overlapping layouts would be appropriate.

- Having the same design and functioning on the website's home page for all pages will increase accessibility.
- It is vital to contrast text and background with fonts and colours.
- The website's ability to adjust fonts, size, and background colours will increase accessibility for individuals with learning disabilities.
- Content that appeals to multiple modalities should be used on the website, not only through text. Therefore, audio recordings, videos, and visual components will increase accessibility.
- Simplified subtitles should be used in all videos on the website.
- Tags should be added to all non-textual content that provides access, such as buttons and buttons on the website.
- The website may include making a reservation or requesting information online. Creating feedback messages explaining why the individual made a mistake in these processes will increase accessibility.
- The website content must be presented under headings and subheadings (e.g., accessibility options, accessibility for individuals with learning disabilities).

- If there are places in the textual content that individuals should pay attention to, they should be emphasised with options such as different font sizes or colours.
- It is recommended that all website content should be written in a simple and understandable language.
- In exhibitions, presentations, or meetings in the cultural heritage site, it should be clearly stated which adaptations are available for individuals with learning disabilities.
- Including a downloadable and simple map of the cultural heritage site on the website will increase accessibility.
- Individuals with learning disabilities visiting the cultural heritage site can book services such as individual guides or digital guides/downloadable applications through the website.
- Individuals should be provided with information in different communication modalities, such as written, oral and video conferencing.

l. Principles for enhancing the accessibility of the cultural heritage site's social media content;

- The information presented in social media content should be written in simple and understandable language.
- It would be appropriate for social media posts to focus on one content per unit of time. Thus, information sharing can be provided without increasing the cognitive load.
- Using visual clues in the created content will ensure that the content is understood.
- Including simplified subtitles with voiceover in the content is essential for accessibility.

- It is recommended that you pay attention to the formation of contrast by choosing a plain background and using simple fonts to easily understand the information in the content.
- Principles for enhancing the accessibility of the cultural heritage site's brochures;
- Care should be taken to use simple and understandable language in the brochures, not term-intensive.
- Mentioning the services offered in the field of cultural heritage and the services not currently offered will help plan an accessible trip.
- To make the brochures easy to read, avoid using small fonts and complex typefaces. Easy-to-read fonts (such as sans-serif) and font sizes are recommended.
- Choosing a plain background in the brochure content and a contrasting background to ensure easy text reading will increase accessibility.

Arrival

- From the moment of entry, guides should enable individuals with learning disabilities to move easily in the field of cultural heritage. The guides should contain simple text on a legible background.
- Simple language should be preferred in all directions from the moment of entry to the cultural heritage site. Visual stimuli (such as symbols, pictograms, etc.) should accompany the texts on the signposts within the heritage site.
- It is essential to provide information for multiple communication modalities at the toll booth or information desk. Simple written language, communication boards

consisting of pictograms, and speech generators will enable communication with individuals.

- Providing a simple and understandable map of services such as exhibition areas, information points, restrooms, restaurants, or quiet spots in the cultural heritage site is vital for a qualified visit. At the same time, explaining the map to individuals will increase accessibility.
- Digital guides increase accessibility for individuals with learning disabilities and all individuals with special needs. Applications that present the content of cultural heritage sites with symbols and simplified language are important.
- Providing guide services in cultural heritage sites is an important element of increasing accessibility. Information about this service at toll booths and information points is essential.

During Visit

It is recommended that all cultural heritage sites use simplified language on their labels. This adaptation is important not only for individuals with learning disabilities but also for individuals affected by other disabilities. Therefore, presenting text-intensive content in a simple format by breaking it down into parts will increase accessibility.

- A simple background that contrasts with the text should be preferred for all written components (such as artefact labels, direction boards, etc.).
- Presenting exhibitions or artefacts in the cultural heritage site with simplified audio descriptions will increase accessibility.

- Presenting the cultural heritage site content with multiple communication modalities simultaneously will increase accessibility. At this point, digital guides address simplified content presentation and multiple communication modalities (such as text, sound, and pictograms).
- If video narration is used in exhibition areas, adding subtitles and sign language to the videos will increase accessibility.
- It is essential to adjust the ambient lighting for individuals with learning disabilities to access communication and written content.
- Tactile replicas offer a good learning opportunity for a better visit experience. 3D replicas will increase the accessibility of cultural heritage for individuals.

Post Visit

- It is crucial to ensure that individuals with learning disabilities leave comments on the visit book or comment cards. This will help them learn about the arrangements and the quality of existing adaptations.
- Preparing end-of-trip reminders about cultural heritage content will increase accessibility. Written or video content summarising the contents of the cultural heritage site in simple language is essential.

Tips for Communicating with Individuals with Intellectual Disabilities

- It is essential to be open to using more than one communication modality. Speech-generating systems, whether written, spoken, or through applications, are quite common.

- Using jargon or long words will negatively affect intelligibility. Try to keep sentences simple and in small chunks.
- Try to follow the individual's interest and lead in communication. Assuming that you understand the other person will negatively affect communication.
- Keep up with the other person's communication speed.
- When communicating, try to find a point that is not distracting. This will make it difficult for the individual to understand you.
- Avoid excessive gestures, facial expressions, and exaggerated tone of voice; instead, try to speak at a normal pace and tone.
- Do not be afraid to confirm what you have understood (e.g. "Are you looking for the second floor? Do I understand you correctly?").
- Be open to all communication. Focus not only on the other person's expressions but also on their gesture-mimic and body language.

PHYSICAL DISABILITY



What is Physical Disability?

Physical disability is defined as limitations in functioning, movement, and general development due to limitations in the skeleton, nervous system, muscles, and joints. It is used to describe a very general spectrum. Physical disability is generally characterised by problems in motor skills, access problems, language, and social development due to inadequate experience of the environment.

Factors Causing Physical Disability

Physical disability can occur due to different factors before, during and after birth. On the other hand, it may occur due to traumas and accidents that individuals experience during life.

Prenatal causes include exposure to radiation during pregnancy, maternal smoking and alcohol use, traumas experienced in the womb, blood incompatibility, febrile illnesses suffered by the mother during pregnancy, maternal age being too young or too old, unsuccessful pregnancy termination efforts, consanguineous marriage, maternal heart-lung diseases, early separation of the placenta.

Perinatal causes include trauma during labour due to complex delivery, premature or late delivery, multiple pregnancies, low birth weight, and jaundice.

Postnatal causes include febrile diseases, malnutrition, brain damage, loss of body parts and functions, unfavourable environmental conditions, malnutrition, musculoskeletal and nervous system diseases, sports injuries, violence, and drowning.

Classification and Prevalence of Physical Disability

Since physical disability is an umbrella concept, it covers many conditions and areas of disability. Physical disabilities can be classified in two ways: according to how they affect the individual and according to where they occur.

A triple classification is used according to the condition of the disability affecting the individual. Mild disability is the individual's ability to maintain his/her daily life independently or with little support. Moderate disability, on the other hand, is when the individual needs a little support in maintaining his/her daily life. Individuals with moderate disability may need to use assistive devices such as crutches and walkers. Individuals affected by severe disability have limited independent movement skills and need wheelchairs and human support for movement. Individuals with severe disabilities can be said to be fully dependent to meet their needs. These individuals may have some deformities that limit their motor functions.

The other classification of physical disability is the classification according to where the disability occurs. Accordingly, three groups can be mentioned: a) deficiencies related to the nervous system, b) deficiencies related to the musculoskeletal nervous system and c) chronic diseases.

Characteristics of Individuals with Physical Disabilities

Many conditions can be mentioned under the umbrella of physical disability. Although these disabilities are handled under the same roof, they have different characteristics. The main characteristics of the conditions seen under physical disability are explained by adhering to the classification made according to the place of occurrence;

Disabilities related to the nervous system

Cerebral palsy is one of the most common disabilities. It occurs due to a lesion in the brain depending on pre-, during and postnatal conditions. The effects of cerebral palsy on individuals can be listed as follows: movement and muscle coordination are negatively affected; gait and posture disorders can be seen; individuals with cerebral palsy may be accompanied by intellectual disability, and in cases where the central nervous system is affected, visual and hearing impairment can be seen.

Spina bifida can be defined in the most basic terms as an open or split spine. It occurs because the spine does not close at the beginning of pregnancy. Spina bifida can cause a sac-shaped herniation on the spinal cord, which can lead to paralysis in one or both legs. Since it is a deficiency affecting the spinal cord, paralysis, urinary and stool control problems and deformities in the organs of movement (such as the spine, feet, and knees) can be seen.

Multiple sclerosis, commonly known as MS, is common in young adults. It is a chronic and progressive type of disability. MS affects the brain and spinal cord. Symptoms can be mild or severe. The factors that cause MS are not known for certain, but environmental factors are emphasised. It can cause control problems over functions such as vision, speech and walking.

Musculoskeletal nervous system deficiencies;

Muscle diseases: Muscle diseases are progressive inherited diseases. The most common form is muscle wasting, which occurs only in men. Muscle diseases are characterised by progressive muscle weakness.

Congenital limb deficiencies: congenital hand, arm, foot, and leg are wholly or partially missing. It may be hereditary or may occur due to the mother's use of dangerous drugs in early pregnancy.

Amputations: It is the situation where the body integrity is disrupted by cutting the arm, hand or leg as a result of surgical operations. It may occur due to trauma and accidents, as well as pathological conditions and malignant tumours. Although it is mainly acquired, it may occur due to congenital causes.

Chronic diseases;

Epilepsy, also known as epilepsy, is a disease characterised by seizures that cause irregular and severe electrical discharges in the brain. It can cause temporary loss of consciousness, especially in recurrent seizures. Although the exact cause is unclear, it is thought to occur due to genetics and accidents.

Asthma is a lung disease that progresses mainly due to chronic inflammation in the airways. It progresses with hereditary transmission. This inability, which is characterised by attacks, causes breathing problems.

m. Principles for Promoting Access to Cultural Heritage for Individuals with Physical Disability

Physical disability can occur in a wide variety of ways. It can occur before birth due to genetic causes, or later in life due to accidents or traumas. Therefore, it is not possible to talk about a single typology when individuals with physical disabilities come to mind. Due to this heterogeneous structure of the

group, individuals with physical disabilities may also need adaptations related to other types of disabilities in access to cultural heritage. Although "adaptations for physical disabilities" in access to cultural heritage are presented under this heading, it should not be forgotten that individuals may have multiple needs.

Pre-Visit

The pre-visit is the stage where individuals receive information about cultural heritage and make plans for the cultural heritage site they intend to visit. Today, this stage is provided through social media accounts of cultural heritage, websites, and brochures that serve as tourist information points. All these mediums, where individuals with physical disabilities receive information before their visit, need to be adapted so that they can access all possible information and services that the cultural heritage site offers and does not currently offer.

n. Principles for enhancing the accessibility of the cultural heritage site's website;

- Writing all the content on the website content in a simple and understandable language,
- Understandable headings of the directions within the website; using headings that reflect the content,
- Adding videos about the services provided in the field of cultural heritage to the website,
- It should be clearly stated what adaptations are available for individuals with physical disabilities in exhibitions, presentations or meetings in the cultural heritage site,

- Including a downloadable and simple map of the cultural heritage site on the website,
- If services such as individual guides or wheelchairs/folding chairs are provided for individuals with physical disabilities in the cultural heritage site, make an appointment through the website,
- Individuals should receive written, verbal and face-to-face information through video conferencing applications.

o. Principles for enhancing the accessibility of the cultural heritage site's social media content;

- Writing the information presented in social media content in a simple and understandable language,
- Use of visual clues in the content created,
- Including simplified subtitles with voice-over in content,
- To understand the information in the content easily, a simple background should be preferred, and attention should be paid to contrast formation.

p. Principles for enhancing the accessibility of the cultural heritage site's brochures;

- Care should be taken to use simple and understandable language in brochures and not to use concept-intensive language,
- The services offered in the field of cultural heritage should be mentioned, as well as the services that are not currently offered,
- Avoiding the use of small font sizes and complex typefaces for easy reading of brochures,

- Choosing a plain background in the brochure content and a contrasting background to ensure easy reading of the text,

Arrival

- Parking areas for individuals with disabilities in the parking areas of cultural heritage sites are crucial for accessibility.
- Visual guides placed from the point of arrival to the cultural heritage site will enable individuals to access the site without spending extra energy.
- At the entrance to the cultural heritage site, regardless of whether individuals with physical disabilities use supportive vehicles or not, there should be wide ramps with a standard slope of 5 degrees following international standards, with handles or fears that individuals can comfortably support in movement.
- Although accessible designs (such as shared ramps) should be used for everyone according to the principle of equality, more than one solution can be used in cultural heritage. Especially in areas where stairs are used, the stairs should be made of non-slippery material, and the step spacing should be non-strenuous and open to the use of people without intense effort.
- Elevators are especially important for access to cultural heritage sites. They should be wide enough to allow easy entry and exit, especially for wheelchair or crutch users. The symbols used on the buttons should have explanations and simple instructions for ease of use.
- Walkways should have safety measures such as wheel stops for wheelchair users. In addition, accessibility

needs to have folding chairs on the walkways and handrails so people can easily take power.

- Providing services such as exhibition areas, information points, restrooms, restaurants, or quiet spots in the cultural heritage site with a simple and understandable map is important for a quality sightseeing experience. In addition, this adaptation will help individuals plan their desired trip in advance.
- The information points where individuals can get information upon arrival at the cultural heritage site should be at a height everyone can easily reach. In addition, solutions such as folding chairs where individuals can wait at these points should be created.
- It would be appropriate to present the information at the toll booth/ information points with more than one communication modality. At this point, information should be presented with adapted texts.
- When written communication is required, simple, short sentences should be preferred.
- Services such as exhibition areas, information points, restrooms, restaurants or quiet spots in the cultural heritage site should be presented on a simple and understandable map. These maps must be offered in large print or Braille format.
- Staff at toll booths, search points, or information points must receive awareness training. Being aware of individuals with physical disabilities' needs will greatly increase access to cultural heritage sites.
- It is essential to create print catalogues of the works in the exhibitions in the cultural heritage site. Providing

information about the content of the cultural heritage site in the most diverse form possible is a prerequisite for a qualified visit.

- Providing guide services upon request at appointments or information points before the visit would be appropriate. Such services should be determined before the visit, and the conditions under which the cultural heritage site is offered (such as part of the day, time of day, or number of people) should be communicated to visitors in advance.
- The entrance to the visit area or the restrooms within the visit area should have mobility space for wheelchair users. In addition, handles on the walls of the restrooms where individuals can get support would be appropriate.
- The doors must be easy to open and close throughout the visit area. They should also be a suitable width for wheelchair users' comfortable use.

During Visit

The best possible utilisation of the sightseeing spots, exhibitions or services offered in the cultural heritage site by individuals with physical disabilities depends on the adaptations to be made in the cultural heritage site. These adaptations can be exemplified as follows to meet the spectrum of individuals with physical disabilities;

- It is important that the walkways within the visitation area are designed to be safe and facilitate movement for individuals with physical disabilities. At this point, especially for wheelchair users, features such as wheel stops should be provided. The paths should also be equipped with markers and covered with non-slip

material for crutch users. In addition, services such as folding chairs or cane chairs should be provided for visitors who get tired quickly due to muscle diseases.

- Information individuals may need throughout the visit area should be clearly written on a simple background. Visual guides should accompany the text on the panels.
- Informative texts/labels and signs/warnings in the heritage site must be illuminated and positioned so that everyone can see.
- The heritage site should have audio versions of artefact descriptions/labels. The ability of individuals to take audio tours on their phones through headphones or applications significantly increases accessibility.
- An audio-narrated guide to the exhibitions in the heritage area is essential for an accessible travel experience.
- Tactile versions of the exhibitions in the heritage site are essential for a quality visit. The production of three-dimensional replicas of the artefacts in the exhibition is vital for ensuring a tactile visit.
- It would be appropriate for accessibility to provide digital tour services of the cultural heritage site through applications according to the level of physical disability. Having a digital tour service will increase accessibility, especially in areas where structural arrangements (such as ramps or stairs) cannot be made due to their historical importance.
- Washbasins that individuals can comfortably use should be placed in the visit area. They should be designed at

an appropriate height for both wheelchair users and users without disabilities.

- It would be appropriate to share the recommended routes with maps at the time of the visit so that individuals can benefit from the best possible sightseeing experience.

Post Visit

- It is important to enable individuals with physical disability to leave comments in the visit book or comment cards. Individuals can share their cultural heritage site experiences using more than one communication modality (writing boards or audio commentary). In this way, those in charge of the cultural heritage site can learn about the arrangements and the quality of the existing adaptations.
- Preparing end-of-trip reminders about cultural heritage content would be useful. It is vital to create content that summarises the contents of the cultural heritage site in simple language.

AUTISM SPECTRUM DISORDER



What is Autism Spectrum Disorder?

Autism Spectrum Disorder is a neurodevelopmental disorder characterised by deficits in social interaction and communication as well as limited, repetitive behavioural patterns. Although the effects vary for each individual, they are often observed in social interaction, communication and behaviour, and ASD can have lifelong effects.

Deficits in social communication and interaction skills: Social communication and interaction deficits seen in children with ASD can be listed as deficits in social-emotional responsiveness, deficits in non-verbal communication behaviours during social interaction, and deficits in initiating, maintaining and understanding relationships.

- *Deficits in social-emotional responsiveness skills:* In this symptom area, deficits in skills such as mutual talking, expressing and understanding emotions, or initiating social interaction.
- *Deficits in non-verbal communication behaviours*: Avoidance of eye contact, difficulties in using and understanding body language, gestures and mimics.
- *Deficiencies observed in initiating, maintaining and understanding relationships*: Limitations in appropriate behaviour in social environments, establishing/maintaining friendships and playing imaginary games.

Limited and repetitive behaviours, interests and activities: In order to talk about the presence of ASD, at least two of the following conditions are expected to be present.

- *Stereotypedor repetitive motor movements, speech or use of objects:* Examples of behaviours in this symptom area include repeatedly performing certain motor movements (e.g. waving hands as if flapping wings, turning around), saying certain words, sentences or expressions repeatedly, arranging or rotating objects one after the other without getting bored.



- *Insistence on sameness, strict adherence to routines or ritualised verbal or non-verbal behaviour:* Overreacting to changes in routines, preferring to play with the same toy every day, adhering to certain rituals at bedtime or at mealtimes (e.g. always sitting at the same place at the table, always eating with the same fork and spoon).
- *Intense, limited and non-varying interests:* Excessive interest in subjects that are not of interest to your peers or you and being interested only in that subject (e.g. aeroplanes, detergents), having very detailed knowledge about the subject of interest (e.g. length of the aeroplane, fuel volume, date of the first flight)
- *A very high or low level of response to sensory stimuli or an unusual interest in sensory aspects of the environment:* Overreacting to a smell or sound that is not noticed by others, being insensitive to pain, and showing excessive interest in light or moving objects.

In order to be diagnosed with LD, these symptoms should be observed in early childhood, should negatively affect the child's performance in functioning in daily life, and should not be associated with general developmental delay and disability.

DSM-5 stands for "Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition". This handbook, published by the American Psychiatric Association (APA), is a mental health diagnosis and classification guide widely used by mental health professionals worldwide.

DSM-5 includes the definition, classification and diagnostic criteria for various mental disorders. These criteria are used by psychiatrists, psychologists, social workers and other health professionals to assess and diagnose the mental state of patients.

In 2013, the American Psychiatric Association published the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5).

In the American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders, the levels of support for autism are stated as follows;

Level 3

"It requires very important support"

Severe deficits in verbal and non-verbal social communication skills result in severe impairments in functioning, very limited initiation of social interactions and minimal response to social overtures from others. For example, a person with intelligible

few-word speech who rarely initiates interactions and, when he or she does, only takes unconventional approaches to meet his or her needs and responds only to very direct social approaches.



Inflexibility in behaviour, extreme difficulty coping with change or other restricted/repetitive behaviour markedly interferes with functioning in all domains. Great distress/ difficulty changing focus or action.

Level 2

"Requires considerable support"

Marked deficits in verbal and non-verbal social communication skills; marked social impairments even when supports are available; limited initiation of social interactions and reduced or abnormal responses to social initiatives from others. For example, a person who speaks in simple sentences, whose interaction is limited to narrow special interests, and whose nonverbal communication is markedly awkward.

Behavioural inflexibility, difficulty coping with change, or other restricted/repetitive behaviours are frequent enough to be obvious to the casual observer and interfere with functioning in a variety of contexts. Distress and/or difficulty changing focus or action.

Level 1

"Support required"

Without supports, deficits in social communication result in visible impairments. Clear examples of difficulty initiating social interactions and atypical or unsuccessful responding to others' social initiatives. Interest in social interactions may appear to be diminished. For example, a person who can speak and communicate in complete sentences but whose back-and-forth conversations with others are unsuccessful and whose attempts to make friends are awkward and typically unsuccessful.



Lack of flexibility of behaviour results in a significant barrier to functioning in one or more contexts. Difficulty switching between activities. Organisation and planning problems prevent independence.

Causes of Autism Spectrum Disorder

Although the causes of ASD are still not fully understood, it is thought that many factors interact with each other and lead to the emergence of ASD.

Genetic Factors

Scientific studies conducted to determine the causes of ASD reveal that ASD may be largely genetic. The basis of genetic research has been studies conducted with siblings and twins. Studies show that the probability of ASD in one sibling is between 3% and 19%. This rate increases up to 30% in fraternal twins and up to 70%-90% in identical twins. Another situation associated with the genetic basis of ASD is that children diagnosed with ASD have various differences in the central nervous system and the structure and functioning of the brain, which is a part of this system. Research conducted in the last five years suggests that more than 1000 genes may be involved in the risk of ASD. However, it has not yet been found which gene or genes are responsible for ASD.

Environmental Factors

Environmental risk factors for ASD include advanced parental age, maternal infections or family history of immune-related diseases. Preterm birth (<32 weeks), low birth weight (<1500 g), and being small or large for gestational age have also been found

to be associated with ASD risk. It is stated that these factors do not have a cause and effect relationship and may be reactive, independent or contributing factors. Studies evaluating risk factors reported to be unrelated to ASD are also important and clearly show that ASD is unrelated to vaccines. Environmental factors can trigger changes in genes, and irregularities in genes can sensitise individuals to certain environmental risk factors.

Familial Factors

The only familial factor that has been shown to be associated with ASD is the age of the parents. Scientific studies examining the relationship between parental age and ASD show that advanced parental age increases the risk of having a child with ASD. For example, studies have shown that maternal age over 35 years and paternal age over 40 years increase the risk of ASD.

Prevalence and Incidence of Autism Spectrum Disorder

The prevalence of ASD varies depending on the diagnostic criteria used, the level of awareness, and social and cultural factors. In recent years, increased awareness of prevalence and the expansion of diagnostic criteria have led to more children being diagnosed with ASD. A report published in the USA in 2023 states that the prevalence of ASD among 8-year-old children is 1/36. The prevalence varies between countries and regions. It is stated that this difference in prevalence is due to changes in diagnostic criteria, access to health services, cultural factors and research methodologies. It is stated that ASD can be seen in all racial or ethnic groups or in groups with different social status and that there is no relation between ASD and family income, lifestyle

and education level. In the context of gender variable, it is stated that ASD is approximately four times more common in boys than in girls. In conclusion, the prevalence of ASD has increased over time due to factors such as changes in diagnostic criteria, increased awareness and education. International differences are observed and age at diagnosis and gender differences are among the important factors affecting these prevalence rates.

Characteristics of Individuals with Autism Spectrum Disorder

The degree to which development is affected and the developmental areas affected may differ in individuals with ASD. While only language may be affected in some individuals, social communication may be affected in others. In some cases, holistic developmental retardation, including motor development, may be observed.



Cognitive Development

Children with ASD generally show limitations in cognitive skills when compared to their typically developing peers. They are reported to perform at a lower level than their peers in academic skills such as reading, writing, reading comprehension and maths. While children with ASD have difficulty in understanding abstract ideas and social rules, they may perform better in verbal skills that require good rote memory. The rate of comorbidity with intellectual disability among individuals with ASD is quite high. However, a very small proportion of individuals with ASD may show superior abilities, but these abilities are usually not compatible with other skills.

Language and Speech Development

One of the areas where children with ASD have limitations is language and communication skills. Most of the time, speech either does not develop at all or is delayed. In pre-verbal skills such as joint attention, imitation and gesture, which are important elements of early language development, a performance behind peers can be observed. Difficulties may also be observed in initiating, maintaining and terminating spontaneous conversation. Speaking individuals with ASD may have problems with the speed, intonation and emphasis of speech. Another difference in language skills is echolalia. Echolalia is the repetition of words or sentences heard during speech or before in a way that is detached from the social context. One of the difficulties in language development is understanding grammar rules. Difficulties in understanding expressions with figurative meanings, difficulties in comprehending language, inability to understand simple

jokes, questions and commands may occur. There may also be limitations in the use of pronouns. The individual may address the other person as "I" instead of "you", use the words "you" or "he" for himself/herself, or show communication behaviour by using their own names.

Motor Development

Individuals with ASD may experience delays in gross and fine motor skills compared to their peers. Although there is no physically distinguishable difference, individuals with ASD may show lower performance than other individuals in motor skill areas such as fine motor precision, fine motor completion, and body coordination. These differences mainly consist of skills such as writing and limited area painting. Similarly, delays may be observed in sitting, crawling and walking skills; some differences may be observed in the use of large motor skills such as walking fast or slow, walking forward or tiptoeing.

Social Emotional Development

Problems in establishing social relationships and developing bonds are one of the prominent characteristics of individuals with ASD. Normally developing children acquire social skills spontaneously and through actions such as observation, modelling and imitation in interaction with the environment. However, individuals with ASD differ from their peers in areas of social interaction and skills such as eye contact, joint attention, imaginary and symbolic play, limited non-verbal communication skills, indifference to what other people do, and limited closeness to close family members. Due to their inability to acquire social skills on their own and their inadequacy in

social interaction, they may also have difficulty in fulfilling important communication functions such as establishing and maintaining communication skills, receiving information and making choices. In early childhood, there are limitations in interacting with peers and participating in play activities. Difficulties related to play skills such as avoiding group games, playing with the same toy for a long time, overreacting when the toy is taken away and not participating in games with rules negatively affect their social development. In this period, children with ASD generally prefer to stay alone and spend time with inanimate objects. Limitations in communicating with family members or other people.



Treatment Processes for Autism Spectrum Disorder

Currently, there is no known medical treatment for ASD. However, it is known that medications are used for psychiatric disorders such as anxiety and depression accompanying

ASD; behaviours such as irritability, anger control or aggression; and diagnoses such as epilepsy, attention deficit and hyperactivity disorder, and some of these medications are effective in reducing the targeted symptoms. Instead of using medical interventions alone, if they are used together with behavioural and educational interventions, they may be effective in improving language, communication and social skills, increasing positive behaviours and decreasing or completely eliminating problem behaviours in children diagnosed with ASD.

Art and Autism Specktrum Disorder

10 Types Of Artworks That Might Interest Many İndividuals With Autism

- Geometrical abstract art
- Fractal art
- Optical illusions
- Scientific illustrations (e.g., anatomical drawings, botanical sketches)
- Architectural blueprints and technical drawings
- Digital art with precise patterns
- Mandalas and symmetrical designs
- Hyper-realistic paintings
- Pointillism (art made from tiny dots)
- Mathematical visualizations (e.g., representations of complex equations)

10 Basic Principles To Consider When Writing About Artstory For Individual With Autism Audiences

- **Visual Precision:** Describe artworks with exact details, measurements, and proportions when possible.
- **Logical Structure:** Organize information in a clear, sequential manner, perhaps chronologically or by visual elements.
- **Factual Language:**Use concrete, literal language and avoid metaphors or idioms that might be confusing.
- **Sensory Details:** Include specific information about textures, colors, and other sensory aspects of the artwork.
- **Technical Information:**Provide details about the techniques, materials, and processes used to create the artwork.
- **Historical Context:** Offer precise dates and historical facts related to the artwork and artist.
- **Patterns and Systems:** Highlight any patterns, symmetry, or systematic elements in the artwork.
- **Clear Definitions:** Define any art-specific terms or jargon used in the description.
- **Objective Tone:** Focus on observable facts rather than subjective interpretations or emotional responses.
- **Visual Aids:** When possible, include diagrams or visual breakdowns of the artwork's composition to support the written description.

By following these principles, *you can create art stories* that are *engaging and accessible* to many autistic individuals, catering to *common autistic strengths such as attention to detail, pattern recognition*, and systematic thinking.

When Describing These Works To Individual With Autism Audiences, Consider Focusing On:

- The *specific techniques* used by the artist
- Any *underlying mathematical or geometric principles*
- The systematic approach to *composition or color use*
- *Historical context* and the artist's background
- How the work *relates to scientific or technological concepts*
- Any *patterns, symmetry, or repeating* elements in the work
- *The precise materials or tools* used in creation

Autistic Individuals Might Have a List of 10 Types of Historical Artworks, Places, or Museum Pieces that Could be Particularly Engaging:

- *Ancient astronomical instruments* (e.g., astrolabes, armillary spheres)
- *Mechanical clocks* and automata from the Renaissance period
- *Early maps and globes showcasing* evolving geographical knowled *Prehistoric cave paintings* ge
- with geometric patterns and animal representations *Ancient Egyptian* hieroglyphics and their decoding process
- *Medieval illuminated manuscripts* with intricate border designs
- *Historical scientific* instru Ancient mosaics with complex geometric patterns
- *Paleontological exhibits* featuring precisely assembled dinosaur skeletons
- *Early photographic equipment* and daguerreotypes ments (e.g., microscopes, telescopes)

- These items often combine *historical significance with elements of precision, patterns,* or scientific/technical interest, which might appeal to many autistic individuals.
- When describing these, focusing on factual *details, historical context, and the technical aspects* of their creation or use could be particularly engaging.

Pre-Visit

The pre-visit is the stage where individuals receive information about cultural heritage and make plans for the cultural heritage site they intend to visit. Today, this stage is provided through cultural heritage social media accounts, websites and brochures that serve as tourist information points. Autism spectrum disorder have limitations in social skills such as communication, everyday life and adaptations due to problems. Therefore, there is a need for adaptations for these limitations in the environments the individual reaches about cultural heritage in the previsit process.

These adaptations can be as follows according to the environments where pre-visit information is presented;

a. Principles for enhancing the accessibility of the cultural heritage site's website;

- Autism spectrum disorder need to access information, so all website content should be written in simple and understandable language. Short sentences and concept-free language should be used.
- Naming the buttons or links used to access website content is essential for accessibility.

- Having explanatory subtexts for non-textual content (such as tables, figures and pictures) on the website will increase comprehensibility. Nontextual content should be used with subtexts.
- The directions within the website must be clearly titled so that individuals can better access the content they desire. Titles that clearly reflect the content will prevent time loss and enable the individual to better plan his/her trip to the cultural heritage site.
- Adding videos about the services provided in the cultural heritage site to the website will increase comprehensibility. The videos must focus on a single topic regarding comprehensibility per unit of time. Adding simplified subtitles to all videos on the website will increase comprehensibility.
- In exhibitions, presentations, or meetings, the adaptations that are available for autism spectrum disorder should be indicated. All activities in the field of cultural heritage.
- The website must include a downloadable and simple map of the cultural heritage site. Explaining the services within the cultural heritage site on the adapted maps in simple language and with paired symbols will increase accessibility.
- Autism spectrum disorder may be negatively affected by stimuli such as noise, light or crowds. Sensory arrangements realised in the cultural heritage area should be shown on a map. This is important for autism spectrum disorder to plan their visits.
- If services such as individual guides are offered for autism spectrum disorder in cultural heritage sites, it is important

to make an appointment through the website. The website should provide clear and explicit information about the conditions under which these services are offered and how to benefit from them.

- Providing face-to-face information to individuals through written, verbal and video conferencing applications and making appointments for pretrip information will increase the accessibility of autism spectrum disorder to cultural heritage sites.

b. Principles for enhancing the accessibility of the cultural heritage site's social media content;

- The information presented in social media content should be written in simple and understandable language.
- Using visual clues (symbols, pictograms) in the created content is essential for understanding the content.
- Including simplified subtitles with voiceover in the content will support comprehensibility.
- For the information in the content to be easily understood, a simple background should be preferred, and attention should be paid to the formation of contrast to increase comprehensibility. The background chosen should be compatible not only with the text but also with the visual cues used.

3. Principles for enhancing the accessibility of the cultural heritage site's brochures;

- The brochures should use simple and understandable language and not conceptintensive language.

- It is important to mention the services offered in the cultural heritage area and the services not currently offered for a quality visit experience.
- To make the brochures easy to read, small font sizes and complex typefaces must be avoided. Textual content should be supported with visual clues (symbols, pictograms).
- Choosing a plain background in the brochure content and a contrasting background to ensure easy text reading will increase comprehensibility. The chosen background should be compatible not only with the text but also with the visual cues used.

Arrival

- Simple language should be preferred in all directions from the moment of entry to the cultural heritage site. Visual stimuli (such as symbols, pictograms, etc.) should accompany the texts on the signposts inside the heritage site.
- It is important to provide information for multiple communication modalities at the toll booth or information desk. Simple written language, communication boards consisting of pictograms, and speech generators will enable communication with individuals.
- Providing a simple and understandable map of services such as exhibition areas, information points, restrooms, restaurants, or quiet spots in the cultural heritage area is essential for a qualified visit. Explaining the map to individuals will also increase accessibility.

- A sensory bag should be provided before the visit, especially for individuals with sensory sensitivities. Materials such as noise-canceling headphones and eye patches should be provided to protect against sensory stimuli such as smell, light, sound, and noise.
- Providing alternative communication systems that individuals can use during the visit is crucial. Communication boards created with pictograms or symbols should be presented at this point.
- Digital guides increase accessibility for autism spectrum disorder as well as for all individuals with special needs. It is important to provide applications that present the content of cultural heritage sites with symbols and simplified language.
- Providing guide services in cultural heritage sites is an important element of increasing accessibility. Information about this service should be provided at toll booths and information points.

During Visit

- The exhibitions or areas in the heritage site must be organized according to individuals' sensory sensitivities. Heavy odors, loud noises, and bright lights can trigger autism spectrum disorder.
- Sometimes, background sounds or lighting may be used to present artefacts in exhibition areas. In these cases, individuals should be informed before entering the area. In addition, it would be appropriate to mark the rooms with such stimuli on the maps provided at the box office or information points.

- Autism spectrum disorder may be affected by sensory stimuli despite the adaptations made. In these cases, it would be advantageous to have sensory rooms in the heritage area for the individual to regulate himself/herself. Sensory rooms can be defined as rooms where the room lighting can change, different types of tactile materials are available, and where the individual and the caregiver, if any, can sit and calm down.
- The information provided to individuals in the visitation area should be independent of a single communication modality. Simultaneously, using symbols and pictograms in all directions, warnings, or informative content will increase accessibility.
- Symbols and pictograms used in heritage sites should be clear and consistent.
- Information about heritage sites should be presented through multiple communication modalities. Simplified audio guides or digital guides are handy In particular, the use of digital tools serves to produce content on various levels simultaneously.
- Informative content on heritage sites should be written in as simple a language as possible. Simplifying the language, free of concepts, makes the content accessible to everyone.
- Language used in heritage content should be in easy-to-understand fonts (such as sans serif) and have a simple background.
- The design used in the heritage area should provide the individual with spontaneous clues for use. In particular, tactile pathways and symbolic guides will facilitate the access of individuals with intellectual disabilities.

- The presence of tactile learning opportunities in the exhibition areas will increase accessibility. Interacting with three-dimensional copies of the artifacts offers important educational opportunities for autism spectrum disorder. Therefore, it is recommended that threedimensional tactile replicas of the works be created in the exhibition area.
- One important condition of accessibility is that the staff should be accessible in the exhibition areas. Here, it is important for the staff to use more than one communication modality. Alternative communication systems are good solutions at this point. Communication boards created with pictograms or symbols will increase accessibility.

Post-Visit

- It is very important that the cultural heritage site's experience is instructive for autism spectrum disorder. For this reason, it would be useful to prepare end-of-trip reminders about the site's content. These can be brochures or booklets summarising the site's contents in simple language.
- It is important for accessibility that autism spectrum disorder can leave comments in the visit book or comment cards. Thus, it will be possible for the staff to learn about the arrangements and the quality of the existing adaptations.
- For autism spectrum disorder to share their experiences in cultural heritage sites, it is important to use more than one communication modality. At this point, the use of written, audio, and speech systems will increase accessibility.

Tips for Communicating Autism Spectrum Disorder

One prerequisite for cultural heritage sites to be accessible is communication. As with all types of disability, this is extremely important for autism spectrum disorder. Staff knowledgeable about intellectual disabilities and the communication characteristics of people with intellectual disabilities will be able to provide a better experience for visitors.

- When communicating with autism spectrum disorder, be in a calm environment. Distractions in the environment will negatively affect communication.
- p. It is essential to use simple language during communication. Using a language free of concepts and communicating with short sentences will increase comprehensibility.
- It is important to use physical and visual clues. In addition, making summaries from time to time will help individuals to understand the content more easily.
- Communication is mutual and possible with the participation of all stakeholders. Therefore, more than one communication modality should be offered to the individual to respond. At this point, the use of communication boards, speechgenerating systems, or simple written language will be useful.
- Refrain from assuming that everything you say is understood. Instead, check whether you are understood.
- The use of gestures can increase understandability.
- Allow the individual to take communicative cues. Make eye contact with the individual, and make sure that the

individual can see your mouth and hand movements while you are speaking.

- It is important to repeat instructions and warnings more than once, especially when guiding autism spectrum disorder. The warnings you gave at the beginning of the tour may be forgotten.
- It is important to give time to autism spectrum disorder during communication. Giving the individual time to make choices, to make sense of what you say or to construct their expressions will strengthen communication.

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About Authors

Prof. Dr. İbrahim Halil DİKEN, PhD
Anadolu University | ihdiken[at]anadolu.edu.tr
ORCID: 0000-0002-5761-2900

Dr. Diken received his bachelor's degree in Elementary Education (1994) and his master's degree in Special Education (1998) from Abant Izzet Baysal University. From 1994 to 1998, he worked as a teacher in general and special education settings. In 1999, he was awarded a Ministry of National Education scholarship (Law No. 1416) and began his PhD in Special Education (Early Childhood Intervention) at Arizona State University, completing it in 2004. During his studies, he worked for four years at ASU's Infant Child Research Programs, providing early intervention services to young children with developmental delays and disabilities and supporting related research projects. Returning to Türkiye in 2004, Dr. Diken joined Anadolu University's Department of Special Education, becoming Assistant Professor in 2004, Associate Professor in 2008, and Professor in 2013. He directed the Research Institute for Individuals with Disabilities from 2014 to 2025 and has led numerous national and international projects. He currently teaches in the Department of Special Education and, since September 2025, has served as Acting Dean of the Faculty of Education.

PhD. Ümit Savaş TAŞKESEN
Necmettin Erbakan University - SOBE Foundation
ustaskesen[at]erbakan.edu.tr | ORCID: 0000-0003-3214-6170

Dr. Taşkesen graduated from the Department of Primary Education at the Faculty of Education, Selçuk University. He worked as a primary school teacher for eight years under the Ministry of National Education. Subsequently, he worked with gifted and talented students at a Science and Art Center (BİLSEM). He is a member of the Writers Union of Türkiye and authors short stories, essays, travelogues, and literary criticism. Between 2010 and 2015, he served in London as a teacher of Turkish Language and Culture attached to the Education Counsellorship. Following his return to Türkiye in 2015, he commenced his doctoral studies in Special Education, completing his Ph.D. in 2022 with a dissertation titled "Teaching Intelligence Games to Children with Autism." Since 2017, he has been a faculty member in the Department of Special Education at the Ahmet Keleşoğlu Faculty of Education, Necmettin Erbakan University. He also serves as an academic advisor for the SOBE Foundation. His research focuses on fields related to individuals with autism. He is the author of the book Otizmsizler için Otizm (Autism for Non-Autistics). His academic work includes research on art interventions for individuals with autism, as well as the use of technology in autism education.

Dr. Tezcan ÇAVUŞOĞLU, PhD
Kafkas University | tezcan.cavusoglu[at]kafkas.edu.tr
ORCID: 0000-0002-2225-6651

Dr. Çavuşoğlu is a researcher and academic specializing in early childhood special education, particularly for children with hearing loss and developmental disabilities. Currently serving in the Department of Special Education at Kafkas University, Dr. Çavuşoğlu completed his bachelor's, master's, and doctoral degrees in the fields of Education for the Hearing Impaired and Early Childhood Special Education at the Department of Special Education at Anadolu University. Dr. Çavuşoğlu participates in national and international scientific conferences, projects, and working groups in the fields of early childhood special education, inclusion, and inclusive disaster and emergency response, both as an organizational member and as a researcher. Additionally, Dr. Çavuşoğlu works to raise awareness and to advance policy development regarding special education practices in early childhood through his roles in national and international organizations. In addition to his research, Dr. Çavuşoğlu conducts training and consulting for civil society organizations (such as family associations) on early childhood special education.

Dr. Uğur Onur GÜNDEN, PhD
Anadolu University | uogunden[at]anadolu.edu.tr
ORCID: 0000-0001-7733-391X

Uğur Onur Günden is an academic and researcher specializing in early intervention and autism spectrum disorder (ASD). He serves as a research assistant at the Research Institute for Individuals with Disabilities at Anadolu University, focusing on developmental screening in early childhood, parent-mediated intervention programs, and assessment processes. Currently pursuing his PhD in special education at Anadolu University, Günden aims to translate scientific findings into practical guidance for families and professionals. He has taken organizational roles in national and international conferences and actively participates in scientific associations and projects. As a member of the Early Childhood Intervention Association (EÇOMDER), he contributes to efforts that promote awareness of early intervention. His scholarly work includes peer-reviewed publications, book chapters, and project involvement at both national and international levels. Beyond research, he produces educational content on social media, provides consultancy to institutions, and supports policy development in early childhood and special education.

Şerife İLKAYA
SOBE Foundation | serife.ilkaya[at]sobe.org.tr
ORCID: 0009-0006-5792-2067

She was born in Konya in 1989. She graduated from the Department of Preschool Education at Anadolu University in 2013 and completed a non-thesis master's degree in Special Education at Necmettin Erbakan University in 2015. She began her professional career as a preschool teacher at Deha Special Education and Rehabilitation Center between 2008 and 2012. From 2013 to 2016, she worked as a special education teacher and education coordinator at Cemre Special Education and Rehabilitation Center. Between 2017 and 2019, she served as a special education teacher at the SOBE Foundation, and from 2019 to 2022, she worked as a supervisor. Since 2023, She has been serving as the Research and Development Coordinator at the SOBE Foundation. She hold certification as an Applied Behavior Analysis (ABA) practitioner. She has presented various oral and poster presentations at national and international conferences on topics including scripted play instruction, graduated guidance and prompt fading procedures, video modeling, the effectiveness of behavioral interventions, teaching safety and daily living skills, and the SOBEP digital education system.

Cemre GÜREL
SOBE Foundation | cemregurel4[at]gmail.com
ORCID: 0000-0001-6785-069X

She was born on July 26, 1997, in Konya. She completed my undergraduate education in the Preschool Teaching program at Sabahattin Zaim University. After graduation, she completed a non-thesis master's program in Autism Spectrum Disorder in Early Childhood at Anadolu University, developing my expertise in the field. She began her professional career in 2019 by working in the field of special education at SOBE, where she gained intensive and systematic field experience with individuals with autism spectrum disorder. In 2020, she obtained an ABA practitioner certificate from Prof. Dr.



This book is a valuable scientific product of the iNCLUSION Project (2023-2-TR01-KA220-HED-000177708), which brought together professionals and researchers from a variety of sectors and environments across Europe. Through interdisciplinary collaboration and the sharing of expertise, the project developed innovative approaches to accessibility in cultural heritage. Academics, cultural heritage practitioners, disability specialists and policymakers worked together to develop inclusive, evidence-based solutions. By combining research, field experience and international cooperation, the project transformed knowledge into practical guidance. This principle and guidebook reflects that collective effort and shared commitment. It is a testament to collaboration in the pursuit of a more accessible and inclusive cultural future.

TÜBA

TÜRKİYE BİLİMLER AKADEMİSİ
TURKISH ACADEMY OF SCIENCES
Vedat Dalokay Caddesi No: 112, Çankaya 06670 Ankara
Tel: +90 (312) 442 29 03 Fax: +90 (312) 442 72 36

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www.tuba.gov.tr faceebook.com/TUBAakademi twitter.com/TUBAakademi youtube.com/TurkiyeBilimlerAkademisi