

## Conference Paper

# Exhibition Environment for Visitors with Visual Impairments

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## Abstract

This article discusses the organization of the exhibition environment for visually impaired visitors. We present a number of examples of modern displays designed for people with visual impairments. Among them are the exhibitions *Touch the Prado*, *See the Invisible*, *Touch the Uffizi*, the project *The Language of Sculptures in Braille*, as well as other exhibitions – pioneers among the exhibitions for visually impaired visitors. We describe the main types of tactile exhibits, as well as the key required to provide information and adopt the space for people with visual impairments in public buildings. Besides adapting the premises, museums should also have well-designed programs for all categories of visitors to specialized exhibitions. The main goal of museums that are working on exhibitions for people with sight disabilities should be creating atmosphere that immerses them in the world of art and also helps them to get maximum experience of learning about the exhibits.

**Keywords:** exhibition, visually impaired people, adaptation, museum, art, tactility, inclusivity, touch, information, accessibility, perception.

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## 1. Introduction

Visually impaired people are the members of our community and they have special needs and requirements. WHO reports that there are about 39 million blind people all around the world and 246 million people with visual disabilities. About 22% of all people with visual impairments are young people of working age, so practically every fifth person is either blind or visually impaired. Problems with sight can be not only congenital but also acquired due to different reasons. Misunderstandings between people with sharp sight and visually impaired people occur all the time. Visually impaired people learn about the beauty of this world through touch, sound and smell.

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## 2. Materials and Methods

“Any person can learn about art” – this is what most people think; however, is this statement really true? Unfortunately, the masterpieces of visual arts are not equally available to all people, and blind or visually impaired visitors are the first ones to fall within this category. Improving the quality of life for people with sight disabilities and bringing the world of art to them has been the major focus of the *Accessible Environment* program. The main goal of the *Accessible Environment* program is adjusting the space – environment, including places of mass public gatherings – for different categories of people with disabilities. Today exhibitions for visually impaired people are held regularly and they attract more and more attention from the public. This kind of exhibitions are not new, because exhibitions and exponents for visually impaired visitors have been on display in museums for years; however, they started gaining fame and popularity only recently. The exhibition environment for people with visual impairments includes tactile floor-level signs, tactile information plates and mnemonic diagrams, as well as different tactile exponents. Tactile signs and information plates are designed to provide for the free movement of blind and visually impaired museum visitors around the exhibition and also to help them obtain additional information. Tactile exhibits immerse the visitors into the world of art, stimulate their imagination by helping people with sight disabilities to extend their understanding of the world around them, its beauty and history.

Among the museums that pioneered exhibitions for people with visual impairments are Moscow Darwin Museum, which began organizing guided tours for blind students back in the mid-1920s, as well as Athens Museum for the Blind that was founded in 1984, Museo Tiflológico in Madrid in 1992 and famous Louvre tactile gallery in 1995. These museums laid foundations for launching specialized exhibitions for people with visual impairments. Today increasingly more museums aspire to open their doors to visitors with special needs every year. Few tactile exhibits are originals, because most of museum objects are over 100 years old, and constant touching could cause damage and destroy the works of art. In order to provide visitors with the free access to art objects, they are typically reproduced in copies, with the main goal: to give visitors an opportunity to see art through touch.

## 3. Discussion

Exhibitions for people with visual impairment can include one or several different tactile exponents. Specialized exhibitions include the following types of exponents:

1. Three-dimensional relief prints of images, i.e. reliefs made with special paints, which after drying turn into a solid polymer durable enough for touching;
2. Relief painting (bas-relief) presents sculptural 3D reliefs made of gypsum or other materials that feature a half-raise image;
3. Sculpture, which is the main type of tactile exponents and can be made of gypsum, metal, marble, granite, polymer or other materials, helping to get a feeling of the artwork's full size and scale;
4. Weapons and jewelry are rare examples of tactile exponents, because they have historical value;
5. Different thematic objects made of various materials with a specific purpose corresponding to the theme of exhibition.

The famous contemporary exhibitions for people with visual impairments were *Touching the Prado* and *Seeing the Invisible* with tactile paintings produced using the 3D printing technology. *Touching the Prado* exhibition in the Prado museum in Madrid provided visually impaired visitors with an opportunity to discover their own intellectual and sensory image of the artworks shown at the exhibition.

This exhibition was located in the side gallery next to a special room, where Leonardo da Vinci's three-dimensional copy of Mona Lisa was placed as the main exhibit of *Touching the Prado* exhibition. In total, the exhibition featured six three-dimensional copies of famous paintings that represented the jewels of the Prado Museum collection. They are *Noli me tangere* by Antonio da Correggio (1525), *Apollo in the Forge of Vulcan* by Diego Rodríguez de Silva y Velázquez (1630), *Umbrella* by Francisco Goya (1777), *La Gioconda* by Leonardo da Vinci (1503-1519), *The Nobleman with his Hand on his Chest* by El Greco (1580) and *Still life with Sweets and Crystal Recipients* by Juan van der Hamen y León (1627). The creators of this unique exhibition had to put in a tremendous amount of hard work to present this visible beauty for visitors with visual impairments. A technology of relief printing developed by Estudios Durero, a publishing house in Bilbao (Spain), was used while working on this exhibition in Prado. At first, when the production of copies started, the photo of the painting in high resolution was made; after that, the texture was chosen and special features of the image deemed important for people with visual impairments to grasp the story were developed. Afterwards, the image was printed using special ink and the object gained required volume through these chemical processes. The cost of this canvas was US \$6680. [1] The exhibition was accompanied by audio guide recorded specifically for these exponents, which included

not only information about artists and paintings but provide special explanations and pauses that gave the visitors time to study the canvas with his hands.

The National exhibition *To See the Unseen* also provided visually impaired visitors with an opportunity to appreciate the works of fine arts. The organizers of exhibition decided to organize the exhibition not just in Moscow but in other cities across Russia as well. This exhibition of tactile paintings for blind people is a first mobile exhibition in Russia, which exponents were created using a unique technology of printing relief 3D-paintings developed by Estudios Durero. The experience of *Touching the Prado* exhibition and the collaboration with Estudios Durero company allowed the organizers to fully represent the works of art for visually impaired Russian visitors. Relief copies of the world masterpieces from the Pushkin Museum of Fine Arts collection were presented at the exhibition. The audio guide for the exhibition was recorded by famous Russian actor and film director Evgeny Mironov.

Six masterpieces from the collection of the Pushkin State Museum of Fine Arts were chosen for the exhibition: *The Annunciation* (1495–1498) by Sandro Botticelli, *Madonna with a Baby* (about 1520) by Lucas Cranach the Elder, *Still-life with Art Attributes* (about 1724–1728) by Jean-Baptiste-Siméon Chardin, *Jaguar Attacking a Horse* (1910) by Henri Rousseau, *Are You Jealous?* (1892) by Paul Gauguin and *Old Jew and a Boy* (1903) by Pablo Picasso. Tactile paintings were created based on these artworks using the relief print technology. [2]

Another popular Russian project was *The Language of Sculpture Braille-Style* that organized five exhibitions for people with visual impairments in Russia. They were shown mainly in the new building of Tretyakov Gallery in Krymsky Val. The main goal of this project, besides the organization of exhibition space, was the development of educational program, including changing topical exhibitions and interactive program dedicated mainly to the art of sculpture.

The first exhibition of the project was *Notes in the Margins* by a Moscow artist Alexander Smirnov-Panfilov. The exhibition presented 3D compositions demonstrating the golden age of Spanish art, and a series of descriptive portraits of such artists as Van Gogh, Toulouse-Lautrec and Chagall. All sculptures were accompanied by explications and comments in Braille script and also with audio recordings and interview of the author. Tactile exhibition *Collected Works. The World of Literature of Moscow Sculptors* became the most popular and famous among all. It included dozens of literary exhibits that enabled visually impaired visitors of the exhibition to touch statues of great writers and sculptural illustrations of characters from their literary works. A small composition consisting of three sculpture of Hans Christian Andersen was presented

at the exhibition. Adjacent to the Andersen statues was a figure of a princess and a pea. Also, there was a sculpture of grandfather Mazai with his boat full of curious hares. Another adjacent sculpture showed Alexander Grin in a raincoat and a hat with his arm stretched out. There were wooden statues of poets Esenin and Kluyev impersonating village folk. In the center of this exhibition, on a large table with impression there was a Braille script: on the left – standard letters, on the right – their dotted meanings.

An unusual exhibition *Touching Uffizi* in Florence (Italy) gives the visually impaired museum visitors opportunity to see with their hands some masterpieces from collections of the world-renowned museum. The most distinctive feature of this exhibition, compared to other world museums, is the use of originals artworks and copies or reproductions. The attention of the visitors with sight disabilities is drawn in by 16 original sculptures from the Medici collection that can be studied with hands – for this purpose visitors with visual impairments are provided with the special gloves. The majority of artworks located along their way are antique marble statues, bas relief and sarcophagus that are exhibited in the corridors and some halls of Uffizi Gallery. The exhibits have explications with descriptions both in standard text and in Braille script. [5] The development of production and technologies have helped to increase the number of exhibits for people with visual impairments, because their production became much easier, which resulted in the amount of museum and exhibitions specialized in introducing the blind and visually impaired people to art. The organization of exhibitions for people with visual impairments requires more than preparation of tactile exhibits: it is important to prepare the museum premises for comfortable movement of people with sight disabilities around the museum.

The main elements used for adjusting the environment to people with visual impairments are tactile signs and explications. They should be used not only in the museums but everywhere helping people with disabilities to move freely in their environment. New materials and production technologies have broadened the spectrum of navigation element data, making it possible to place the signs not just in the streets but also in the public buildings. All tactile signs, regardless of their location, must meet the state standard GOST R 52875-2007. Unfortunately, sometimes the organizers of exhibitions disregard the installation of tactile signs. The main ways of presenting information for people with sight disabilities are:

1. Audio guide: a device for reproducing a recording used for independent introduction to the museum exhibition or location;

2. Explications: flat boards of different sizes and formats that include important information visually impaired people written in Braille script. These elements are located in the easily accessed places.
3. Signs with special relief contrasting elements mark places on the floor or on the stairs and serve as a navigation prompt for visually impaired visitors moving around the museum. If necessary, additional navigation elements are used and attached to the railings.
4. Mnemonic scheme: a flat board placed in an easily accessible spot that contains information on the exhibition plan and the space around it with additional information, all in Braille script.
5. Tour guides are one of the main sources of information about exhibition. They should undergo special training preparing them for communication with any categories of museum visitors.

## 4. Conclusions

Unfortunately, today there is no one proven and established method of creating exhibition space for people with visual impairments. Organizers of such exhibitions adapt exhibition halls and general premises based on their own ideas and knowledge, as well as on opportunities and understanding of the demands of people with visual impairments. Ideally, exhibition space in the museums should be equipped for a free movement of blind and visually impaired people and other categories of visitors with limited mobility around the museum in general and the exhibition in particular. Besides adapting the premises, museums should also have well-designed programs for all categories of visitors to specialized exhibitions. The main goal of museums that are working on exhibitions for people with visual impairments should be creating atmosphere that immerses them in the world of art and also helps them to get maximum experience of learning about the exhibits. This contact takes place by learning through tactile experience and acquiring additional information from the audio guide and texts on explications written in Braille script. At the same time, comfortable walking around the museum halls depends on professional organization of exhibition space through tactile signs and other navigational elements.

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