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## PUBLIC LIBRARIES AS AN INFORMATIONAL SPACE FOR INDIVIDUALS WITH BLINDNESS AND VISUAL IMPAIRMENT. MATERIAL AND IMMATERIAL ARTIFACTS OF ACCESS



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include supporting people with disabilities, particularly visual impairments, in the areas of education, social integration, and access to cultural goods, as well as visual education and the use of technology in education and rehabilitation. She is the author of over 40 scientific and popular science publications in the field of typhlopedagogy.

**KEYWORDS:** Access artifacts. Inclusive libraries. Informational inclusion. Blind and visually impaired individuals.

**ABSTRACT: Thesis/Objective** – The main aim of the paper is to determine the material and immaterial artifacts of access for blind and visually impaired indi-

viduals to public libraries as informational spaces, and to present the historical and legal context of library services for these groups in Poland. **Research Methods** – Analysis of existing data (legal acts, statistical data), literature review, and an inventory of implementation practices. **Results** – Material artifacts of access for blind and visually impaired individuals include the adaptation of physical space to the needs of people with visual impairments (tactile plans, tactile markings, spatial markers – beacons, high-contrast markings) and the collection of library materials in accessible formats. Technological advancements significantly impact accessibility conditions: there is a preference for creating materials in digital formats, equipping libraries with assistive technologies, and utilizing spatial markers (beacons, NFC, and QR codes for orientation information transfer). Immaterial artifacts of access include the competencies of librarians in working with visually impaired users, which can be enhanced through governmental and commercial programs, as well as diverse forms of user service. These enable public libraries to build an inclusive operational model, legitimizing the “universal right to access resources” and “universal accessibility” for all readers, including those with visual impairments, as stipulated in the Library Act.

## INTRODUCTION

In recent years, public libraries have been facing the challenge of including people with disabilities among the active readers of their facilities. In order to become an information space for blind and visually impaired people, who at the level of sensory perception function differently from other groups of users of books and library materials, they must meet a number of conditions. This article addresses the issue of material and immaterial artifacts of access to libraries and their resources for blind and visually impaired people. In the beginning section the historical and legal context of library services for people with visual disabilities in Poland is also presented, which proves that although this group of users has always been in the field of view of legislators, for over half a century public libraries were practically excluded from the obligation to provide services to them. Only recent years have brought significant changes. Socio-cultural conditions contributed to this: the normalization paradigm and the perception of disability from the point of view of human rights (which results in accessibility requirements as necessary conditions for the realization of the rights of every human being). The second key change is technological development, thanks to which library materials for visually impaired recipients are not limited to Braille formats, making it easier for public institutions to build resources in digital form and equip libraries with technologies supporting reading materials that have not been specifically adapted to the needs of blind and visually impaired people, as well as enabling effective use of other materials. At the legal level, the following are of key importance for these changes: The Act on ensuring accessibility

for persons with special needs of July 19, 2019 (Journal of Laws of 2022, item 2240, of 2024, item 731), in accordance with which public entities are obliged to meet minimum requirements to ensure accessibility in terms of architectural accessibility, digital accessibility, information and communication accessibility, and the Act on digital accessibility of websites and mobile applications of public entities of April 4, 2019, as amended resulting from the amendment of 2023 (Journal of Laws of 2023, item 1440).

## THE HISTORICAL AND LEGAL CONTEXT OF LIBRARY SERVICES FOR BLIND AND VISUALLY IMPAIRED PEOPLE

According to statistical data, there are 7,638 public libraries and branches in Poland, with a total book collection of 124.4 million volumes. In 2022, 5.1 million readers borrowed books (*Public libraries in 2022, Central Statistical Office 2023*). According to the National Library's report, in 2023 14% percent of surveyed readers<sup>1</sup> obtained books through loans (Zasycka, Chymkowski, Koryś, 2024, p. 27).

In accordance with Polish legislation (Act of June 27, 1997 on libraries, as amended, Journal of Laws of 2022, item 2393): "libraries and their collections constitute national wealth and serve to preserve the national heritage", they are to "organize and provide access to resources of Polish and world scientific and cultural achievements", and "the right to use libraries is universal". The basic tasks of libraries are: collecting, developing, storing and protecting library materials, serving users, primarily providing access to collections and conducting information activities, in particular providing information about their own collections, those of other libraries, museums and scientific information centers, as well as cooperating with archives in this respect. Moreover, libraries may conduct bibliographic, documentation, scientific and research, publishing, educational, popularization and instructional-methodological activities. As for public libraries, their main goal is to meet the educational, cultural and information needs of the general public and to participate in the dissemination of knowledge and culture. Library materials are, in particular, documents containing a recorded expression of human thought, intended for dissemination, regardless of the physical medium and method of recording the content, and in particular: graphic documents (written, cartographic, iconographic and musical), sound, visual, audiovisual and electronic documents.

Despite emphasizing the universal right to use library resources and the fact that libraries meet the needs of the general public, the inclusiveness of libraries and their universal availability were not secured. The above-mentioned act includes a separate chapter 9 called "Service for special user

<sup>1</sup> N=2012, nationwide representative sample.

groups". Two articles specify the method of serving blind people (Article 25 – it is indicated that the Central Library for the Blind provides library services for the blind and coordinates the activities of related libraries and institutions) and other special user groups (Article 26 – the possibility of creating libraries is indicated, among others in medical facilities, social welfare homes, prisons, district educational centers, correctional facilities and shelters for minors). In the latter case, it was also indicated that separate regulations would determine the manner of cooperation of public libraries in providing services to special groups of recipients.

Therefore, it can be said that in order to ensure access to reading resources for people with visual difficulties, public libraries have been literally "exempted" from activities related to providing services to people with visual disabilities. This happened primarily because at that time the basic format of books for the blind were Braille materials, and from the 1960s also talking books (recorded first on reels and then on audio cassettes) – materials that required special processing. Since the 1950s, the Polish Association for the Blind has determined the organizational structure, range, scope and dynamism of the publishing, library, and reading activities of blind people (Czerwińska, 1999, p. 65). Interestingly, although the above-mentioned act mentions the Central Library for the Blind, an entity with such a proper name has never existed. In 1952, the Central Library of the Polish Association for the Blind (BC PZN) was established and operated until 2012 under the auspices of that association. In 2013, by order of the Minister of Labor and Social Policy, it was incorporated into the Main Library of Labor and Social Security as the Department of Collections for the Blind (DZdN), continuing the activities of BC PZN and undertaking further development initiatives. According to the statute of the Main Library of Labor and Social Security (annex to Order No. 28 of the Minister of Labor and Social Policy of September 25, 2013), the following objectives of DZdN GBPiZS were formulated: the aim of the library is to carry out library and information activities and provide reading to blind and visually impaired people in the scientific, specialized, and widely available aspects. The library is to collect, develop, store and make available universal library materials, including fiction, in forms available to blind and visually impaired people, as well as informative and scientific materials on visual disabilities.

It should be noted that there is a discrepancy between the provisions of the Libraries Act and the implementing acts and documents regulating the organization of the library – BC PZN and then DZdN GBPiZS provide library services to visually impaired people, but do not coordinate the activities of related libraries and institutions. Although the Libraries Act has been amended several times (2012, 2018, 2019, 2022), Chapter 9 has not been modified.

School libraries at special educational centers for blind and visually impaired students were also specialized institutions in the field of editing, librarianship and Braille reading – here a special place belongs to the Braille Department of the Society for the Care of the Blind in Łaski. A separate group of institutions included specialized libraries, established by the Reading Section for the Sick and Disabled (since 1981, previously the Section of Hospital Libraries in the Polish Librarians' Association), such as the Reading Center for the Sick and Disabled at the Provincial Public Library – Copernicus Library in Toruń, and many others – they provided comprehensive services to people with disabilities, and also offered alternative collections, including Braille and talking books. (Kruszewski, 2009; Fedorowicz, 2010).

Another important legal act that separated the area of library services for the blind is the Act of November 23, 2012, Postal Law (Journal of Laws of 2023, item 1640, of 2024, item 467, repealing the Act of June 12 2003 – Postal Law, Journal of Laws of 2011, No. 171, item 1016), which defines the concept of “mail for the blind” in order to exempt it from postal fees. In order to indicate to which entities such a shipment could be sent free of charge, it was necessary to specify a list of such libraries and organizations by regulation. A “parcel for the blind” is correspondence or print, weighing up to 7000 g, in which the information is recorded in embossed writing or on another medium accessible to the blind or visually impaired, posted in a way that allows the content to be checked. It is exempt from postage if the sender is a person with a certificate of significant or moderate degree of disability due to visual impairment and the recipient is a library or an organization of blind or visually impaired people or an organization whose statutory goal is to act for the benefit of blind or visually impaired people, or vice versa; as well as if the parcel is sent by or addressed to a blind or visually impaired person and contains only information recorded in embossed writing (Art. 26).

In accordance with the annex to the regulation of the Minister of Labor and Social Policy and the Minister of Culture and National Heritage of September 6, 2013, updated in 2023 (Journal of Laws of 2023, item 1902), there are 18 libraries in Poland whose statutory purpose is to act on behalf of blind or visually impaired persons referred to in Art. 26 section 1 of the Act of November 23, 2012 – postal law, as well as 45 organizations of blind or visually impaired persons and organizations whose statutory purpose is to act for the benefit of blind or visually impaired persons, referred to in Art. 26 section 1 of the Act of November 23, 2012 – postal law.

The systematization of entities acting for the benefit of blind people's reading was dictated by positive premises resulting from the understanding of the needs of this group in terms of offering them alternative reading formats. At the same time, however, it resulted in public libraries insuffi-

ciently implementing the mission of universal access to library materials. The research conducted by Małgorzata Fedorowicz-Kruszewska (2010), the only nationwide systematic research to date analyzing the service provided to people with disabilities in public libraries, showed that the degree of preparation of Polish public libraries for comprehensive service of users with disabilities at the end of the first decade of the 21st century was not satisfactory. There was no national library strategy in this area, no documents regulating the activities of libraries towards people with disabilities, and no research was undertaken to identify the needs of the local environment. Public libraries were rarely equipped with assistive technologies; few libraries had speech synthesizers, Braille displays, enlargers, or auto-readers – equipment necessary for blind and visually impaired people. Actions taken for people with disabilities were not common, were episodic, uncoordinated and not obligatory. Libraries' websites did not meet accessibility requirements, and librarians felt poorly prepared to serve blind and partially sighted people and those with other disabilities.

On a scientific and advisory basis, conditions are indicated that enable independent and effective use of public libraries by people with various types of limitations related to functioning in various social spaces. Despite many suggestions and recommendations, only the Accessibility Acts and the Accessibility Plus program resulted in more visible changes in the functioning of public libraries. The Act on ensuring accessibility for persons with special needs of July 19, 2019 (Journal of Laws of 2022, item 2240, of 2024, item 731) specified that public entities are obliged to meet the minimum requirements to ensure accessibility in terms of architectural accessibility, digital accessibility, and information and communication accessibility, while the Act on digital accessibility of websites and mobile applications of public entities of April 4, 2019, as amended pursuant to the amendment of 2023 (Journal of Laws of 2023, item 1440) introduced regulations regarding ensuring the functionality, compatibility, perceptibility and understandability of the content of websites and mobile applications.

Monitoring changes taking place in public libraries is not yet systematic. However, in statistical studies from recent years there is a section called "Facilities for people with special needs". As of the end of 2022, public libraries had 605 stands adapted to the needs of people with disabilities. The blind, visually impaired, and seniors could use devices enabling the use of talking books – *Czytاک* (libraries had 1,337 devices). Public libraries had nearly 6 million library materials constituting special collections, of which 3.4 million were audiovisual materials (Public libraries in 2022, Central Statistical Office 2023).

Summarizing the analyses, it can be stated that the segregated model of library services for blind and visually impaired people, run by specialized units, is changing. Drawing on exemplary solutions and in cooperation

with entities acting for people with visual disabilities, public libraries can build an inclusive model of their functioning. The “universal right to use resources” and “universal accessibility” enshrined in the Libraries Act finally have a chance to gain a tangible and intangible dimension.

## MATERIAL AND INTANGIBLE ARTIFACTS OF ACCESS TO LIBRARIES AND THEIR RESOURCES FOR BLIND AND VISUALLY IMPAIRED PEOPLE

The following sections of the article will show how contemporary libraries build (or can build) the “information space” of blind and visually impaired people using material and non-material access artifacts. Following M. Kisilowska (2016), it can be said that the information space is “a multidimensional, dynamic, open set of content (data and information), their carriers and users” (cited in: Czerwińska 2018, p. 35). The category of access artifacts will be used in accordance with the understanding proposed by researchers Beata Borowska-Beszta (2021), writing about material access artifacts, and Małgorzata Czerwińska (2018), analyzing material information artifacts and intangible linguistic and behavioral artifacts. Access artifacts of a material nature are products – products of a given culture, enabling people with disabilities to participate in the activities of a given institution. They allow full use of its goods and participation in cultural practices. These are material adaptations and amenities of physical and information space (Borowska-Beszta 2021). In turn, intangible access artifacts are behavioral artifacts (behaviors) and linguistic and communicative acts that constitute the specificity of servicing people in the library (Czerwińska 2018).

## MATERIAL ACCESS ARTIFACTS FOR BLIND AND VISUALLY IMPAIRED PEOPLE – PHYSICAL SPACE

Blind people use compensatory mechanisms to acquire information about their surroundings. These mechanisms are based on the integration of impressions coming from the sense of touch (somatoperception, close-range), the sense of hearing (telereception, far-reaching), the sense of smell, taste and the kinesthetic-motor sense (Majewski 2002). Any visual representations must be replaced by representations available to non-visual sensory modalities. Methods of providing non-visual representations of images, e.g. of the environment, include non-graphic interfaces: audio interfaces and haptic and tactile interfaces (Śmiechowska-Petrovskij 2017a).

In turn, visually impaired people using visual or visual-auditory-tactile techniques will rely on optical information to learn about reality, which, however, should be modified to ensure better visibility and readability (e.g. by enlarging the text, using an appropriate contrasting color palette, lighting modifications, or the use of magnifying aids).

In order to use the library as an information space, the condition of accessibility of physical space for blind and visually impaired people must first be met. In accordance with the minimum requirements for architectural accessibility, communication spaces in buildings should be free from horizontal and vertical barriers to ensure independent and safe movement with a white cane or a guide dog. In addition, it is necessary to provide information about the building plan visually, tactilely or audibly. A person with special needs should also have access to all rooms of the building (except technical rooms), access with an assistance dog and the possibility of evacuation.

Many public libraries, taking advantage of co-financing programs for initiatives for people with disabilities, decide to install touch boards containing typhlographic plans of objects. "A typhlographic plan is a universally designed, proportionally reduced drawing presenting in a convex form, readable by touch and sight, the arrangement of rooms in a building or the organization of space. Its role is to provide people with visual impairments with the necessary cognitive information and/or supporting spatial orientation and building a mental map of the surroundings". (*Design Recommendations...*, 2023).

Typhlographic maps and plans reflect the layout of the area by emphasizing content elements (use of convex point, linear and surface signs) and verbal representation (title, legend, scale). Typhlographic maps and plans can be colored and use plain printing – then they are used for visually impaired people. A well-prepared typhlographic map/plan has appropriate information density, obtained thanks to proper generalization and editing of the map. Maps and plans can be additionally provided with sound – enabling the information to be heard. All elements/content of the typhlographic plan should be described in Braille and enlarged print. An additional element may be the use of NFC and QR codes.

NFC, i.e. near-field communication, is a high-frequency, short-range radio communication standard enabling wireless data exchange at a distance of up to 20 centimeters. The NFC code on the label allows you to listen to the encoded information, e.g. using a phone or watch. In turn, QR codes are two-dimensional graphic codes containing information in the form of dark and light squares. They can be read by special readers or smartphones using an appropriate application, although currently the camera built into a smartphone is often sufficient.



NFC and QR codes can also be used to mark spaces, not only typhographic plans. However, it is necessary to mark the labels tactilely so that the user knows that such a code is within reach and can scan it.

Another solution used in libraries are space markers or short-range systems (micronavigation). Short-range systems are useful for blind people in that, when placed at fixed points in space, they emit a signal received by a blind person using a special receiver and this signal is then converted into a voice message. Beacons – radio signal transmitters – are most often used inside buildings. They emit signals received by a smartphone application when they come within range of the device.

Tools useful for verifying whether the library space meets accessibility criteria or whether additional adjustments need to be made include:

The Environment Assessment Sheet included in the study by the Polish Association of the Blind: *Blind and visually impaired people in public spaces. Recommendations, regulations, good practices* (2009);

The Facility Accessibility Checklist by M. Fedorowicz (*Disabled person in the public library*, 2010).

It is also possible to use expert accessibility audits, i.e. an analytical process aimed at determining the scope of investments increasing the accessibility of buildings for people with special needs, on the basis of which a detailed report is created. However, it should be remembered that accessibility audits do not take into account the specificity of a given place, they only refer to statutory requirements. Current regulations require adjustments to be made in all public institutions, as well as those that receive financing from public funds.

## MATERIAL ACCESS ARTIFACTS FOR BLIND AND VISUALLY IMPAIRED PEOPLE – INFORMATION SPACE: DATA SETS, MEDIA, SUPPORTING INFORMATION AND COMMUNICATION TECHNOLOGIES

Access by blind and visually impaired people to information requires its development in a format corresponding to the specificity of extra-optical perception (for blind people) or in a way that takes into account the consequences of low-sightedness, such as significantly reduced visual acuity, defects in the field of vision, needs related to illumination or limitation of light, sensitivity to glare, disturbance of color vision or depth sense, and others.

According to the definition of M. Czerwińska (2017a), a book for blind people is a compact publication with editorial and formal features adapted to the perception of the text by people with profound visual impairment (blind or severely visually impaired); also in accordance with IFLA

terminology<sup>2</sup> alternative library material or special reading materials. In terms of content, these publications are mostly Braille, sound and electronic equivalents of typical printed books (so-called black-print books), but they differ in form, adapted to tactile, auditory, auditory-tactile and visual reception (low-sightedness). The vast majority of these publications are Braille, sound and electronic equivalents of books from typical publishing houses.

As M. Czerwińska notes, the development of typhlo-informatics and typhology indicates that there will be a radical limitation in the publishing of Braille books – they will only be used in early school education and in learning Braille writing. This system will also be used to read electronic books on Braille devices (e.g. Braille notebooks). The basic form of a book for the blind will be a digital book in various formats (e.g. DAISY, TXT, HTML, MP3, PDF). According to data from the World Union of the Blind, only 5% of all publications are accessible to people with visual disabilities. The best chance to share literature, especially scientific literature and new publications, is a digital book in formats accessible to the blind.

The basic formats of reading materials useful for blind and visually impaired people as well as the most important assistive technologies are described below.

#### BRAILLE MATERIALS

Braille books are publications printed in embossed writing. They are 3-4 times larger than a regular print publication. The offer of Braille books in public libraries is generally very modest. The cost of purchasing a Braille publication is very high. For example, Joanna Bator's book "Dark, Almost Night", with 512 pages, costs approximately 35 PLN, while in Braille it is contained in eight Braille volumes, with approximately 100 Braille pages each and costs 639 PLN. DZdN GBPiZS has the largest collection of Braille books. Currently it has over 6,000 titles. Braille books are also in the collections of, among others, such libraries as the Raczyński Library (500 volumes) or the Provincial Public Library in Kraków. Due to the fact that items containing Braille publications are exempt from postal fees, readers can use them throughout the country. Data from DZN GBPiZS shows that among the main collection sections of talking books, Braille books, and online loans, the fewest readers use Braille books (in 2018, 4,861 readers used the Talking Book Collections section, 627 readers used the Braille Book Collections section, and 3,297 used the online rental service).

As M. Fedorowicz-Kruszewska (2010) notes, libraries should promote Braille text recording and facilitate access to Braille materials for blind

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<sup>2</sup> IFLA – International Federation of Library Associations.

members of the local community. Expanding their own collections is possible thanks to donations and purchases. Many non-governmental organizations provide provincial public libraries with Braille collections, which is the result of various projects. The Szansa Foundation "We're Together" (Fundacja Szansa – Jesteśmy razem) is very active in this area. In 2022, it completed, among others, the projects "'I see by touch and hearing' – a campaign promoting reading by the blind", promoting books in Braille, Braille publications, and audiobooks, and "Development of reading among blind and visually impaired people", as well as numerous publication projects. In 2023, as part of the implementation of social projects, it published in Braille versions among others titles "*Północ i Południe. Teksty o polskiej kulturze i historii*" – ("North and South. Texts about Polish culture and history") – a book by Marek Cichocki available to the blind (2023); "*Memories*" ("*Wspomnienia*") by Aleksandra Piłsudska – edition for the blind (2023), "*The Barbarian in the Garden*" ("*Barbarzyńca w ogrodzie*") – essays by Zbigniew Herbert available for blind readers (2023), "*To Snowia and Beyond*" ("*Do Snowia I dalej*") – a book by Jarosław Marek Rymkiewicz available for blind readers, and many others.

When it comes to purchasing Braille books, the Trzecie Oko publishing house has a commercial offering (175 titles). You can also order the adaptation and printing of any title from companies offering such services, such as Altix, Impuls, BrajlPunkt and others.

However, it is worth emphasizing that a way to offer Braille materials to readers is also to use interlibrary loans and to include links to libraries where such collections are available in catalogues.

#### ANALOG TALKING BOOKS

Analog talking books (audiobooks) are books that are read out loud, books to be listened to (a recording of the reader reading the content of the book), recorded on audio cassettes (and previously on vinyl records or reel-to-reel tapes). Today analogue talking books and equipment for their reproduction are no longer produced. However, they are still popular, especially among seniors with visual impairments, mainly those with low digital competencies. Sets of analogue talking books are in the collections of DZdN GBPiZS and special libraries, as well as many public libraries (for example, the Talking Book and Braille Lending Room of the Provincial Public Library in Kraków has over 3,000 titles).

#### DIGITAL TALKING BOOKS

Digital talking books (audiobooks) are sound materials recorded in the form of digital files, initially in the media format of CDs, currently available on servers, in virtual libraries and bookstores, or through publishers and

streaming services. The book may be a voice-over recording or a recording of sound generated by a speech synthesizer. Audiobooks are available in the following formats: MP3, WMA, MPEG4, OGG, which can be played on a computer or other devices using appropriate programs or applications. Talking book formats dedicated to blind and visually impaired people are the DAISY and CZYTAK formats. Files in these formats are equipped with a special navigation system based on tags delimiting the text, allowing the recipient full access to the structure of the book (chapters, subchapters, pages, paragraphs, footnotes, references), instead of the linear composition in traditional talking books (Śmiechowska-Petrovskij 2017b). Books in the DAISY format can be played on computers using software such as EasyReader, DaisyReader, DaisyWebPlayer and many others. The Polish-produced CZYTAK format is another talking book format with similar navigation properties as DAISY, but it is encoded and can only be played using special equipment (player) of the same name. Digital books can be played using digital book players.

Traditional audiobooks already constitute quite a significant part of library collections. They are easy to obtain from mainstream publishing houses. Special formats such as DAISY and CZYTAK can, in turn, be obtained thanks to many campaigns aimed at promoting reading among people with visual disabilities conducted by non-governmental organizations, co-financed by PFRON, the Ministry of Culture and National Heritage, provincial assemblies and other grantors. The most important initiatives in recent years are described below.

The Association for Assistance to Disabled Persons "Larix" (founded in 2003) has for many years considered the promotion of reading by people with visual impairments as its main area of activity. Since 2007, the organization has been recording and providing free digital talking books (in the CZYTAK format). The association's catalog contains 3,522 oral books and is successively being supplemented. Moreover, for several years it has been lending Czytak talking book players to public libraries. The association cooperates with over 300 libraries throughout the country.

Another important organization is the Klucz Foundation for the Education and Promotion of Reading of Blind and Visually Impaired People (founded in 2005). The main axis of the organization's activities is the creation and popularization of books published in the DAISY standard. It also provides the DAISY book reading browser (DaisyReader) at no cost. In the years 2007-2022, the foundation developed 682 book titles in the DAISY format, which it donated to 107 libraries.

The next organization discussed has a slightly different activity profile. The Masovian Association of Work for the Disabled "De Facto" (year of establishment: 2005) considers its flagship activities to be running an e-kiosk with periodicals for people with visual impairments – magazines

from the open press market, converted into a form that is friendly and accessible to blind and visually impaired people. The second activity is creating audio descriptions for films. Together with the Main Library of Labor and Social Security (DZdN) – Collections Department for the Blind, they created and run the National Resource of Digital Films with Polish Audio Description for the Blind.

It is worth emphasizing that apart from organizations created by people with visual impairments, other organizations are also involved in disseminating books for this group of recipients. For example, the Modern Education Foundation (founded in 2011), whose statutory goals are broad and quite diverse, has adapted 160 titles to the DAISY format as part of several editions of the “Book for You” project (2021, 2022, 2023 – the last one in cooperation with the Moderna Foundation). As part of the “Literature from the Recovered Territories” project, another 20 audiobooks were made available online and sent to libraries and other public institutions serving people with visual impairments.

An important initiative is the Wolne Lektury Foundation, which runs the free digital library wolnelektury.pl, containing over 5,500 literary works from the public domain. Thanks to the development of technological tools, the books offered are available for download in spoken form in .mp3, OggVorbis, Epub+audiobook formats, and some of them in the DAISY format. You can also download text formats: PDF, EPUB, MOBI, TXT. During the years 2023-2026, the foundation is implementing the project “E-collection of school readings and literature for listening for students with disabilities”. As part of this, 111 audiobooks with school readings, classics, and contemporary literature will be prepared, including 53 new titles in three formats: mp3, Daisy, Epub 3; 19 titles in two formats: Epub MO 3, Daisy; and 39 books only as Epub MO 3. Audiobooks that have already been prepared are available for free on the Wolne Lektury website and are also available in all school libraries.

#### DIGITAL TEXT BOOKS (EBOOKS)

Reading materials in text form can be read by blind people thanks to the use of typhlo-informatic tools or accessibility options built into the operating systems of mobile devices (computers, tablets, smartphones).

Files with text without formatting tags (TXT) and formatted texts (RTF, DOC, DOCX, PDF, ODT) can be read by touch on Braille devices (e.g. Braille notepads) or listened to on special devices, such as talking book players and publicly available players such as computers, tablets and smartphones (thanks to screen reading programs and speech synthesis). Blind people can also use other formats, such as EPUB and Mobi, on mobile devices with sound – but the disadvantage is that they have to work

with the device's screen turned on. This significantly facilitates access to mainstream reading materials – assistive technologies enable reading texts in digital form not adapted to Braille or audio speech.

This clear demand for digital collections poses a challenge for libraries to digitize their collections – developing and sharing digital files that can be read by people with visual impairments on various devices thanks to screen reading programs and implementing an online lending system.

It is worth mentioning digital libraries in this context. First of all, we should mention the Academic Digital Library (ABC) – a library system cataloging and sharing collections developed in special formats adapted to the needs of people with disabilities, the first digital library in Poland for blind people among others, established in 2010 on the initiative of the University of Warsaw Library. Since 1997, the Library of the University of Warsaw (BUW), among others, ran the Digital Book Library (first with talking books), developing materials in alternative formats at the user's request and providing typhlo-IT cabins for individual work. These collections have become part of ABC, which is currently co-created by leading universities in Poland (Czerwińska, 2017b). The ABC library's collections are made available to blind people, people with other visual impairments that cannot be corrected to an extent equivalent to that of an able-bodied person, and people with other disabilities that prevent them from using traditional materials in ordinary print. Sharing collections may involve various forms of providing access to their content, depending on the type of material provided and the method of access by the reader. Available forms of access are: downloading the file to a computer device, downloading the file directly to the reading application (only for applications compliant with the OPDS standard), reading the file via an online browser, sending the file to the reading device registered in the user's profile or to a digital storage service. The collections and all operations on them are available free of charge to readers after logging in (*Regulations of the Academic Digital Library*).

In 2011, the Zielona Góra Digital Library for the Blind was established on the initiative of the University of Zielona Góra Library and Dr. hab. Małgorzata Czerwińska, professor at the Faculty of Pedagogy, Sociology and Health Sciences of the University of Zielona Góra (UZ). It is addressed to all people with visual impairments.

Another non-academic initiative was the IBUK Libra Light platform, created in 2017 at the request of the Book Institute (Instytut Książki) and created by Wydawnictwo Naukowe PWN. The platform made publications available to blind, visually impaired and physically disabled people (who cannot read printed books). Authorized readers could use fiction, scientific, and specialist publications free of charge in ePUB or mp3 file formats. The condition for gaining access to the platform was documenta-

tion of a disability. The IBUK Libra Light project was closed in 2021 (it was a 5-year project). Currently, users can use the general IBUK Libra service. This is a collection of several thousand e-books. The website is intended for everyone. Currently, it fully meets WCAG 2.1 AA standards. To use the website, you must create an account, select your library and obtain a special PIN, or access via HAN, PROXY or VPN.

This example perfectly shows how implementing the digital accessibility standards required by law minimizes the need to create special platforms and services for blind and visually impaired readers.

#### LIBRARY MATERIALS IN ENLARGED PRINT

Enlarged print or large print is the conventional name for the editorial adaptation of a text aimed at the needs of visual perception of visually impaired people and others who have difficulties in reading texts. It includes adjusting the font type and size (simple, sans-serif font, minimum 14 point), using larger spaces in the text, appropriate colors and contrast of the text and background, margin sizes, page numbering, and adaptation of graphic elements.

Materials of this type are intended for visually impaired people – using visual and visual-auditory-tactile techniques, whose vision allows them to read black-print texts, even if it is necessary to enlarge them or use optical or optoelectronic aids. People with low vision experience different functional consequences and, therefore, have different text needs. The most common consequences include: decreased visual acuity – reduced ability to perceive details, various types of visual field defects (peripheral, central, mixed, semi), impaired light sensitivity (including photophobia), decreased contrast sensitivity, impaired depth perception, visual variability, color vision disorders and others. Reading difficulties for visually impaired people occur in visual, cursory reading of the text; distinguishing subtle differences between colors and patterns used in drawings, graphs or charts; shifting eyes between graphic elements and text; shifting eyes between booklets and test answer sheets; visually encompassing the entire graphic element; shifting eyes from one line of text to the next; interpreting graphic elements, especially groups of drawings. Moreover, visually impaired people have difficulty maintaining reading speed at a level considered average for people with normal vision (Kończyk, 2011, pp. 7-8).

Reading materials in enlarged print are also a very good choice for older people who experience both physiological and pathological eye changes related to age. It is estimated that over the age of 70 only 10% of the population after correction have full visual acuity. The need for light increases with age: for the same level of vision, an average 6-year-old needs about twice as much light, and an 80-year-old about three or four times as

much light as a 20-year-old. Furthermore, age is a serious risk factor for blindness and low vision. It is estimated that one in three people over the age of 65 have some form of vision-limiting disease (Kilian, 2020).

Materials in enlarged print were created only occasionally. In 2011, school textbooks and teaching materials adapted in this way at the request of the Ministry of National Education began to be prepared (Śmiechowska-Petrovskij, 2015; 2018). However, in recent years, public market initiatives have also appeared. One of them is a series of books published in large font called "Wielkie Litery" ("Large Letters") – new editions of enlarged font books that make reading easier for visually impaired people and seniors. The project was initiated in 2019 by the book distributor OSDW Azymut. So far, over 500 books from several publishers have been published in the Wielkie Litery series. Publications with large fonts have joined the book collections of over 1,000 libraries from all over Poland.

The second important initiative is the "Big Letters" series, offered in the Gildia.pl online bookstore. This is an offer of books that meets the needs of readers with vision problems, intended for the elderly, people with visual impairments and the sick who feel discomfort when reading standard print. These are books printed in soft cover, with a colorful cover, in a larger format (16 x 23.5 cm) and with a large, legible and easy-to-read font (14-point size). The bookstore offers 960 titles.

#### LIBRARY MATERIALS IN BRAILLE AND BLACK-PRINT (TRANSPARENT)

Books in transparent print are publications containing black-print text prepared in accordance with the guidelines for adaptation to enlarged printing and Braille text. The black-print text is an underprint with raised text placed on top of it. Such publications appear as the result of reading projects. The main publisher is the Szansa – We're Together Foundation. This is a type of publication "for shared reading" – the same copy can be used by sighted, visually impaired and blind people.

#### OTHER LIBRARY MATERIALS

Other library materials that can be used by blind and visually impaired people include: typhlocartographic collections (touch maps and atlases), typhlographics (convex drawings), films with audio description, Braille and black-print books with relief graphics (for young blind children), musical materials and others.



## LIBRARY EQUIPMENT: ASSISTIVE TECHNOLOGIES

Assistive technologies help blind and visually impaired people read materials that are not adapted for Braille or magnified print. Nowadays, people with visual disabilities most often use personal technologies in the form of special devices or in the form of applications for a mobile device (smartphone). However, libraries should have an individual work station for a person with a visual disability, the equipment of which includes:

- a computer with screen reading software installed for blind people and applications that magnify the image on the screen to be used by visually impaired people, as well as a sound module to listen to the read content (speech synthesizer);
- Braille display (a device connected to a computer, containing a special panel on which information displayed on the screen is highlighted in the form of Braille text (this is the so-called refreshable Braille));
- a fast scanner for scanning books and other materials, with OCR software (optical text recognition) enabling saving the scanned content as a text file;
- software for translating regular texts into Braille characters;
- a Braille printer;
- a printer for embossing convex graphics (optional);
- a stationary enlarger, portable enlargers, electronic magnifiers – devices that allow visually impaired people to enlarge reading material;
- lecture devices that allow you to scan the text and listen to it in real time.

## DIGITAL ACCESSIBILITY OF WEBSITES AND ONLINE CATALOGS

Libraries, as public entities, are subject to the requirement to ensure digital accessibility in accordance with the Act on digital accessibility of websites and mobile applications of public entities of April 4, 2019, which is the Polish equivalent of the European WCAG 2.1 rules. It contains basic guidelines on how to organize online communication to make it fully accessible. These concern the structure of the website, graphics and photos with methods of providing these with alternative text information, videos, and preparation that ensures navigation and full reading of digital texts and documents or of the intranet. Blind people use screen reading programs, and what is important is the logical structure and order of information on the page and the ability to navigate it using keyboard shortcuts (e.g. headings that have the option of expanding them). They also need alternative information for graphic objects (so they know what the photo or drawing shows). Active forms and links should also have appropriate, readable information. In turn, visually impaired people need the ability to enlarge the font, change the contrast of text and background, and know

which element is active when navigating the keyboard (e.g. by highlighting with an additional frame).

The annex to the Act of April 4, 2019 (Journal of Laws of 2023, item 1440) is a checklist with detailed guidelines for the accessibility of web content applicable to websites and mobile applications in terms of accessibility for people with disabilities.

## INTANGIBLE ACCESS ARTIFACTS FOR BLIND AND VISUALLY IMPAIRED PEOPLE OF A BEHAVIORAL AND LINGUISTIC-COMMUNICATIVE NATURE

Library employees who do not have specific knowledge about how people with particular disabilities function and have no personal contact with them may feel fear and discomfort related to serving this group of readers. Very often, librarians' professional experience comes from institutions designed and operating without the presence and participation of people with disabilities, which is why they do not have skills related to organizing an accessible library. Raising the competencies of librarians in working with readers with special needs in terms of access to library materials is a key activity supporting the area of reader service.

Małgorzata Fedorowicz already pointed out in her 2010 publication that the responsibility for the proper preparation of library staff to provide library and information services to people with disabilities lies with the library management staff. Following Andrew McDonald, she mentioned factors important for creating an institution's "culture of awareness", such as: library policy and planning related to serving users with disabilities; support provided by management staff; proper allocation of collected resources; comprehensive staff training; appropriate attitude towards the issue of readers' disabilities – all staff members are responsible for serving this group. She also pointed to recommendations regarding the importance of appointing one library employee as the person responsible for, among others, the implementation, development and coordination of services for people with special needs in reading print. Their tasks should include: participating in the development of library policy, supervising the implementation of services, training librarians and users, being familiar with the latest trends in library services, and others (Fedorowicz 2010, pp. 132-134). These important tips have found legal force in the previously mentioned accessibility laws. Pursuant to Art. 14 section 5 of the Act of July 19, 2019 on ensuring accessibility for people with special needs (Journal of Laws of 2022, item 2240, of 2024, item 731), public institutions are obliged to appoint accessibility coordinators. Public libraries are on the ministerial list of entities subject to the Act, but they are not obliged to appoint a coordinator. Nevertheless, voluntarily appointing coordinators

in organizational units, especially if they serve a larger number of clients, is possible and recommended – the decision in this respect rests with local governments.

Accessibility coordinators are appointed in many public libraries. The coordinators' tasks include in particular:

1. providing support for people with special needs in accessing services provided by the library;
2. preparation and coordination of an action plan to improve the library's accessibility to people with special needs;
3. monitoring activities related to ensuring accessibility for people with special needs;
4. publishing the details of the accessibility coordinator in the Public Information Bulletin;
5. preparing reports on ensuring accessibility for people with special needs in the scope of library activities;
6. presenting the library director with current information on activities undertaken in the scope of tasks performed.

When it comes to improving librarians' competencies in working with readers with visual disabilities and inclusive implementation of the statutory goals of libraries, many free training courses for library employees have been organized in Poland in recent years. A significant part of them was funded thanks to funding from the government's Accessibility Plus program, established to support the implementation of the provisions of the Accessibility Act in the years 2018-2025.

One such training initiative was a project organized as part of the cooperation between the Rehabilitation Center of the Typhological Institute of the Polish Association of the Blind, the book distributor OSDW Azymut (publisher of the "Wielkie Litery" series), and the Good Books company, under the name: "Wielkie Litery. Blind and visually impaired readers in the public library – training program". The training topics concerned the participation of seniors and people with visual impairments in the cultural and literary life of libraries.

Issues covered during training include:

- visual impairment,
- activities of the Polish Association for the Blind as an institution working for people with visual disabilities,
- the Availability Plus program,
- the Act on ensuring accessibility for persons with special needs,
- the Act on digital accessibility of websites and mobile applications of public entities,
- tasks of the accessibility coordinator,
- accessibility declaration,
- accessibility reports,

- information and communication accessibility for blind and visually impaired people,
- application of the principles of *savoir vivre towards people with visual impairments*,
- digital accessibility: WCAG 2.1 standard, website accessibility, website accessibility audit,
- architectural accessibility of rooms and public space to the needs of people with visual disabilities,
- optical, non-optical, and electronic aids as support for reading and a way of obtaining information by people with visual disabilities,
- Braille writing and reading skills for people with visual disabilities,
- availability of literary and cultural events for people with visual impairments.

The trainings were recorded in the form of video recordings and are available free of charge on streaming services.

Another important activity in this area was the implementation of the project "Books available to everyone – training in handling disabled readers and promotion", co-financed by the Minister of Culture and National Heritage, implemented by the *Szansa dla Niewidomych* (Opportunity for the Blind) Foundation. As part of the project, training was conducted in the field of contact and service for people with disabilities. They covered both institutions already to some extent adapted to the needs of people with disabilities in terms of the availability of library materials (audio-books, black-print versions, Braille versions of publications), but also those that did not have such numerous specialized collections. The training took place in 16 institutions in each voivodeship and was attended by over 160 people. Employees of provincial typhlopoints – a branch of the Szansa Foundation – and promotion specialists conducted workshops as part of the training, during which each institution developed an action plan focused on the promotion of reading among people with disabilities. The plans were implemented in the months following the completion of the training.

A commercial offer of training for libraries is made available on an ongoing basis by Good Books, which has been providing training for librarians, publishers, and booksellers for fifteen years, supporting the development of reading in Poland, mainly by implementing technological innovations and changing the way of working with readers and library users. The following problem issues are offered within the "Availability in the library" area:

- Cultural offer for people with special needs in the library
- How to properly behave towards a person with a disability, i.e. *savoir vivre for librarians*.

- Accessibility in the library – ABC of the librarian and cultural institution.
- Accessibility of websites and mobile applications, i.e. digital accessibility management in libraries and cultural institutions.
- Adapting websites to WCAG 2.1 requirements.

In addition to improving the knowledge, skills and social competencies of librarians, it is also important to organize ways of making library materials available, which is an essential library service. As for blind and visually impaired people, this can be done through:

- personal loans at the library premises;
- providing access outside the library through the following services: home delivery, sending materials by post, making them available electronically (online lending); offering bibliobuses (mobile library branches in trucks or semi-trucks; bibliobuses not only enable the borrowing of books “closer to home”, but also the use of assistive technologies).

## SUMMARY

Modern libraries face many challenges. These undoubtedly include: digitization and technology implementation – management of digital resources, providing e-books, audiobooks, online databases, as well as providing access to modern communication and educational tools for users. In addition, the management of limited budgets and the need to modify the role and tasks of librarians should also be mentioned. A special challenge today is to ensure accessibility for people with disabilities, including the blind and visually impaired, to library resources as well as events and practices carried out in these special cultural institutions.

The analyses carried out show that for many decades public libraries have not had to systematically and methodically create an accessibility framework for their functioning, especially in relation to readers with visual impairments. Specialized libraries, school libraries at educational centers and the library at the Polish Association of the Blind were responsible for promoting reading and providing services to blind and visually impaired people. The reasons for this state of affairs were, among others, limitations resulting from difficulties in issuing and making available special materials, Braille and spoken. Technological and socio-cultural changes require that – just like inclusive education – libraries become universally accessible to all people living in their immediate area, regardless of health status and functional ability, consolidating the local community. For this to be possible, the access artifacts mentioned in the article, both tangible and intangible, must exist.

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## BIBLIOTEKI PUBLICZNE JAKO PRZESTRZEŃ INFORMACYJNA OSÓB NIEWIDOMYCH I SŁABOWIDZĄCYCH. MATERIAŁNE I NIEMATERIALNE ARTEFAKTY DOSTĘPU

SŁOWA KLUCZOWE: Artefakty dostępu. Biblioteki włączające. Inkluzja informacyjna. Osoby niewidome i słabowidzące.

ABSTRAKT: **Teza/cel** – Celem artykułu było ustalenie, jakie są materialne i niematerialne artefakty dostępu osób niewidomych i słabowidzących do bibliotek publicznych jako przestrzeni informacyjnej, a także ukazanie w ujęciu historycznoprawnym obsługi bibliotecznej osób niewidomych i słabowidzących w Polsce. **Metody badań** – analiza danych zastanych (akty prawne, dane statystyczne), analiza piśmiennictwa i inwentarz praktyk wdrożeniowych. **Wyniki** – do materialnych artefaktów dostępu osób niewidomych i słabowidzących należą: adaptacja przestrzeni fizycznej do percepcji pozaoptycznej i ograniczonego widzenia (tyfloplany, oznaczenia dotykowe, znaczniki przestrzeni – beacony, oznaczenia kontrastowe w powiększonej skali) oraz zgromadzenie materiałów bibliotecznych w użytecznych formatach. Rozwój technologii znacząco wpływa na warunki dostępności: preferowane jest tworzenie materiałów w formatach cyfrowych, doposażenie bibliotek w technologie wspomagające a także wykorzystanie znaczników przestrzeni

(beaconów, kodów NFC i QR do transferu informacji orientacyjnych). Na niematerialne artefakty dostępu składają się kompetencje bibliotekarzy odnośnie do pracy z użytkownikami z niepełnosprawnością narządu wzroku, które współcześnie mogą być podnoszone w ramach programów rządowych oraz komercyjnych oraz zróżnicowane formy obsługi użytkownika. Dzięki nim biblioteki publiczne mogą budować inkluzywny model funkcjonowania, uprawomocniając zapisane w ustawie o bibliotekach "powszechne prawo do korzystania z zasobów" oraz "powszechną dostępność" dla wszystkich czytelników, również z niepełnosprawnością wzroku.