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Assessing the Accessibility of Digital Libraries for Individuals with Digital Libraries

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Introduction

The advancement of science and technology, digital libraries have evolved, to give access to up-to-date information for the readers. The digital libraries allow the users to access educational resources at any time and from any location. The flexibility of digital libraries allows the user to gather knowledge and conduct research in their own place. The easy accessibility of the digital libraries enhances the interaction among the users, by facilitating participation and conversation with the help of various interactive tools leading to effective discussion and exchange of thoughts. Digital Libraries hold a lot of advantages such as elimination of physical boundaries, 24-hour access to information, flexible access points. Individuals with disabilities are suffering from some sort of mental, physical, intellectual or sensory disorders for a long period of time. The disabled individuals are not capable enough to utilize the power of the internet, and contribute to the advancement of the modern world. According to Sir Tim Berners-Lee, " As we move towards a highly concentrated world, it is critical that the Web be usable by anyone, regardless of individual capabilities and disabilities." The statement marks that the accessibility to the internet must be provided to all, as digitization has the potential to curb the discrimination in the society. The context focuses on providing accessibility to digital libraries among people with physical disabilities, along with various methods adopted to achieve those results.

Methodology

Sweden is considered among one of the most digitally advanced countries in the world, and they crafted various strategies that make the internet available to the individuals suffering from some sort of disabilities. The strategies adopted by the Swedish to make digitalization possible among the disabled individuals, a cross sectional survey, which is basically an observational study that interprets that data on a particular sample population on a specific point of time was adopted. The survey focussed on the people with cognitive disabilities, and targets the nationwide issue. The individuals who participated in the survey were recruited by snowball sampling. Among the sample size of 771, 35 people were having impairments. The survey showcased that people with individuals with autism, ADHD and bipolar are engaging more on the internet than other disabled personnelles (Drechsler et al. 2020). The study also highlights that there is a significant difference in digital engagement between the people having sub-group of disabilities. The survey held on the Begripsam Group, where the individuals have various cognitive disabilities, contributed to development of the research procedure. The survey method adopted by them was approved by the Ethics Board at KTH Royal institute of Technology. The participants who were part of the survey were informed beforehand and with their consent only the survey was conducted. The recruitment process of the participants is closely monitored, which allows the individuals from every disability group to participate in the observation. The survey questionnaires were distributed through Begripsam Website and Facebook

Site, among various disability organizations and disability home pages. These allowed the survey questions to reach mass of people nationwide, the information gathered from the targeted population was carefully observed and interpreted. The participants can undertake the survey online, on paper, or they might choose a telephonic interview; this option of preference allows a lot of people to participate in the survey. The interviewer crafted the survey questions in such a way that are easily understandable and have the potential to generate a lot of information.

Discussion and Result

The data collected on the basis of 54 questions that were composed in the questionnaire The questions mainly focussed on, the type of disabilities an individual have, what are the challenges an individual face while accessing the online information. The study also navigates and tries to understand the difficulties faced on using any particular feature over the internet, that includes online banking, e-shopping, social media such as facebook, youtube and so on. The questions crafted also throw light on the age, gender, background, academics, and economic conditions of the participants. The data collected from the survey are analyzed by descriptive statistics, that shows how the individuals in 28 disability groups use the resources of the internet (Dobransky *et al.* 2006.). The result shows that there is a significant difference in accessing the internet among the different disability groups. The individuals suffering from language and intellectual related impairment, reported the least proportion that have access to the internet. The survey also highlights that the people with some sort of disabilities fall behind the normal people. The difficulties they showcase are that they have minimal access to the internet, they hardly use the internet to pay their bills, they rarely opt for online shopping, and they do not have a good social media presence. It is also visible from the survey that the use of smartphones is much more among the disabled individuals rather than the use of computers. In the survey it was also evident that 79% of the women having dyslexia are reported to have access with tablets (Johansson *et al.* 2021). The use of tablets in the Swedish population is much more compared to other parts of the world. The individuals having language-related disability, intellectual disability and memory disability registered difficulties in using the internet. The people with vision impairments reported lesser difficulties than most other groups, which indicates the work to make the internet accessible for the blind and people with less vision improved a lot. Various strategies such as screen recorder and use of keywords are adopted to make the accessibility to the internet smooth, including the use of keywords instead of mouse clicks. This allows the people with no hand or vision impairment to browse over the internet. Another way to make the use of the internet available for the disabled individuals includes, the introduction of screen reader, a screen reader that has the potential to navigate various elements on the web page, and narrates the components of the computer to the visually impaired individuals (Delgado *et al*. 2021). Magnification softwares, possess the capacity to maximize the size of the element on the web page, the other strategies to make internet access to disabled includes dictation (Maus *et al.* 2020). According to Stratton *et al.* (2022), the Covid-19 has come into an effect for the disabled in accessing the digital libraries. They cannot able to access such digital libraries including buying the items in online shopping and unable to pay anything. Due to the global burden of Covid 19 disease and dormant results in affecting the health of physically challenged people. The gap has only increased from restricting digital exercise resource. This study has surveyed the digital-fitness resources and the norm of accessibility for the disabled people. According to YouTube it surveyed that the disabled people use home-based exercises, goes to work out with no equipment. The global pause in Covid 19 has inspired those who make the home-based fitness videos for the disabled people so that they can easily access it in

their use. Accessibility of technology will continue whenever there will be modulation in understanding as well as accessing the digital libraries.

Conclusion and Recommendations

It has been concluded that with the advancement of science and technology, digital libraries have evolved to access the information for the readers. Accessing the digital libraries helps to enhance the interaction among the users, by facilitating participation and conversation with the help of various interactive tools leading to effective discussion and exchange of thoughts. Through this survey it was found that people who are physically challenged always relied upon the internet. Individuals who are having cognitive disabilities have contributed to the development of the procedure of research. According to the results of a few surveys discussed in this study, physically challenged people have minimal access to the internet, unable to use it in paying the bills, and not having social media presence. Smartphones are widely used among the disabled individuals rather than the use of computers. It is also evident that 79% of women who are suffering from dyslexia can access it with the help of tablets. There are various strategies that help to make accessibility to the internet including screen recorder, use of keywords. Magnification software, possess the capacity to maximize the size of the element on the web page, the other strategies to make internet access to disabled includes dictation.

It has been recommended that there should be accessibility in digital libraries for the disabled people. The people who make the video content, must keep in mind while creating video or app for disabled so that they can use it in future. There are certain techniques that the app creator must do for the disabled individuals includes large print keys labels, speech output system with low vision. In addition to that, there has been requirement for the involvement of the blindness and learning disabilities, braille conversion software and printers for them, and trackballs in laptops. All these things will help the disabled to control the mouse and keyguards, as well as, can aid in mobility impairment. Moreover, this can educate the disabled people as well with the help of which they can easily access the digital library in the future. Furthermore, they can acquire assistance for the utilization of user testing methods including accessibility and usability in testing.

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