Smart Devices As Assistive Technology In Aiding Low Vision, Visual Accessibility In The Museum In Museum Industry

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Introduction

The loss or alteration of vision is a common global disability that can affect anyone, regardless of age or health. Low vision is characterized by partial loss of vision and can vary in how it affects sight. It can be caused by age-related and genetic disorders, diseases, or injury. Making museums more visually accessible for visitors is an evolving issue that requires continuous revision, dedication, and collaborative measures. This project aims to provide inspiration for museums on how to cost-effectively present their mission in a new way.

Image Description: Three examples of vision loss due to low vision. The first is central field loss, the second is peripheral field loss, and the third is scattered area obstruction.
Image Caption: Examples of vision loss due to low vision. (The World Wide Web Consortium, 2019)

Project Goal

To establish procedure and produce accessible web-based versions of exhibits that guests with low vision can access by scanning QR codes with their smart devices and having it communicated through a screen-reading program
This process is demonstrated at the Lowell D. Holmes Museum of Anthropology at Wichita State University

Methods

Layout

- Create a master list of exhibits, cases, and objects
- Input existing label information
- Identify what items will need to be described on the website

Photographs & Alt-Text

- Take new images of the exhibits' objects for uniformity
- Write alternative text (alt-text) descriptions for images and media added to web pages. Embed these into the images on the web pages to help visitors who use screen readers understand the context of the page

Website

- Build web pages for exhibits through OMNI Web using a series of templates
- To make web pages screen reader accessible, text was formatted into paragraph-style of headings and links were selected to open in the same tab in the browser

QR Codes

- Use Ko and Kim's (2017) wayfinding system; 12 x 12 cm codes at 140 cm resulted in having a 2.5 m ± 40° viewing angle
- Add an additional quiet zone, an area of supplementary visual contrast in a code, making them easier to scan; .25 cm white and .25 cm black borders

Image Description: Two students wearing white gloves place a large carved wooden shield in front of a black photo backdrop
Image Caption: Two students position an Asmat Shield in front of a backdrop

Results

- 24 web pages and QR Codes printed on High Impact Polystyrene
- 191 photographs and alt-text (148 photographs of 167 objects on display; additional 24 photos taken of exhibits to use on the website)
- Produce braille labels, including image/ object descriptions for the exhibits with QR codes
- Total expense: $86.03

Future Work

- Expand to other displays at Wichita State
- Review and modify the project to reflect the most current wayfinding research
- Professional feedback & survey with the low vision community
- Specialized equipment available for visitors to check out

Image Description: QR Code that directs users to this link (https://www.wichita.edu/museums/holmes/Low_Vision_Accessibility_Project.php)
Image Caption: References & transcription of this poster available through QR code

Replication

The project hopes to serve as inspiration for museums in their accessibility journey by showcasing a low-cost solution that can be easily installed without requiring extensive technical knowledge. It is important to note that other alternatives may be more effective depending on a museum's budget, guest demographics, and available technology.
To embark on any accessibility work, it is crucial to identify options and engage with the communities you wish to serve. It is also vital to have a clear understanding of the project's purpose and establish strong relationships with stakeholders.

Image Description: Three images: 1) An accessibility error pop-up on the OMNI Web, citing incorrect header nesting. 2) Two students examining a paper, while another adjusts a wooden statue in an exhibit diorama. 3) A QR code on an old wooden pillar.
Image Caption: Top: Example of OMNI Web Accessibility Check Error, Left: Students removing objects off exhibit, Right: Example of QR Code at the Holmes Museum

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Image Description: Wichita State University Logo "WSU that has a piece of wheat on top." To the right of that reads "Wichita State University Fairmount College of Liberal Arts and Science Department of Anthropology and Lowell D. Holmes Museum of Anthropology