

ABSTRACT

Navigation is a major challenge for individuals with visual impairments in their daily activities. Their visual limitations hinder their ability to recognize routes, find destinations, and avoid obstacles. Currently, available navigation aids do not fully meet their needs. They still rely on assistance from others to obtain detailed information about visually-oriented objects such as indoor spaces, traffic signs, and vehicles. In this research, we designed a QR Code scanner application that serves as a specialized navigation tool for them. Through this application, users with visual impairments can rely on the QR Code scanner to obtain important information about their surroundings. Text and audio information provided by the application assist them in navigating streets, reaching destinations, and avoiding potential obstacles. The approach used was User-Centered Design (UCD), with a focus on meeting the needs and preferences of individuals with visual impairments. Users with visual impairments actively participated in the early design stages, ensuring that their perspectives and needs were well-integrated into the development of the application. Enhancing accessibility was considered in designing the application, in accordance with the Web Content Accessibility Guidelines (WCAG) version 2.0. Evaluation is carried out through usability testing involving users with visual impairments. The Single Ease Question (SEQ) and System Usability Scale (SUS) are also used to measure application satisfaction and success. The results of Naviku's final test through usability testing showed that the SEQ satisfaction level was obtained at 6.15, and SUS was obtained at 80.5.

Keywords: Navigation aid, Visual impairment, User-Centered Design (UCD), WCAG 2.0.