

Title: A Case-Based Reasoning Approach for Speech-Enabled e-Learning System.

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Abstract: E-Learning plays an important role in our society today; hence, higher institutions now offer courses through distance learning. Several studies and methodologies towards improving e-Learning have been proposed and provided. However, not too many works are dedicated to the design and implementation of e-Learning for the visually impaired learners. Sight challenge is a serious form of disability, yet, the existing e-Learning platform (web, mobile, etc) have not devoted enough attention to the plight of the visually impaired particularly in the area of usability. The objective of this paper is to present an intelligent speech-based e-Learning system with dual interface –Voice User Interface (VUI) and Web User Interface(WUI). Case-Based Reasoning (CBR) was engaged to provide intelligent services. Voice Extensible Markup Language (VoiceXML) was used to develop the VUI, Hypertext Preprocessor (PHP) for the WUI and Apache as the middle ware. The VUI and WUI are accessed through mobile phone by dialing a telephone number and the WUI using the Internet respectively.

The e-Learning system will especially be useful for students who are visually impaired and those with dyslexia ailment that make reading, writing and spelling difficult. The application will complement the existing e-Learning systems such as web-based learning, m-Learning and others.