DEVELOPMENT OF AN INTERACTIVE ONLINE DATABASE FOR TEACHING PLANT MATERIALS

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Interactive web based systems are rapidly becoming an essential tools for teaching and learning in the information age. Innovative educational methods are being introduced to various academic disciplines. Web-based learning and portable devices are emerging as teaching and learning aids. Learning and identification of ornamental plants are the main objectives of the plant materials courses for undergraduate students in the Department of Plant and Soil Sciences at Mississippi State University (MSU). The professors, teaching assistants (TA), and students use the MSU gardens to study and identify ornamental plant species. This can be time consuming for both instructors and students. This research developed an automated web based database system to deliver information on the ornamental plants and trees in the MSU gardens. Apache, MySQL, PHP, and JavaScript software were mainly used to develop this application in the Windows environment and information about each plant and tree were entered into the database. Plant locations were given by longitude and latitude coordinates and linked to Google maps. Quick Response (QR) codes were created to directly access ornamental plant details at the field. This database functions as a virtual TA for the plant materials courses and as an information source for the public. Users can search the ornamental plant information and determine the location of plants using a computer or mobile device. Plant information can be retrieved from the field by a smartphone with a QR code reader. The web-based database is used in the plant material classes as a teaching tool and for self-guided tours. The developed web-based database system is being evaluated for its effectiveness and efficiency using a questionnaire based survey.

Keywords: Database, Plant identification, Portable device, QR code, Teaching