ABSTRACT

The Podcast Laboratory of Applied Science Faculty requires an efficient information management system to support its operations as an audio-visual content production facility and academic event venue, however conventional methods such as static announcement boards have limitations in flexibility and real-time information updates. This research aims to design and implement a Unity-based Digital Signage capable of displaying information dynamically, building an integrated system with database for real-time updates, and enhancing laboratory user experience through interactive and multimedia displays. The development method uses the Waterfall model including system analysis, UI/UX design, Unity implementation with API integration, Black Box Testing and User Acceptance Testing, and system deployment. The Digital Signage system was developed using Unity as the main platform with MySQL database integration through API to display booking schedules, automatic On Air/Off Air status, multimedia content from YouTube/Instagram/TikTok, and interactive QR Codes that change according to content. Test results show 100% of features successfully meet functional specifications with user satisfaction level of 8.7/10, 90% increase in schedule awareness, and 80% reduction in manual inquiries. Unity-based Digital Signage proved effective in improving Podcast Laboratory operational efficiency by providing a user-friendly real-time information system and supporting academic environment modernization.

Keywords: Digital Signage, Unity, Podcast Laboratory, Real-time Information System, User Interface, Interactive Multimedia