

GreenCulture: A Digital Learning Tool to Foster Sustainable Behaviour Among University Students

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Abstract

Sustainable development has become an urgent global priority, with higher education institutions positioned to play a pivotal role in cultivating environmental awareness and shaping sustainable behaviours among students. At Universiti Malaya (UM), ongoing sustainability initiatives align with the United Nations Sustainable Development Goals (SDGs); however, many existing campaigns encounter challenges related to limited student engagement and difficulties in assessing long-term impact. Addressing these gaps, this study introduces GreenCulture, a mobile application designed to encourage eco-friendly habits through an interactive, student-centred digital platform. The application integrates gamification features, carbon footprint tracking, and sustainability-themed challenges to enhance motivation and promote consistent behavioural change. Its development follows an Agile methodology, incorporating insights from student surveys and stakeholder interviews to ensure relevance, usability, and user-centred design. Although the full feature set of GreenCulture is still being expanded, the technical development phase is currently in progress, with an initial working prototype already produced. This paper presents the early-stage prototype and outlines the ongoing development process, contributing to the broader discourse on digital sustainability engagement in higher education. The preliminary findings highlight strong student interest in personalised, game-based sustainability tools and underscore the potential of digital interventions to complement existing campus initiatives. Overall, this work provides a foundation for subsequent refinement, pilot testing, and empirical evaluation, with the long-term goal of supporting more impactful and measurable sustainability engagement at UM and similar institutions.

Keywords

Sustainability Education, Gamification, Mobile Application, Student Engagement.