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DESIGN AND EVALUATION OF A MOBILE-FRIENDLY COLLEGE INFORMATION

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Abstract

College websites are important sources of information about courses, examinations, notices, contact details, and student services. However, a website that is difficult to navigate on a small screen or that does not follow accessibility principles can create barriers for students, including people who use assistive technologies. This study proposes the design and evaluation of a mobile-friendly college information portal using usability testing and accessibility checks. The objective is to determine whether a redesigned interface helps users complete common information-seeking tasks more successfully and with fewer errors, while also improving conformance with selected accessibility practices. A lightweight prototype will be developed using HTML, CSS, and JavaScript, with responsive layouts and accessible navigation, headings, labels, contrast, and form controls. The evaluation will compare an initial interface with an improved version using predefined tasks such as locating course information, finding an examination notice, and submitting an enquiry. Measures will include task completion rate, task time, user errors, automated accessibility findings, and perceived usability measured with the System Usability Scale. At the time of this draft, implementation and user testing have not been completed; therefore, no empirical results are claimed. The final paper will report observed measurements, discuss limitations, and identify practical design recommendations based on the evidence collected. The intended contribution is a reproducible, low-cost evaluation procedure for improving the usability and accessibility of college information portals.

Keywords: *responsive web design; college information portal; usability testing; web accessibility; WCAG 2.2; System Usability Scale*

3. PROPOSED METHODOLOGY AND SYSTEM DESIGN

3.1 Research

design The study will use a within-participant comparative design, subject to faculty approval. Each participant will test both the initial interface (Version A) and the improved interface (Version B). To reduce order and learning effects, participants should be assigned to different orders (A then B or B then A) as evenly as practical. The same task definitions and measurement rules will be used for both versions. If time or resources do not permit this design, the final paper must describe the actual alternative used rather than imply a withinparticipant experiment. RESEARCH FLOW Define portal requirements Design and develop responsive prototype Review accessibility and improve interface Recruit volunteers (future; with approval) Run usability tasks and collect measures Analyse data and report actual findings

Figure 2. Proposed research methodology flowchart; all implementation and testing steps are future work. 3.2 System requirements The prototype will include the following pages or modules: •Home page with clear links to the main sections and a small announcements area. •Courses and departments page with readable headings and structured information. •Examination notices page with dated, clearly labelled notices. •Contact and enquiry page with explicit labels, required-field indicators, and understandable feedback. •Shared navigation that remains usable at narrow and wide viewport sizes. The prototype should use fictional sample notices and non-sensitive demonstration content unless the institution has explicitly authorised use of its real content. It should not collect unnecessary personal information. If an enquiry form is included, a local demonstration or non-submitting mock form is sufficient for usability testing. 3.3 Technology stack The recommended stack is HTML5 for semantic structure, CSS3 for layout and responsive media queries, and basic JavaScript for small interactive behaviours such as a mobile navigation menu and form validation. A database and authentication are not required for the first prototype. The implementation environment may be a code editor and a modern browser; hosting may use a static hosting service if approved by the project supervisor. The final manuscript must state the actual browser, device, operating system, viewport sizes, and tool versions used. 3.4 Accessibility improvement checklist •Use semantic landmarks, a logical heading hierarchy, and meaningful page titles. •Provide descriptive text for meaningful images and empty alternative text for decorative images. •Check text/background contrast and avoid communicating status through colour alone. •Ensure keyboard access, a visible focus indicator, and a logical focus order. •Provide persistent labels, instructions, and understandable validation feedback for forms. •Use descriptive link and button names, and make interactive targets comfortable to activate. •Verify that content reflows without unnecessary horizontal scrolling at the tested viewport widths. •Manually inspect automated-tool findings and record false positives or items needing review. 3.5 System architecture

Figure 1 shows the proposed three-layer system architecture. A user accesses the portal through a mobile or desktop browser; the presentation layer displays responsive pages, while the client-side interaction layer supports the mobile menu and form validation. Portal information is represented as demonstration content; a database is not required for the initial prototype. CCESS RESPONSIVE PORTAL CLIENT-SIDE FUNCTIONS visitor Mobile or desktop browser HTML5 + CSS3 Mobile menu + form validation

Figure 1. Proposed system architecture (conceptual; not yet implemented).

4.1 PARTICIPANTS AND ETHICS

Table 1. Proposed usability tasks and recorded measures.

Task	Participant task	
T1	Locate the description of a specified course or department.	Success/failure, c errors
T2	Find a specified examination notice and identify its date.	Success/failure, c selections
T3	Locate the college contact information.	Success/failure, c
T4	Complete the demonstration enquiry form using supplied fictional details.	Completion, vali

5. EVALUATION AND EXPECTED REPORTING

The portal has not yet been developed and the evaluation has not been conducted. Therefore, there are no actual participants, measurements, or experimental results to report. The following outcomes are expected only and must be verified through future implementation and testing. After development, the proposed evaluation will compare task success, completion time, user errors, accessibility findings, and System Usability Scale (SUS) scores for the initial and improved interfaces. Any claim of improvement will be made only if supported by collected data. •Expected benefits include easier access to college information on mobile devices, clearer navigation, and improved awareness of accessibility barriers. These are anticipated benefits, not measured findings. •The proposed evaluation combines task-based usability testing, accessibility inspection, and subjective usability ratings. •The planned procedure can be repeated after future design changes. •If validated, the findings may offer practical guidance to colleges with limited development resources.

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