**Online Activity No. 8 and 9: Applying the User-Centred System Design Process**

**Objective**

1. Innovate an existing interactive system and computer technology.
2. Perform and apply UCSD.

**Materials**

* Personal computer
* Any software for (Computer aided designs)or programming language

**Background**

Atakan(2006), UCSD is used in the design process. Reasons are evaluated why traditional-technology-focused design processes why it may result in unusable systems-and the consequences of those unusable or useless systems. This leads directly to a consideration of the different methodologies that go to make up a user-centered system design process.

**Procedure**

1. Identify a scope or agenda
2. Format for the document is given below as guide for the designers in the making the output both the document and design.

**Chapter I. Introduction**

**Background of the study**

Having several usability issues, the current Student Information Kiosk System in our institution hampers the students' timely access to class schedules, grade inquiries, and enrollment updates due to a non-intuitive navigation system and inconsistent response from the kiosk system. Outdated interface designs not providing real-time feedback compromise the very standard of efficiency required of contemporary student services. That is why we propose a redesigned kiosk system with improved usability, real-time feedback, and a student-centered interface.

**Statement of the problem**

There is a lag between searching and fetching students' records from the kiosk system. Currently, what is experienced by students accessing their grades, class schedules, or enrollment status is long waiting time due to sluggish responses of the system and less immediate feedback. They often attempt their work again and become disgruntled, especially at peak times like enrollment or end-of-semester evaluations.

There is some confusion in operating the kiosks due to inconsistent nomenclatures and layouts. The current interface uses rather ambiguous labels (that is, "Academic Info" instead of "Grades") with inconsistent button locations, causing students to either lose their way or receive misdirections while working with the system.

There is no action-feedback acknowledgment, nor is there a confirmation when it is done or failed. After entering their student ID or selecting an option, the system is found to either give out a blank screen or delay for quite some time, leaving students to wonder whether the action was ever processed. Such forms of invisibility are therefore highly uncertain within the context and lead to unnecessary repetitions.

There exists no recovery for input errors, such as those with wrong input ID numbers. If students mistype an ID, the system will freeze or give the generic error message "Invalid", leaving users confused at best, because this message doesn't tell what actually went wrong or what they need to do to correct it.

**Assumption of the study**

It is assumed that, with the proposed design, incorporating a touch optimized UI, real-time loading indicators and better input validation will reduce expectation in waiting times for students and improve dilemma satisfaction. A home button, searching facility and error messages with suggestions will add to enhancing user freedom and control within the system.

**Significance of the study**

| **Beneficiary** | **Benefit** |
| --- | --- |
| College President | Gains insights from real-time usage reports to improve student services. |
| IT Department | Manages a more stable and user-friendly system that reduces maintenance needs. |
| Administrators | Efficient access to student data with fewer inquiries for manual assistance. |
| Faculty | Fewer redundant student questions on grades and enrollment. |
| Students | Can independently access their academic information quickly and easily. |

**Chapter II. Research Design**

**User-Centered System Design Process**

We have applied Atakan's (2006) UCSD methodology for guiding and designing with respect to understanding and prioritizing user needs. The tasks that the team performed are task analysis, data gathering, storyboarding/prototyping, and heuristic evaluation.

**Task Analysis**

1. **Textual Task Flow (Hierarchical):**
2. Launch Kiosk Interface
3. Tap “Student Services”
4. Input Student ID Number
5. Choose from: View Grades, Class Schedule, Enrollment Status
6. View Result
7. Print or Go Back

**Visual Task Flow Diagram:**

Pgsql

Start → Student Services → Enter ID → Select Option → View Info → Print/Back

**Requirements Gathering**

The approaches we employed include:

To design a system that truly addresses student needs, we gathered requirements using **direct, hands-on methods** commonly applied in user-centered design. We focused on the actual experiences of students, faculty, and IT staff during peak periods like enrollment and grade release.

**1. Interview**

We conducted short face-to-face interviews with:

* **5 students** from various year levels
* **2 faculty advisers**
* **1 IT technician assigned to kiosk maintenance**

**Key Observations from Interviews:**

* Students admitted they **avoid using the kiosk unless absolutely necessary** because it's slow and confusing.
* A student mentioned, *“I have to guess which button shows my grades — it's not obvious.”*
* A faculty member said, *“We get so many students asking where to check their subjects. The kiosk just confuses them.”*
* The IT staff noted that *“Most problems are simple input errors, like typos in ID numbers, but the kiosk doesn’t help them fix it.”*

**2. Survey/Questionnaire**

A Google Form was sent to students via a Facebook group and email blast from the Registrar’s Office.

* **Respondents:** 53
* **Device used for survey:** Mostly smartphones
* **Response Timeframe:** 3 days

**Key Results:**

* **74%** said they were **not confident using the current kiosk without asking for help**.
* **81%** wanted the kiosk to show clearer messages when an error happens.
* **67%** preferred using their phone or laptop because the kiosk was "slow and outdated".
* Suggestions included adding a **“Back” button**, improving the **font size**, and using more **icons**.

**3. Observation**

We observed student behavior at the actual kiosk during **enrollment week** and **midterm results release**.

**Real Situations Noted:**

* Many students took a photo of the kiosk menu and asked classmates what to do.
* One student retyped their ID **five times** because the system gave no feedback after pressing “Enter.”
* Some students simply gave up and went to the Registrar’s window to ask for help instead.
* Users weren’t sure if they had completed an action because there was **no confirmation message** or progress indicator.

**4. Informal Usability Testing (Old System)**

We asked **3 volunteers** to use the kiosk without guidance and recorded their actions:

| **Action** | **Result** |
| --- | --- |
| Entered student ID | Nothing happened; user thought the system froze |
| Tapped “Academic Info” | Unsure what it meant; expected “Grades” or “Subjects” |
| Clicked on blank screen | Didn’t know it was loading; user restarted the entire process |
| Wanted to go back | No back button; user walked away frustrated |

**Requirements Specification (Realistic Detail)**

| **Requirement Type** | **Details (Real-world Findings)** |
| --- | --- |
| **User Requirements** | Buttons that are clearly labeled with common terms like “Grades,” “Subjects,” “Enrollment Status”; needs back and home options. |
| **Functional Requirements** | Fast and secure student ID validation; immediate display of relevant info after selection; ability to print results. |
| **Data Requirements** | Real-time access to student info from the college’s centralized student database (SIS). |
| **Environmental Requirements** | Must function on touchscreen kiosks placed in hallways or registration areas with ambient noise and glare. |
| **Usability Requirements** | Large buttons, no jargon, visual confirmation of user actions, and support for common errors like mistyped IDs. |
| **Designer Requirements** | Use of large icons, readable fonts, minimal typing, fast loading, and consistent interface elements throughout the system. |

Evaluation Criteria (Based on the 10 heuristics of design evaluation)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Area of Evaluation** | **5** | **4** | **3** | **2** | **1** |
| 1. **Visibility of System Status**  * - The system design provides appropriate feedback like message prompts in response to user actions. * The message prompts are clear, visible and understandable. |  |  |  |  |  |
|  |  |  |  |  |
| 1. **Match between the system and the real world**   - Used words, phrases and concepts according to users’ language rather than system oriented words and computer jargons. |  |  |  |  |  |
| 1. **User control and freedom**   - The system design provides ways of allowing users to easily “get in” and “get out” if they find themselves in unfamiliar parts of the system. |  |  |  |  |  |
| 1. **Consistency and Standards**  * - The colors, text, labels, buttons and other elements in the design are uniform from start to finish**.**   - Text and icons are not too small or too big.  **-** Menus and other features of the system are arranged and positioned in a consistent way. (For ex. If your website has navigation buttons on the top under the page title on one page, the users will automatically look there for the same features on other pages. |  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| 1. **Error Prevention**   - The system design provides an automatic detection of errors and preventing them to occur in the first place.  - Idiot proofing mechanisms are applied |  |  |  |  |  |
|  |  |  |  |  |
| **F. Help users recognize, diagnose and recover from errors**  **-** Error messages and the terms used are recognizable, familiar and understandable for the users. |  |  |  |  |  |
| **G. Recognition rather than recall**  **-** Objects, icons, actions and options are visible for the user.  - Objects are labeled well with text and icons that can immediately be spotted by the user and matched with what they want to do. |  |  |  |  |  |
| **H. Flexibility and efficiency of use**  - The system design provides easy to navigate menus.  - the system does not make wasteful time of system resources. |  |  |  |  |  |
| 1. **Aesthetic and minimalist design**   **-**Graphics and animations used are not difficult to look at and does not clutter (mess) up the screen.  - Information provided is relevant and needed for the system design. |  |  |  |  |  |
| 1. **Help and Documentation**   **-**the system design provides information that can be easily searched and provides help in a set of concrete steps that can easily be followed. |  |  |  |  |  |

**Chapter III. Conclusion and Recommendation**

**Conclusion**

This transformation of the Student Information Kiosk System is actually a response to very real situations that arise from its use by the students, faculty, and staff. It was observed, interviewed, and surveyed subjects to indicate that the system does not appear to be usable, clear, or even responsive-it greatly affects the user experience.

The User-Centered System Design (UCSD) process in application enabled the team to understand users not just as technical system operators but individuals with expectations, frustrates, and goals. The redesign addresses the most important problems of confusing navigation, lack of feedback, and failure of recovery from the mistake of hitting the wrong ID number while logging into the application.

The system is now equipped with clearly labeled options like 'Grades' and 'Enrollment Status', real-time feedback after every action, error prevention through input validation, and an intuitive layout tailored for quick use under touchscreen kiosks. Such features were developed not from guesswork but by taking consumer input and observing how actual users make use of a system.

**Recommendations**

Based on our experience in this project, we strongly recommend the following:

1. **Implement iterative testing** – Continue user testing even after deployment to refine the design further based on ongoing student feedback.
2. **Train support staff** – Ensure that Registrar and IT staff are familiar with the new system to assist users effectively.
3. **Add multi-language support** – For institutions with diverse student populations, a language toggle (e.g., English, Filipino) would improve inclusivity.
4. **Include accessibility features** – For users with visual impairments, features like text-to-speech and high-contrast options should be considered.
5. **Extend online accessibility** – Develop a web or mobile version of the kiosk system so that students can access the same services remotely.

**Insights and Learning (Human-Computer Interaction Focus)**

This project indeed asserts that good design is not based on assumptions but about understanding real users. Through the study of Human-Computer Interaction, the course developed an understanding of cognition load, error tolerance, interface feedback, and user freedom as fundamental attributes to any digital system.

One of the key realizations is that a system can be 100% functional but still fail through lack of usability; hence, involving users from the start and valuing their feedback completely changed our approach to design. UCSD then helped us build empathy and make very conscious design decisions that prioritize user experience as much as performance.