**CIS 2170 - Lab 5**

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**Lab Section 1**

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**Part 1**

**Usability**

When I hear the term “usability”, first thing that pops up in my head is how easy to use a certain thing or how versatile it is. However, if I think about this matter in a design perspective, I think it means how intuitive it is for users to identify things in UI.

Uber: A Positive Example of Usability

Uber exemplifies good usability due to its intuitive design, clear interface, and smooth user experience. According to Usability 101, usability is defined by five key components: learnability, efficiency, memorability, error reduction, and satisfaction. Uber effectively meets these criteria:

Learnability – New users can quickly understand how to book a ride without needing instructions. The onboarding process is minimal, and essential functions such as entering a destination, selecting ride options, and confirming a trip are straightforward.

Efficiency – Once familiar with the app, users can book a ride in just a few taps. The app remembers frequently used locations, streamlining the process further.

Memorability – Even after a long period of inactivity, users can easily return to the app and book a ride without confusion due to the consistent and predictable interface.

Error Reduction – The app minimizes potential errors by providing fare estimates, real-time tracking, and clear ride details. Users receive confirmation prompts before booking and alerts if an address is incomplete or incorrect.

Satisfaction – The visual design of Uber plays a key role in its usability. Its color scheme and layout design are well-structured, making key actions easy to find. The real-time tracking feature further enhances user satisfaction by providing transparency on the ride’s arrival and progress.

Uber's strong usability ensures a seamless experience, making it a prime example of well-designed software that aligns with usability best practices.

Amazon: A Poor Example of Usability

In contrast, Amazon's interface often struggles with usability due to information overload and complex navigation. While Amazon is feature-rich and offers a vast selection of products, its interface does not effectively align with usability principles:

Learnability – New users may struggle with navigating the website due to excessive menus, numerous recommendations, and cluttered pages filled with advertisements and promotions.

Efficiency – The large number of options, buttons, and filters can slow down the shopping process. Users often have to sift through unnecessary details to complete a purchase.

Memorability – Returning users may struggle to find specific features, such as order tracking or account settings, due to inconsistent placement of buttons and frequent layout changes.

Error Reduction – The website can be overwhelming, leading to mistakes such as selecting incorrect product variations or missing important details about a purchase. Additionally, misleading product listings from third-party sellers can contribute to user frustration.

Satisfaction – While Amazon provides extensive functionality, its hectic and visually crowded layout reduces user satisfaction. The homepage is often overwhelming, filled with multiple banners, promotions, and recommendations, which can make it difficult for users to focus on their primary shopping goal.

**Usability Testing**

To improve the usability and enjoyment of our “Fun Light Switch” concept, we could run a moderated in-person test where participants interact with a physical prototype of the switch in a mock-up environment. The facilitator would prompt users to turn off the lights within the given time to avoid the annoying music, as well as highlight the money-saved statistics. This think-aloud protocol would allow us to observe any confusion or difficulties and to gather direct feedback about what users find motivating or frustrating. We could then refine aspects such as the placement of the countdown indicator, the timing of musical cues, or the clarity of cost-saving information.

We would be less likely to use methods such as eye tracking or diary studies for this project. Eye tracking would be complex and less meaningful in a physical-switch context (compared to a traditional screen interface), and diary studies wouldn’t be as useful because the idea hinges on quick, in-the-moment interactions rather than extended usage over time. By focusing on simple, direct user testing (particularly with a prototype), we could gather practical, real-world insights early and make iterative design changes to ensure the switch remains intuitive, engaging, and fun.

**Best Method We Chose**

It’s Dylan’s method

Improving the usability of our Fun Method approach to the light switch, would benefit from a qualitative approach to know how users feel about using the product and gaining insights from their feedback. Also, an un-moderated remote approach could suffice, which would allow the user to spend perhaps a day or two to use the light switch, since it is an everyday item and get back to us after they have had proper time to come to a conclusion on how they feel about the product and how it could improve. We could also test quantitatively, how often the user turns off the light in time, as well as the average time the light stays on per day, compared to a normal non-fun light switch. Both of these tasks would involve the participant to have the light switch in their home and they would be asked to note each time they used it, and their opinions on how much more they are inclined to save energy by turning off the light with this approach, they would then get back to us with the information for analysis.

Reasons why we choose Dylan’s

1. I was thinking in person was more appropriate with this testing but I was convinced that the light switch method has to be tested for at least one or two days and un moderated remote approach can produce the most reliable results considering the duration of testing. (Soohwan)
2. I chose Dylan's approach because he explains how in the remote testing the light switch would be tested over a couple days within the user's own environment. Which would probably be more suitable for the user and preferred by the user. This way, the testing is more accurate and less distracting.(Noah)
3. I like Dylan's method because it gives real data, making it easy to see how well the switch works. Letting people use it in their daily lives gives more honest reactions instead of quick first impressions. I like the idea of tracking how often they turn off the light compared to a regular switch to see if it really encourages energy saving habits.(Connor)

Goal: The main goal of this usability testing is to make sure we find which light switch concepts the users like the most through unmoderated remote testing where user's have the freedom to test the light switches in their own homes at their own pace. We ultimately want to come up with an solution to our ecological problem which is saving energy

Participants:

We could talk people of all ages. This way we can see how younger children interact with the light, and how the elder find the usability of the light. This way we get a wide range of people to better understand how user interact with our product.

Tasks:

Participants would be asked to set a timer, attempt to turn off the light before the countdown and try to let the timer finish. While using the light switch like how they otherwise would.

Collected Data:

Participants would use the light switch as they normally would over a set period, we could track when they turn off the light and whether they do so before or after the timer. Since the testing is also unmoderated, they could record their own experiences, noting if the sounds and progress indicator influenced their behavior.

Recruitment Process:

We will recruit a broad demographic to ensure inclusive feedback about the Fun Light Switch. Specifically, we will look for participants spanning different age groups (children, adults, and older adults) to see how users of various skill levels and familiarity with technology respond. We plan to post a brief recruitment notice on local community boards, social media, and relevant online forums. Interested individuals can sign up through a simple form where they will confirm they have a standard light fixture at home and indicate a convenient time frame for testing. Each participant will receive a small incentive (e.g., a gift card) once they complete the test and submit their feedback.

Facilitators:

For an unmoderated remote test, there is no live, in-person facilitator guiding participants moment-to-moment. Instead, one or two test coordinators will oversee the entire process from a distance. Their responsibilities include:

Preparing and Shipping Prototypes - Coordinating the distribution of the Fun Light Switch devices (or prototypes) to participants’ homes.

Providing Instructions - Sending clear, written guidelines on how to install and use the switch, how to set up the timer, and how to record feedback.

Collecting Data - Creating and distributing an online feedback or logging form to gather participants’ usage data (e.g., if they turned off the light before the countdown ended, how they felt about the sounds or stats display).

Following Up- Sending reminders and/or clarifications if participants have questions or technical issues, but without directing how they use the switch during the test (to avoid biasing results). Although the coordinators are available to troubleshoot if needed, they do not actively moderate participants as they interact with the device. This approach encourages natural usage and realistic feedback, aligning with the goal of unmoderated remote testing.