INCLUSIVE DESIGN AND ACCESSIBLE TECHNOLOGY

Assignment 7

Project Overview

This is a group assignment (2-3 persons per group). You will look for real-world transportation technologies that may pose usability problems for people with disabilities. You will generate design ideas, and you will **redesign a transportation technology of your choice** and present your design in class during critique. This assignment assesses your ability to apply principles of ability-based design and consider the diverse needs of users with disabilities in the context of transportation.

Project Detail

Overview

You are being asked to redesign a transportation technology using the Ability-Based Design Process. **Ability-based design** is a concept related to designing products, environments, or technologies with a focus on accommodating and empowering individuals with varying abilities and disabilities. It involves creating inclusive and accessible designs that consider the diverse needs and capabilities of users. Ability-based design is often associated with principles of universal design, which aim to make products and spaces usable by as many people as possible, regardless of their age, size, ability, or disability. Please see the reading within this module for a full description of ability-based design.

Process:

- **Identifying a transportation technology (5%).** You should identify and ideally use a transportation technology that might be used by a person with a disability or an older adult. **A transportation technology, for the purposes of this assignment, is any machine, device, tool, etc., that enables or supports a human being to travel from a point of origin to one or more destinations.** An appropriate technology might be a passenger vehicle, an airline kiosk, a train ticket machine, etc. The definition being used for this project is intentionally broad with the goal of encouraging you to think deeply and not simply select the obvious. OURS WILL BE THE **NYC FERRY system**.
- **Define the Scope and Goals (5%):** Determine the specific goals and objectives of the redesign. What are the primary issues or limitations of the current transportation technology design that need to be addressed? Define the target audience, including individuals with different abilities and disabilities who will use the transportation technology. It is acceptable to focus on one disability specifically.
- **Research the Technology (10%):** Familiarize yourself with your selected technology and related research (e.g., conference or journal articles), implementations (e.g., are there versions or types of this technology?), and community sentiment. Does this technology have a poor reputation for accessibility from the disability community? Are there web or video logs about it? Has research been done on the use of this technology by people with disabilities?
- **Research Accessibility Guidelines (10%):** Familiarize yourself with relevant accessibility guidelines and standards, such as the Americans with Disabilities

Act (ADA) and Web Content Accessibility Guidelines (WCAG). These guidelines provide essential principles and criteria for designing accessible interfaces and physical spaces. There may also be other domain or device-specific guidelines that may be relevant.

- **Audit Existing Design (10%):** Evaluate the current transportation technology's design for accessibility shortcomings. Identify any barriers that may prevent individuals with disabilities from using the kiosk independently. Nielsen's usability heuristics or similar should be used in this step.
- **Redesign (40%):** Create 4 redesigns that specifically address the accessibility barriers (breakdowns) of the original design.
- **Consider Ergonomics and Reach (10%):** Design the transportation technology's physical layout to ensure that all interactive elements, including input devices and screens, are within reach for users of different heights and mobility levels.
- **Describe a test/evaluation process (10%):** Describe the details of a usability testing strategy. What are the specifics of the process that you would use to evaluate your redesign

Deliverables:

You will produce a single PowerPoint presentation that addresses all phases of the design process. **You will have 20 minutes in class to present.**

The assignment will be graded based on the percentages provided above. Additional grading guidance is provided below in areas that I believe may need additional clarification:

Identifying a Transportation Technology (5%)

Full Points: Clearly identifies the transportation service or technology to be redesigned and provides a comprehensive explanation of the accessibility challenges faced by people with disabilities. Exceeds expectations in identifying and describing accessibility issues. Accurately identifies and explains accessibility challenges.
Reasons for points deduction: Adequately identifies accessibility issues but lacks depth. Identifies only some accessibility challenges or provides insufficient explanation. Fails to identify accessibility challenges.

Research the Technology (10%)

Full Points: Conducts thorough research on existing solutions, accessibility standards, and best practices related to a specific technology. Demonstrates extensive and well-documented research. Conducts effective research and cites relevant sources.
Reasons for points deduction: Conducts basic research but may lack depth or comprehensive sourcing. Research is limited, lacks depth, or includes irrelevant information. Fails to conduct adequate research.

Redesign (40%)

Full Points: Applies ability-based design principles effectively, considering a wide

range of disabilities, and integrates them into the redesign concept. Applies a comprehensive set of inclusive design principles. Develops a creative and innovative redesign concept that addresses accessibility challenges and significantly improves the transportation service or technology. Presents a highly creative and innovative redesign concept that is well-thought-out. Develops a solid redesign concept that addresses accessibility challenges effectively.
Reasons for points deduction: Applies ability-based design principles, though it may overlook some aspects. Applies a basic understanding of ability-based design principles but with notable omissions. Applies limited ability-based design principles with significant oversights. Fails to apply ability-based design principles design principles. Presents a feasible but somewhat conventional redesign concept with minor shortcomings. Presents a rudimentary redesign concept with several gaps or impractical elements. Fails to present a viable redesign concept.

Presentation Tips:
An Excellent presentation: Delivers a clear, engaging, and well-organized presentation of the redesign concept, including visual aids and effective communication of ideas. Presents with exceptional clarity, engaging visuals, and effective communication. Delivers a well-structured presentation with clear visuals and mostly effective communication.
An 'OK' presentation: Presents adequately but with some organizational issues, unclear visuals, or communication challenges. Presents with significant organizational problems, unclear visuals, or ineffective communication.
A 'Poor' presentation: Fails to present ideas clearly and effectively. |