UI & UX Design
SWE 4833

Types of Design

Zannatun Naim Sristy & Sabrina Islam
Lecturer, CSE, IUT
E-mail: sabrinaislam22@iut-dhaka.edu

User Vs. End User

User: The user refers broadly to anyone who may use or maintain a product. Include people such as system administrators, IT experts, and computer technicians.

End User: The specific person or audience, for whom UX designer creates something for. Or, the person ultimately intended to use a product.

For example, a medical device may have a variety of users including doctors and technicians. They may use the device for monitoring and helping patients set up their device or interpret its readings. The end-user of this medical device would be the patient who needs to interact with the interface on a regular basis.

User Experience

"User experience" encompasses all aspects of the end-user's interaction with the company, its services, and its products. How an end user feels about interacting with or experiencing a product.

Goals of a good user experience:-

- Does it solve the problem of the user?
- Is it efficient to use?
- Is it easy to learn?
- Does the product delight the user?
- Is the product equitable?

But how to access the user experience?

—> *"There is no substitute for personally watching and listening to the real people"*
–Larry Page, Founder, Google

Types of Design (Based on targeted end users)

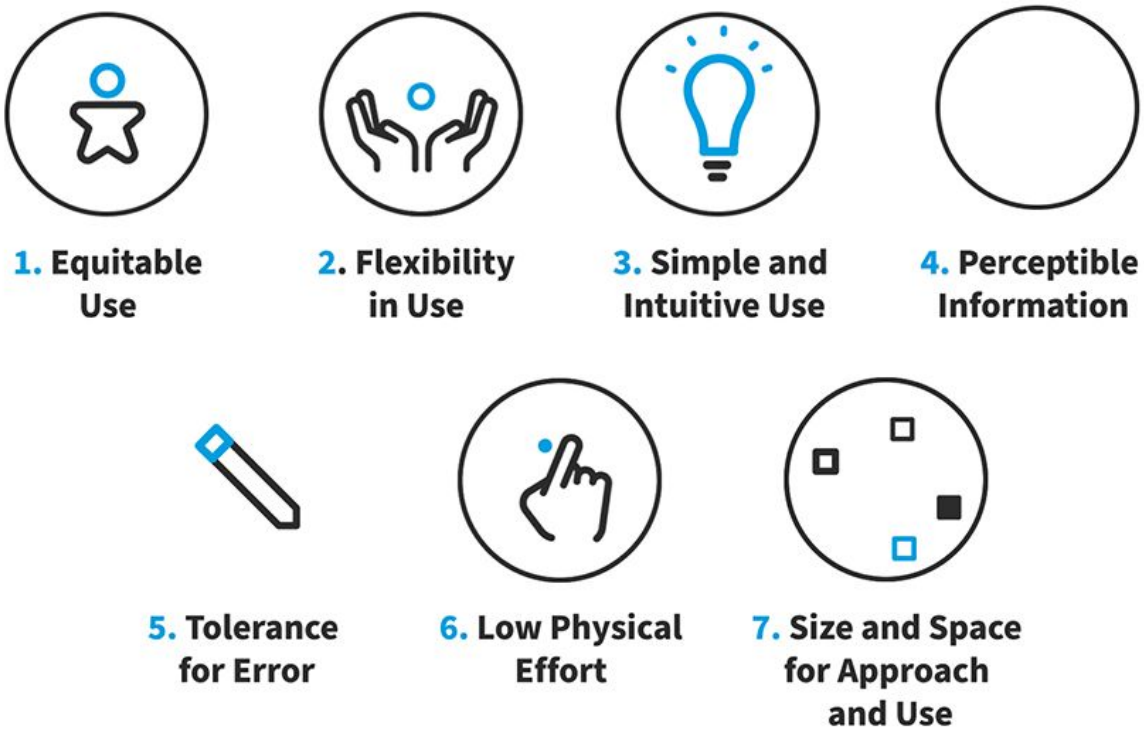
- Universal Design - One size fits all
- Inclusive Design - Solution for one that extends to many
- Equity-Focused Design - Promote groups that have been excluded in the past.

Universal Design

Universal Design is the design and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability. This basically means that a designer is creating something for the largest amount of people to use. There is a “normal” or an “average” that is trying to be achieved.

While universal design has often been used as a framework for designing for digital products, the initial idea referred to architecture and interior design.

Universal Design (Principles)



Universal Design (Cons')

When you focus on creating one solution for all, the designs lose their effectiveness. It's often difficult to achieve any goals with your product when you have so many intended users.

- **It's Actually Not Universal at All** - "There simply isn't enough time to address every specific person's needs when there are hundreds of people to serve. "
- **It's Bland and Tasteless** - "Just as many people find opera music boring and may prefer pop music instead, your niche audience might not appreciate your highly sophisticated design work."
- **It Only Comes in One Size** - "In trying to make a desk work "for all," it ends up not fully working for anyone, especially those with non-average needs."
- **It's in the Wrong Language** - "You will need to adjust your communication style depending on the age range, income bracket, or education level of your viewers."

Inclusive Design

Inclusive design means making design decisions that take into account personal characteristics such as ability, race, economic status, language, age, and gender. Inclusive design involves researchers and designers from traditionally excluded populations in the process so that they can bring their unique perspectives to all stages of the design process.

Its is about empathizing with users and adapting interfaces to address the various needs of those users. With inclusive design, you solve a problem for one type of user, and the benefits of that solution can extend to many other types of users. No one should be excluded from using a product we have designed just because we did not consider their needs in the design process.

Example:
Closed captions: While it was designed for deaf/hard-of-hearing, many people benefit from reading closed captions.

Inclusive Design (Principles)

1. **Recognize exclusion:** Acknowledge bias and recognize exclusions that happen because of mismatches between people and experience.

2. **Learn from diversity:** Puts people in the center throughout the process. Their fresh, diverse perspectives are the key to true insight.

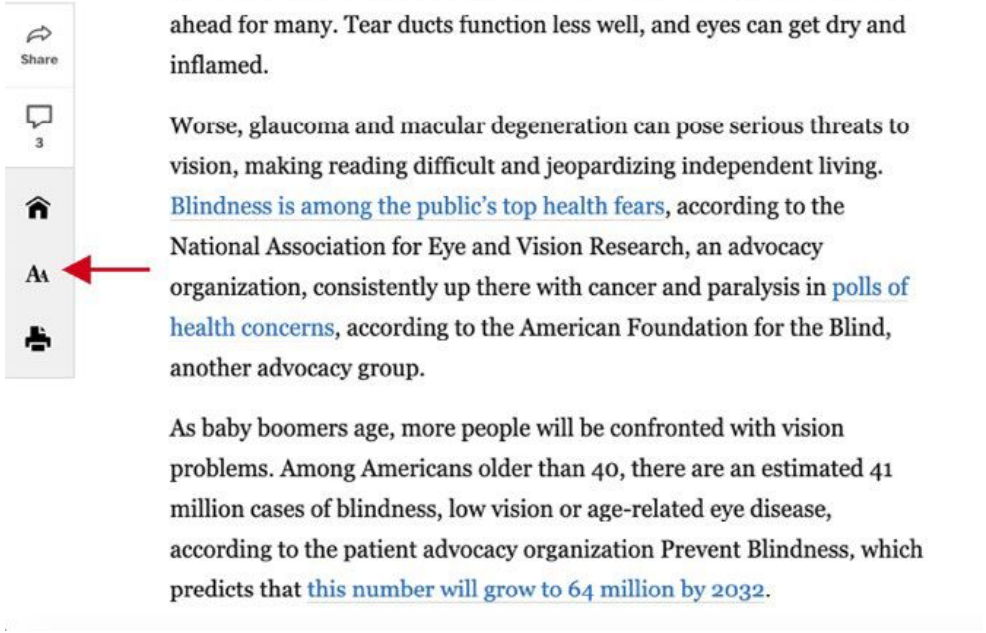
3. **Solve for one, extend to many:** Everyone has abilities and limits. Creating products for people with permanent disabilities creates results that benefit everyone.

Inclusive Design (Example)

Curb cut

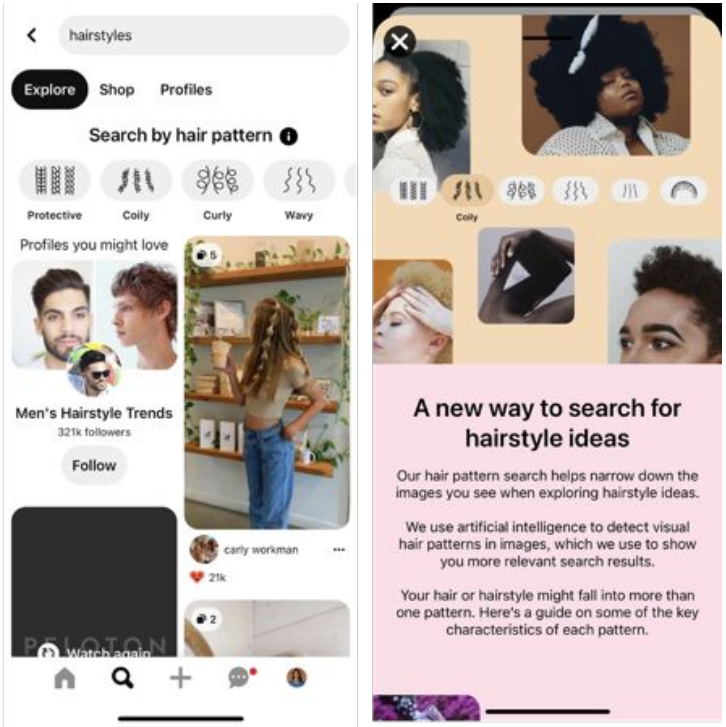
Inclusive Design (Example)

Text Legibility and Dark Mode for Older Users



Inclusive Design (Example)

Inclusive Facets



Inclusive Design (Example)

Diverse Illustrations

Universal design Vs. Inclusive design

Universal design

- Enforces a single design solution without need for adaptations or specialized design.
- More widely used in tangible and environmental contexts (after all, it's costly to produce multiple functional variations of a physical object or space).

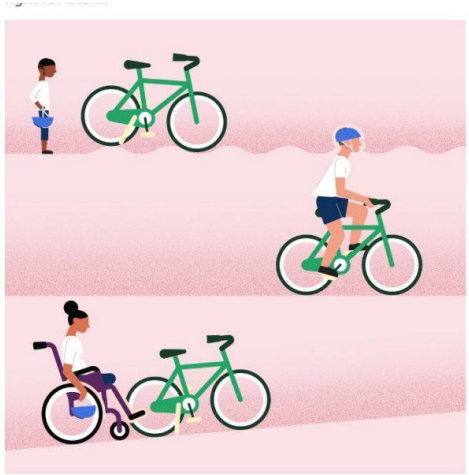
Inclusive design

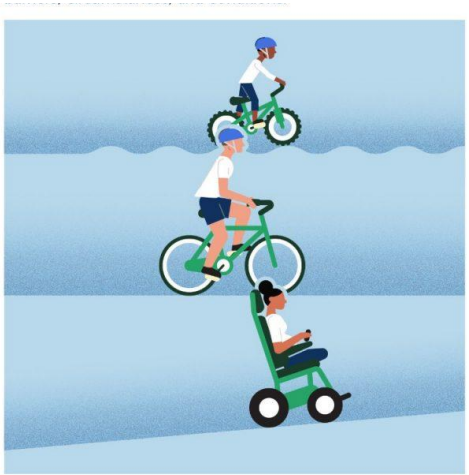
- Accepts and embraces multiple design variations so long as they achieve the desired outcome.
- Applied more frequently to digital-product design because its relatively cheap and easy to adapt such interfaces.

Equality Vs. Equity

Equality means providing the **same** opportunities and support **to all** segments of society. In other words, everyone gets the same thing

Equity means providing a **different level** of opportunity and support for each person **to achieve fair outcomes**.





Equity-Focused Design

Equity-focused design aims to design products that meet the needs of specific people in groups that have been underrepresented or excluded in the past.

Equity design uses targeted approach to achieve change. This focus is coming to the forefront of the design world due to mass protesting across the world against racist systems against individuals of color.

One of the key reasons why equity-centered website design matters so much is because it helps define your brand identity, support equity and equality, and sends a powerful message to the world. Equity-centered design is a great tool for minority-run and minority-focused brands, especially NGOs and non-profit organizations.

Example website: https://secmol.org/

Inclusive design Vs. Equity-Focused design

Inclusive design

- Designing products for groups of people who are currently excluded.

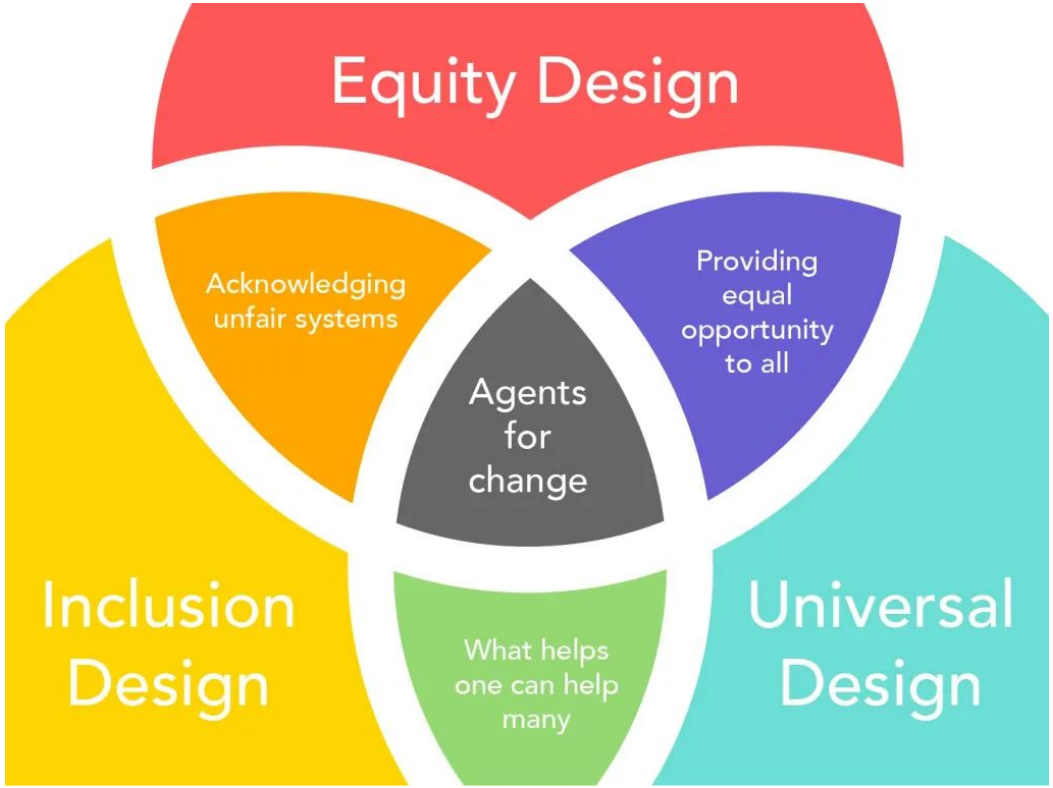
Equity-Focused design

- Meet the needs of specific people in groups that have been excluded in the past.

Differences of Universal, Inclusive and Equity-Focused Design

Feature	Universal Design	Inclusive Design	Equity-Focused Design
Focus	Anticipation and removal of barriers	Inclusion through understanding and incorporating diversity	Addressing systemic inequities
Approach	Reactive	Proactive	Transformative
Goal	Prevent exclusion	Include diverse users	Create equitable access and outcomes
Impact	Wider range of accessibility	Inclusiveness for specific groups	Systemic change to address disparities

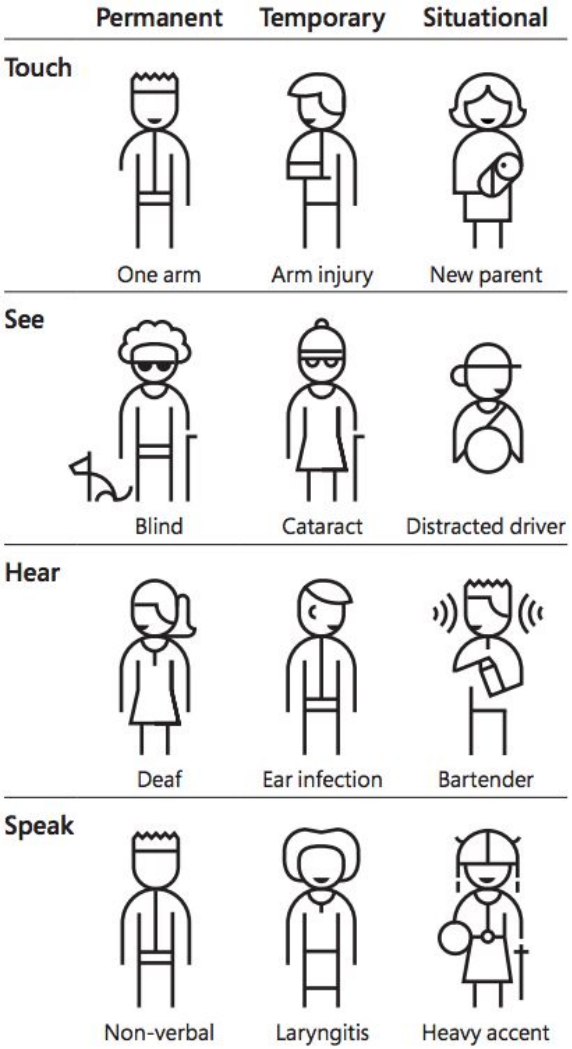
How They Interact



Accessible Design

Accessible design is a design process in which the needs of people with disabilities are specifically considered. It sometimes refers to the characteristic that products, services, and facilities can be independently used by people with a variety of disabilities.

Accessibility often brings benefits to other users too.



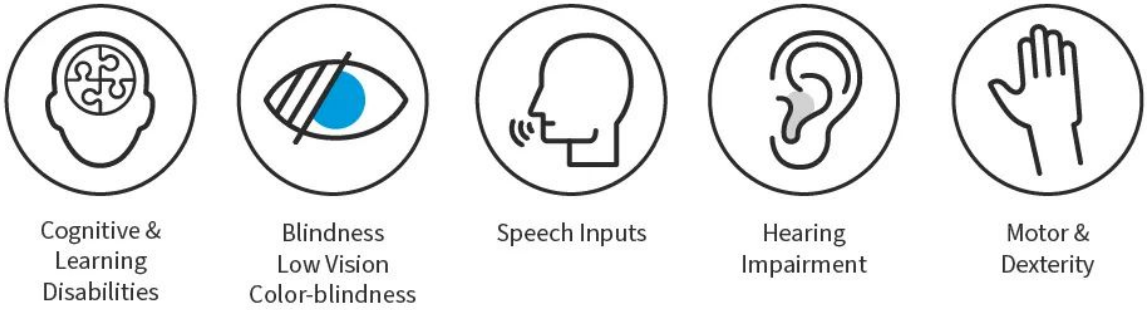
Types of Accessibility Issues

These are common barriers:

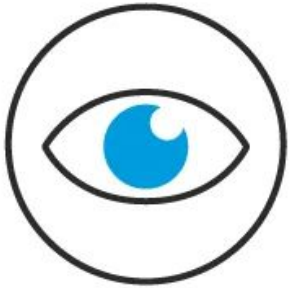
- Visual (color blindness)
- Motor/mobility (wheelchair)
- Auditory (hearing difficulties)
- Seizures (photosensitive epilepsy)
- Learning/cognitive (dyslexia)

Ability barriers can also arise for any user:

- Incidental (sleep-deprivation)
- Environmental (using a mobile device underground)



Accessible Design (Principles)



1.Perceivable

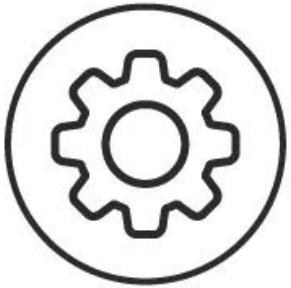
Distinguishable
Adaptable
Available via sight, hearing and/or touch.

2.Operable

Responsive to User Accessibility technologies
Navigable

3.Understandable

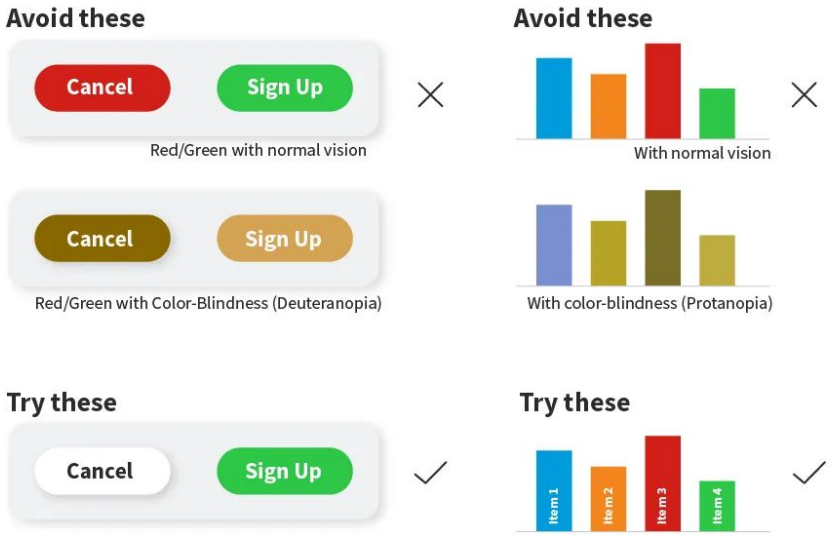
Readable
Predictable
Clear labels & instructions



4.Robust

Flexible
Compatible with a variety of mediums

Accessible Design (Example)



Accessible Design Benefiting others (Example)

- **Text Legibility:**
  High-contrast text that helps people with vision difficulties also helps people with perfect eyesight who are using the app outdoors in bright sunlight.

- **Closed caption:**
  Video captions that help people with hearing difficulties also help a person who is watching the video on mute.

Accessibility Is One Outcome of Inclusive Design

While inclusive design and accessibility are not the same thing, accessibility is one of the primary outcomes of an effective inclusive design process.

Accessibility on its own, though, will leave out large sections of the population who don't have a defined, legally recognized disability but may have issues interacting with interfaces based on particular circumstances in their environment. Inclusive design actively seeks out those diverse situations, which include disabilities, and aims to address them.

References:

1. https://uxspot.io/equity-a11y.html
2. https://eileenasher.com/2020/07/11/designing-for-good-universal-vs-inclusion-vs-equity-design/
3. https://universaldesign.ie/about-universal-design/the-7-principles
4. https://inclusive.microsoft.design/
5. https://equitydesigncollaborative.com/
6. https://careerfoundry.com/en/blog/ux-design/universal-vs-inclusive-design/#universal-or-inclusive-design-which-is-best-for-ux
7. https://www.toptal.com/designers/ui/inclusive-design-infographic