

# Diversity and Inclusion in Design

# Diversity, Inclusion, Accessibility

- Diversity → Variety (in users; their needs, backgrounds, cultures, attitudes, devices, infrastructure)
- Inclusion → Include as many groups as you can (make sure you don't inadvertently exclude them!), or make your interfaces accessible to as many groups as you can
- Accessibility → All about making interfaces “Accessible” to some people, especially people with disabilities

# Dimensions of disabilities



Disabilities can be:

- None to complete (and a whole range of partial)
- Temporary or permanent (e.g., cut finger vs. amputated arms for touch devices)
- Congenital vs. later (e.g., blind from birth vs. lost eyesight due to diabetes / old age)

Each affects people's skills, attitudes, etc. differently

- In general, attempting to help on population (extreme worst), helps a whole bunch on the spectrum – “curb cut effect”

# Other dimensions of diversity/inclusion

- Physical and cognitive
- Socio-economic status (subscribe and save, coupons)
- Cultural (e.g., colors and events in image tagging)
- Tech infrastructure (support button phones, battery consumption, choppy network coverage, lack of electricity, hardware constraints, software costs, etc.)
- Skills
- Literacy

It's essential to include all kinds of people that might be in your user base, both for social justice reasons and also for business reasons!

# How do we design for these people?

- <https://brandemic.in/accessibility-and-inclusivity-in-ux-design/>
- <https://pictureimpact.co/low-literacy/>
- <https://www.99dots.org/> -- scroll below to see their very elegant solution!
- A whole lot of features, can you think of some?
- Look for inspiration elsewhere, and abstract ideas when you must do this!

# Ethics in research design

- Any study involving human participants needs to be ethical
  - In data gathering and gathering
    - Preserve privacy, confidentiality and handle data with utmost care
    - Anonymization vs. pseudo-anonymization of data
  - Participant rights
    - Informed consent: Inform of the procedure, ask for consent, allow to withdraw
    - What about deception?
  - Researcher protection
    - Non-disclosure to protect IP and for study reliability
    - What if data is already used, and participant wants to withdraw?
  - Vulnerable populations, compensation and power hierarchy!

# Readings

- Skim through Lazar, Chapters 15, 16
- But, read 15.3 carefully

The last lecture:  
some golden advice



# Design for errors

- Users make errors
  - They make slips (accidental, like typos) and mistakes (logical errors)
- Design to prevent both!
- If you can't, make it easier for users to find and fix them!

# The two gulfs

- Dan Norman's "The design of everyday things" says that

Almost always, two gulfs are at the root of all evil in UX design

1. Gulf of execution:

- How do I do something from my current state?

2. Gulf of evaluation:

- How do I know if what I did is right (or if not, what did I just do)?

Good designs reduce these gulfs, by making things obvious

# The productivity bias

- No one reads manuals (Atleast most don't, and not for everything)
- So, fixing gulf of execution and evaluation is not a 100 page manual
- People also don't want to waste their time reading manuals, instead get stuff done (they're not paid to read manuals, but to finish tasks!) this is called productivity bias.
- Therefore, aid people accomplish tasks, with good labels, task-specific help, etc.

# Make decision making easy and informed

- Decision making is all about costs and values
- What is the **value** of an action?
  - Is this link an ad, or something valuable to my task, and so should I click on it or not?
- What is the **cost** of a choice?
  - Is this a video and so cost me 20 min and a headache, or crisp instructions?
  - Is this jargon instructions, or a clear video showing how to do something?

# When an interface has a lot going on...

- User has to make a lot of decisions (what link to click, what button to press, what menu to click on and search for an option in, etc.)
- Make **obvious** what the costs and values of choices are.
  - E.g., tooltips, “5 min read/video length”, snippets, good image labels, etc.
- Make actual costs and values **optimal**
  - Provide good value (e.g., provide search to filter only good value ones, don’t put ads in between, do not put unrelated content together)
  - Provide low-cost options as appropriate (e.g., jump to top, home button, FAQs, hover to see reference on Wikipedia instead of scrolling down, TLDR for long essays, etc)
  - Provide simple and advanced versions (e.g., scientific vs regular calculator, advanced settings, etc.) to lower cognitive costs as needed.

# Some practice-oriented books worth reading

- The design of everyday things, Dan Norman
- Don't make me think, Steve Krug
- The inmates are running the asylum, Alan Cooper
- Designing with the mind in mind, Jeff Johnson

