



Experience Design: Learners & Users

Trigger Warning

Today's topics include circumstances that can lead to poverty and violence, how they affect learning, and how we can mitigate the effects.

Outline

Understanding Users: Maslow's Hierarchy of Needs

Designing for a User: Affordances

Avoiding Design Pitfalls: User Profiles



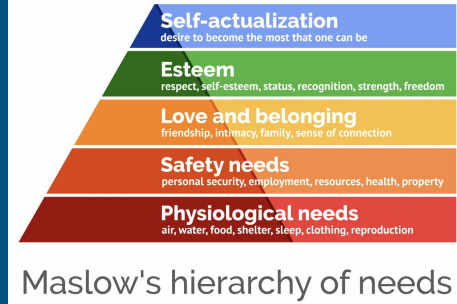
Understanding Users





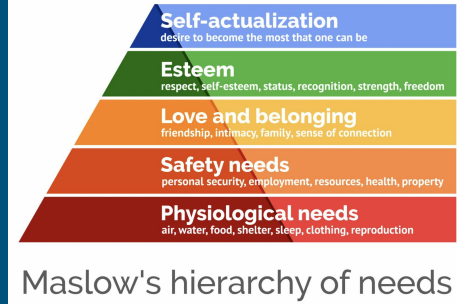
Maslow's hierarchy of needs

Hierarchy of Needs



- What outside life circumstances could negative effect learning and why?
 - Fearing for safety takes up mental energy at school
 - Insecure about intelligence - less willing to ask questions
 - Lack of sleep, illness, less energy, distracting
 - Not feeling loved -> distracted, thinking about your loneliness / sadness
 - lack of belonging makes it harder to connect to students in classroom and collaborative learning
 - Hunger - some children just can't think straight
 - No clean clothes - embarrassment and not paying attention or truancy
 - less access to schools, less well-funded schools, fewer resources

Hierarchy of Needs



- Effects on learning
 - Trauma is distracting
 - Hunger is distracting
 - Fear is distracting
 - Pain is distracting
 - Bullying has academic consequences
 - Students who don't belong
 - Stereotype threat: internal
 - Bias, discrimination: external
 - Students who are curious learn more
 -

Different poverty influences



Hunger

School quality / resources
based on local taxes

Lack of clean clothes

Access to menstrual
products (truancy)

Less safe neighborhood

Access to enrichment as well
as computers / internet

Less help for school work bc
of long working hours, less
education of parents

Less heating -> less sleep

Needing a part-time job to
help family

Imposter syndrome, not
feeling they deserve extra
help

Embarrassed they can't
afford things others can

Different security influence



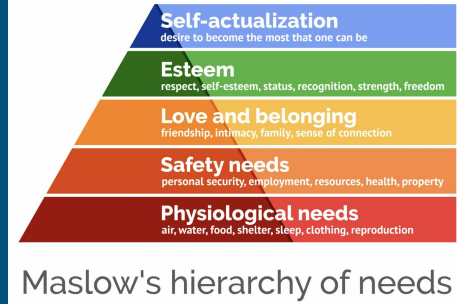
Maslow's hierarchy of needs

Anxiety - distracting

Lack of trust in authority figures (e.g. teachers)

Truancy - path the school isn't, hiding bruising,

Different belonging influences



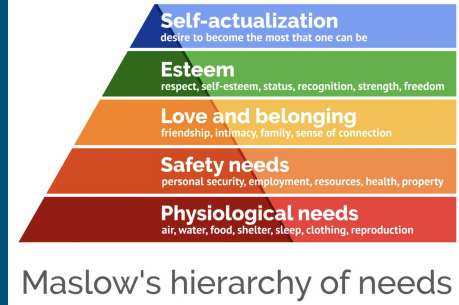
Distracted

Collaborative work might
be less effective

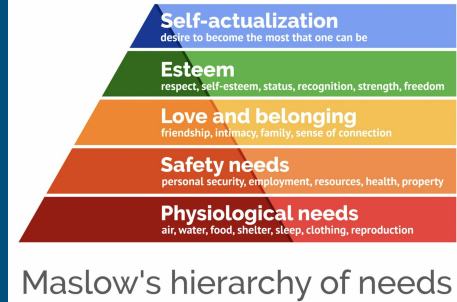
Bullying may lead to
missing school

Decrease motivation

Different esteem influences



Breakout 1: Helpful Programs

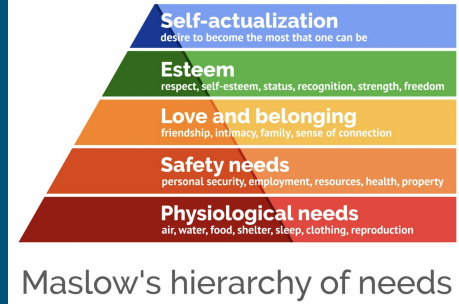


- What programs could help with deficiencies?
 - Free school lunches / breakfast bars
 - Financial literacy workshops
 - Community centers for after school
 - Bussing for transportation
 - Counseling / mental health services
 - Bullying awareness - Social / Emotional curriculum
 - Tutoring programs
 - Uniforms
 - Washer & dryer in the school
 - Had a staff member work with every family to sign them up for social programs

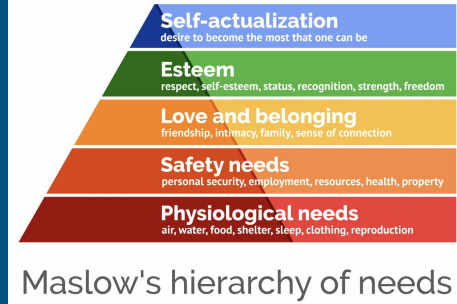
What programs might help? (in and out of school)

In School

Out of School



Hierarchy of Needs



- What programs could help with challenges?
 - Social programs to provide food, shelter, clothing
 - Washer / Dryer in schools (clean clothing)
 - Social Emotional Learning programs (bullying, anti-trauma)
 - School identity development (belonging)
 - Free after-school programs, libraries, etc. (safety)
 - Crossing guards, safety corridors (safety)



Affordances: Designing for a User

Affordances



Blind Spots: Novices vs Experts



How did / would this activity feel to someone who doesn't read music?

<https://www.youtube.com/watch?v=4IRMYuEihI>

Guitar Hero Musical Notation



Design fails for females / ethnic minorities

A lot of games don't have hairstyles that represent black people

PPE equipment didn't fit women correctly & ethnic minorities

Car crash test dummies used to be exclusively the height and weight of males

Air bags

Seat belts for women who are pregnant

Medical research was performed on white males of a certain age

Major symptoms lists tend to focus on symptoms of white males

Facial recognition does not properly analyze African-Americans' faces

Voice recognition for people with accents and some names

Design fails for females / minorities

- Air bags
 - Crash test dummies were adult male sized
 - Killed children and small females in passenger seat
 - Killed small female drivers from steering wheel airbag
- Ill-fitting PPE (masks too large and won't seal)
- Body armor doesn't account for female chests
- Facial recognition software (minorities falsely accused)
- One-size-fits-all clothing
- Voice recognition software
- <https://www.theguardian.com/lifeandstyle/2019/feb/23/truth-world-built-for-men-car-crashes>

Design successes

- Volvo female design team (2004)
 - Parallel parking assistance
 - More compartments (for handbags)
 - Recommended seat position based on body dimensions

Avoiding Pitfalls: User Profiles

Mix of challenges (in school, out of school)

Mix of backgrounds

Mix of academic skills

Mix of personality traits

Caveat: We **don't** want profiles to be sexist or racist based on stereotypes,
We **do** want ones based on realistic circumstances.

Example: A profile of a girl who is bad at math or Asian boy who is a math whiz
(bad - reinforces false beliefs about genetics and harmful stereotypes)

Example: A profile of an immigrant family that fled gang violence in El Salvador
(good - makes you think deeply about someone's challenging situation)

Breakout #2: User Profiles

Design **four user profiles** of a middle-school or high-school student. They must represent a variety of design targets that could result in different design decisions. Therefore, across them, they need to have different hobbies, academic strengths and weaknesses, gender and ethnicities. I have specified one aspect of each user, but you also need to balance the other attributes across the four profiles