

Accessibility & Universal Design in SWE

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Overview

- **Why Accessibility?**
- **What is Universal Design?**
- **Why Me?**
- **Obstacles**
- **Ramps**
- **Concluding Thoughts**

What is not accessible in *your* life?

**What is not accessible
in *your* life with tech?**

HCI and computers

- **Initially, computer were so expensive, people-time cheap**
- **In time, this reversed**
 - **Many cycles of a modern computer involve the interface**
 - **Plus, it will not sell (*i.e.*, Apple)**
- **Thus, make the most people happy ⇒ success!**

SW Engineering and people

- **We teach correctness and efficiency, but ...**
- **... practically, “fastest wins” (i.e., efficiency)**
 - **Agile development, rapid prototyping, fail fast, ...**
 - **“Hardware eventually fails. Software eventually works”
-- Michael Hartung**
- **... get it work as fast as practical for the most people possible**
- **... “retrofitted accessibility”**

Why Accessibility?

The Office for Civil Rights (OCR) at the U.S. Department of Education defines accessibility as meaning “when a person with a disability is afforded the opportunity to acquire the same information, engage in the same interactions, and enjoy the same services as a person without a disability in an equally integrated and equally effective manner, with substantially equivalent ease of use.” [[link](#)]

Why Universal Design?

- **Accessible computing was a response to mainstream computing (*i.e.*, popular > accessible)**
 - **Accessibility was retrofitted**
- **The solution should not create another “inaccessibility”**
- **Universal Design is an ideal, never completely realized**
 - **The universe is big, and always changing**

Why Me? Disability Happens.

- Daughter Eva
- Sons Peter & Quinn
- Father Jack
- Students
- Brother Patrick (& cs100 Sp 2005 story ...)

I have found many in support for PWDs have such a story

Obstacles to Universal Design

- It's hard
- It's not well defined
- More things to fail
- People
 - “Engineer-thinking”
 - Visibility



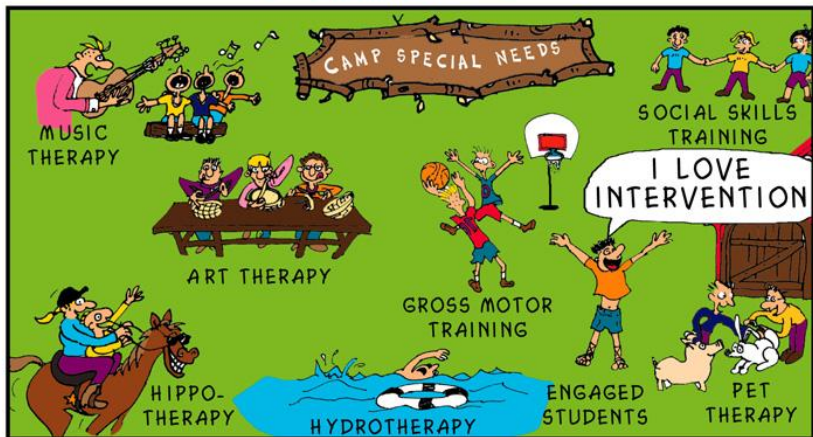
“PAROLE APPROACH”
TO SCHOOL INCLUSION

SW Ramps

- **Accessibility/UD from the start**
 - **Speech recognition**
 - **Flexible interfaces**
 - **hi-contrast/dk background**
 - **Alt-text support**



**CLEARING A PATH
FOR PEOPLE WITH SPECIAL NEEDS
CLEARS THE PATH FOR EVERYONE!**



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Language Matters

IMHO ...

UD > accessibility

> disability support

- Promotes inclusive
- More common
- More dimensions

DISABILITY LINGO
GOES TO CAMP!

Concluding Thoughts

- **Ethical, morale, just, “the right thing to do”**
 - Equity, fairness, inclusive
- **Good consequences**
 - More people to use your applications ⇒ \$\$\$
 - Promotes diversity
- **Disability can occur at any time (*i.e.*, self-motivation)**