Universal Technology for Living

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Centre for Excellence in Universal Design

National Disability Authority

Centre for Excellence
in Universal Design
Lárionad Foirfeachta
i nDearadh Uilíoch

nDA
National Disability Authority
Údarás Náisiúnta Míchumais

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Universal Design and the aims of the Centre

How technology makes us feel

Examples of ICT design guidance for Intellectual Disability

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What is 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

(Synopsis of the Disability Act 2005)

Universal Design aims:

- "to maximize the number of [people] who can readily use a product, building or service which may be achieved by:
- (i) designing products, services and environments that are readily usable by most users without any modification,
- (ii) by making products or services adaptable to different users (adapting user interfaces), and
- (iii) by having standardized interfaces to be compatible with special products for persons with disabilities."
- (ISO, CEN, NSAI)

Aims of the Centre

Standards

– Stimulate research

– Participate in Standardisation work nationally and internationally

– Provide advice to stakeholders

– Encourage compliance

**Education and Professional Development**

– Incorporation into design curriculum

– Application of Universal Design for Learning approach to teaching and examinations

Awareness

– Best practice database

– Promote awareness and understanding

7 Principles of Universal Design

- Principle 3: Simple and Intuitive Use
  - Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

  - Guidelines:
    - 3a. Eliminate unnecessary complexity.
    - 3b. Be consistent with user expectations and intuition.
    - 3c. Accommodate a wide range of literacy and language skills. 3d. Arrange information consistent with its importance.
    - 3e. Provide effective prompting and feedback during and after task completion.
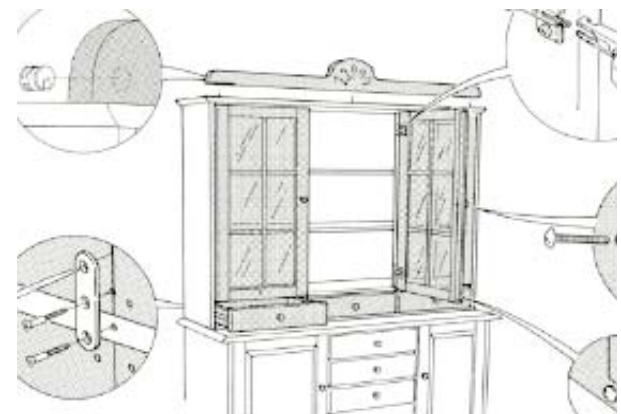
How technology makes us feel
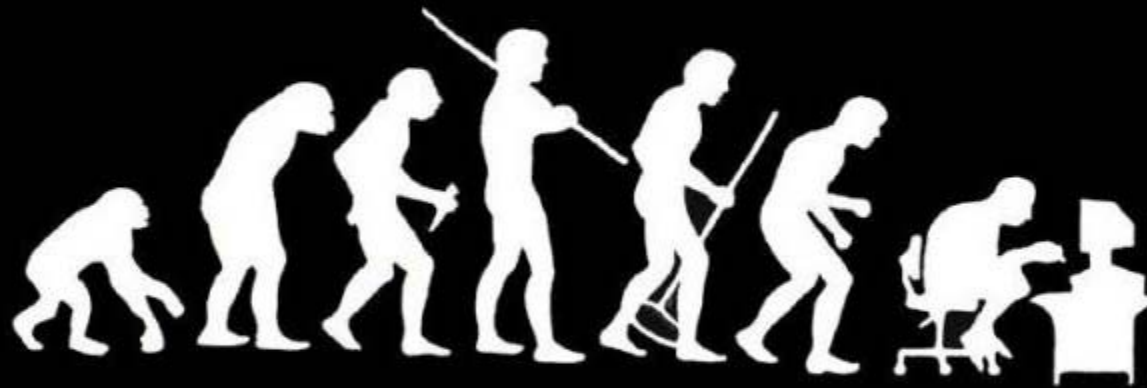
Something, somewhere went terribly wrong

How technology makes us feel

"I can't do what she suggests due to either stupidity or incompetence!"

NEW!

zapi
zaps the germs

TOOTHBRUSH
SANITIZER

keeps your
toothbrush
germ-free!

ANTIBACTERIAL

works with
manual brushes
& electric heads

IT ROCKS!

ultraviolet light
eliminates up to
99% of bacteria
on your toothbrush

free toothbrush
included!

zapi

NEW!

Bad design excludes

"Science Finds, Industry Applies, Man Conforms"

"Good" vs. "Bad" design

- After a century of rapid technological innovation and development

- Philips (2004) "The Philips Index: Calibrating the Convergence of Healthcare, Lifestyle and Technology. "

"The only important thing about design is how it relates to people"

Victor Papanek (1970)

# Design for the Digital Age
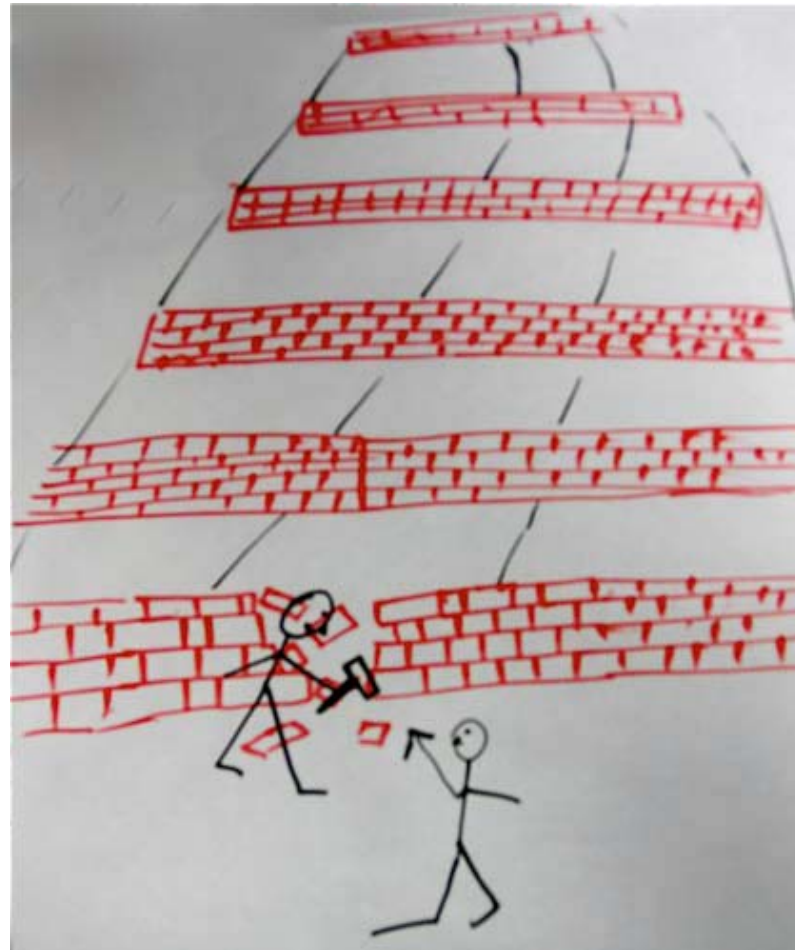
Reaching designers

"I think addressing intellectual disabilities is a LOT harder than other types. As a sighted, physically able person, I can approximate for a little while what it's like to be blind (close my eyes) or paralyzed (force myself to sit still). No, these are not exact matches, but I can use those techniques to help imagine and empathize with those conditions.

But there's no way I know of to even begin to simulate cognitive disability. I can't even really imagine what it's like to be less (or even more) intellectually capable than I am. That's the extra challenge I think ID advocates face."
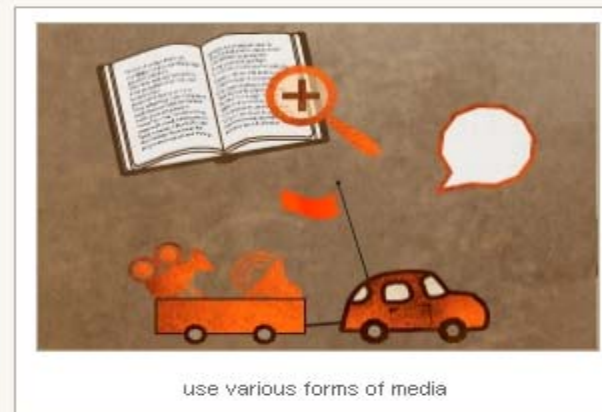
Eric Meyer – leading web designer

Inclusive New Media Design:

- including people with intellectual disabilities in the web
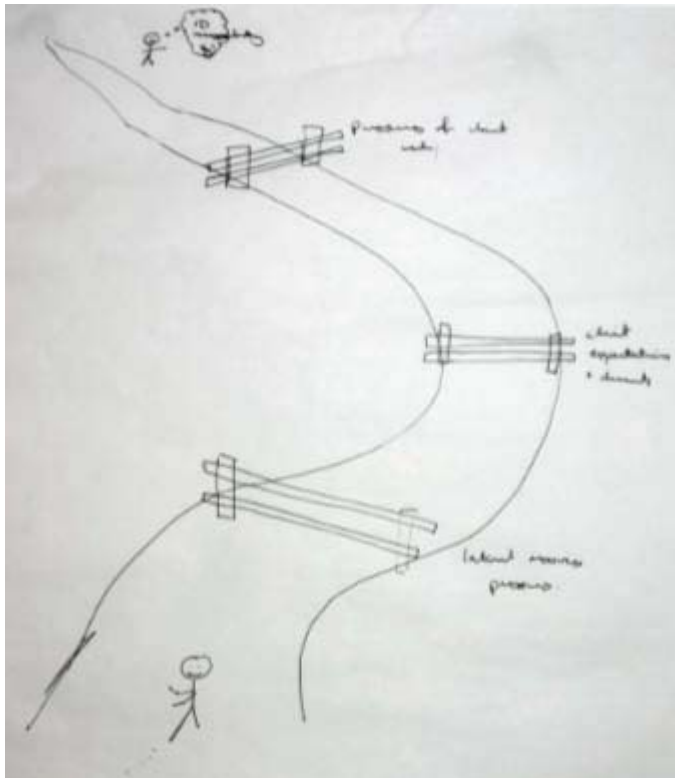
Top tips

- **Test:** Test your site with intellectually disabled users. Even better, involve people with intellectual disabilities when you are building your site.

- **Pictures:** Use lots of images. Images are important. They are core content, not just decoration, for people with intellectual disabilities. Use icons for links, and symbols to supplement text.

- **Choices:** Keep the menu choices simple, and limit how many there are – five is enough for this user group.

- **Text:** Use big text. Keep your writing simple. Use short sentences, short paragraphs and simple words.

- **Media:** Include audio versions of all content, so users can listen to it instead of reading it. Video and animation also go down well with this user group.

test to ensure accessibility

use various forms of media

Some apps and games

Nintendo Wii

- Wii's wireless remote control
  - Detects directionality
  - Speed of acceleration
  - not surface bound and easier for some individuals to grasp
- Gives non-judgemental "internal" feedback
  - Good for cause and effect exercises
- Encourages physical exercise
  - 80% of people with an intellectual disability do not get the recommended 30 mins per day exercise
- Encourage social interaction in a safe and controlled environment
- Games not 'special' – do not lag behind current trends in design
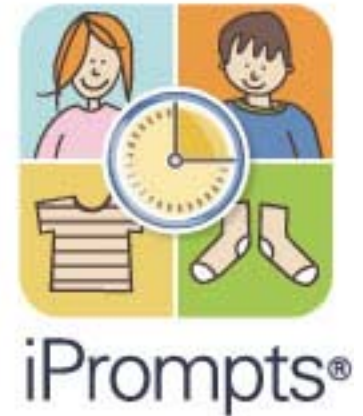- A cheap alternative input device for computers

iPrompts® by Handhold Adaptive

- Visual support to non-verbal and behavioural challenges, including autism and ADD/ADHD
  - Replaces flash/prompt cards
  - No bulky or stigmatizing binders or strips of images
- Carer/teacher can create a library of pictures or use existing ones

http://www.handholdadaptive.com/iprompts.html

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Standards, Education, Awareness

Case Study

The OXO "Good Grips" range of kitchen utensils began with a goal: to produce a vegetable peeler that was easy to hold and use, regardless of strength or manual dexterity. This resulted in OXO applying a Universal Design approach when designing any of their kitchen products.

» Read more case studies and examples

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Welcome!

The Centre for Excellence in Universal Design is dedicated to enabling the design of environments that can be accessed, understood and used regardless of age, size and ability. We do this by contributing to the development and promotion of standards, education courses and awareness. More on CEUD's mission

Explore & Discover

Discover what is Universal Design, its Principles, background and history, related policy and legislation. See the benefits of adopting Universal Design.

Go to Explore & Discover »

Teach & Learn

Find an educational or training course on Universal Design, see what current research is happening or browse publications on Universal Design.

Go to Teach & Learn »

Use & Apply

Apply the Principles of Universal Design to the Built Environment, Products and Services or in IT and the web through the use of standards and guidelines.

Go to Use & Apply »

Get involved

> Learn about the Principle of Universal Design
> Come to an event on Universal Design
> Join the Universal Design for ICT mailinglist
> See relevant guidelines and standards

Latest

> **6th Apr:** Career opening - Product designer
> **5th Mar:** Published new design standards
> **11th Feb:** CEUD announce 3 new educational partners

About the Centre

> What we do
> The CEUD's vision
> Main activity areas of the CEUD

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The CEUD is part of the National Disability Authority
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CEUD IT Guidelines

- 5 technology areas
  - Web
  - Public access terminals
  - Application Software
  - Telecoms
  - Smart Card Systems
  - Digital TV – coming soon...

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