Co-designing using Inclusive Design Practices

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Rethinking Disability

Notion of Disability in Design

- Disability = a mismatch between the needs of the learner and the educational environment and experience offered
- Not a personal trait
- A relative condition

Accessibility =

- Ability of the learning environment to adjust to the needs of all learners
- Flexibility of education environment, curriculum and delivery
- Optimizing the learning environment for each individual learner

The magic at the margins

- the edge case and the edge scenario
- innovation
- benefits the majority
- supports the spectrum
- resiliency

What is Co-design?

Co-design is…

What co-design is not:

- Us versus Them – observing people
- Expecting others to do the “work” of design
- Fixed, pre-determined design process

What co-design is:

- Collaborative
- Responsive
- Iterative
- Diverse and Broad

Digital Mismatch

5 minutes

- Find and discuss an example of a digital mismatch between a learner and an interface or content

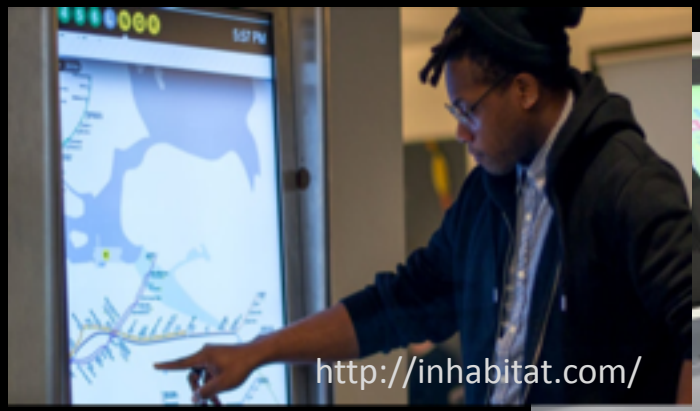
One-size-fits-one

Justina Kochansky/articulatematter.com

One-size-fits-one

- Flexible
- Accessible
- Meet users where they are

Why Personalized Interfaces?



DEMO

Learner Options

DEMO

Video Player + Learner Options
multi-modal

GPII:
Global Public Inclusive Infrastructure

- Preferences in the Cloud
- Wherever you go your settings are applied

GPII

Metadata

- Why it's so important
  - Matching your needs and prefs to content
- Some auto-generated
- Users can augment to improve resource for others — crowdsourcing

DEMO

Authoring Tool

Group Exercise

- Describe an edge case story
- Describe a Use Case
- Create a Mindmap (structure, flow)
- Solve for mismatch (design solution)

Group Exercise

Agnes Gibson

- age 38
- used to be a mechanical engineer; extremely organized
- works part-time as a gardener for the city
- likes cats, going to vet school at Northern College in Timmins in the companion animal physical rehabilitation program
- divorced, 2 kids (ages 10 & 7) who live with her former spouse
- has financial concerns since she's going back to school
- low vision, macular degeneration; has a guide dog Elbow
- interested in diversity of layout; gets tired using one modality all the time
- she likes Vivaldi and 1993 grunge (Eddie Vedder)

Group Exercise

- she needs to read & analyze articles, for her part of a group project;
- she receives data in charts and graphs from other students in class which she needs to interpret or use
- sometimes these are accompanied with the data sets they have been generated from
- she has a sample data set for cat blood pressure statistics that she needs to include in the group project.
- school has access to JAWS and she has magnification software

Group Exercise

- How could you meet Agnes' needs
- Tiptoe into sketching/solving for Agnes with a design or interface

Basics about Agnes

- In Vet school
- Needs to work with graphs and charts
- Prefers different modalities (text, audio, video, etc.)

What's Next

- Simulations
- Dashboard
- Mobile
- Sonification! added to charts and graphs — bleeding edge — we'd love your help and feedback
  - Pie
  - Line
  - Venn Diagram

Simulations

Action On load.

Outcome Scene is described to non-visual user.

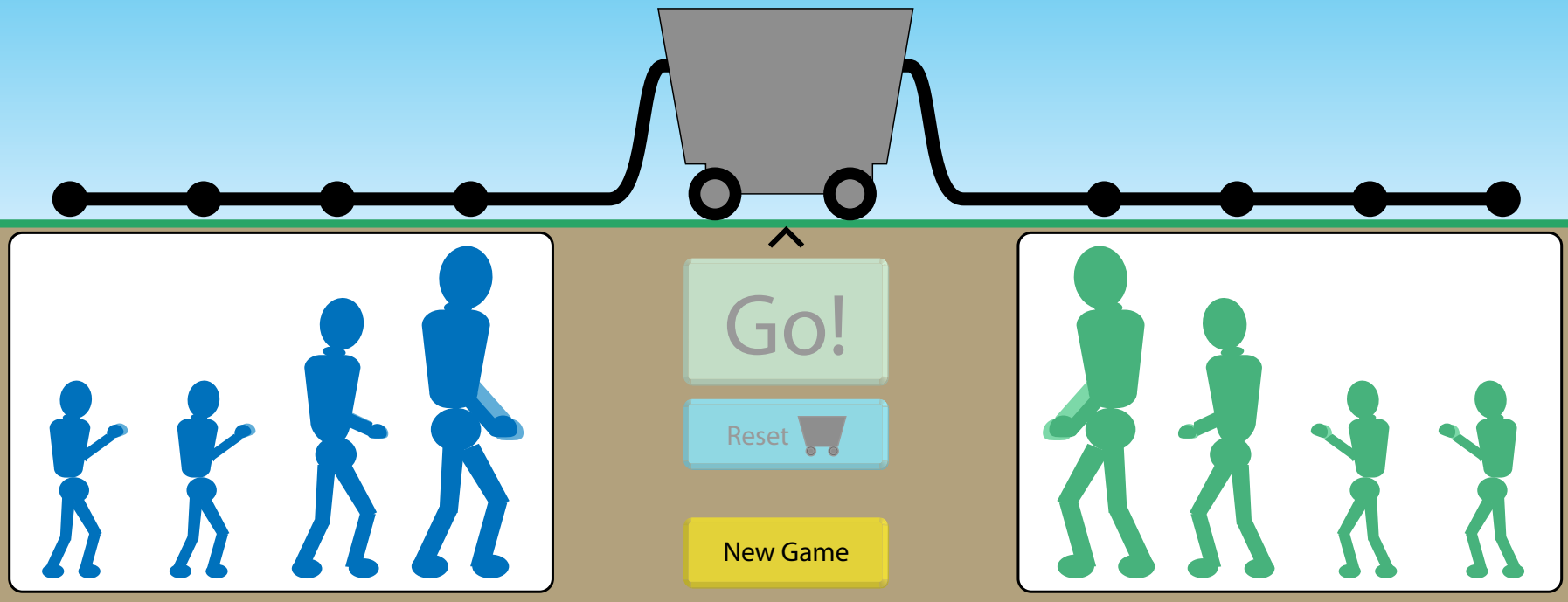
Non-visual feedback "Forces and Motion Basics. There is a heavily loaded cart on wheels sitting on a track. Attached to the left side of the cart is a thick 8 foot rope with 4 large knots spaced at equal intervals. Standing near this knotted rope is a group of 4 people. On the opposite side of the cart, a similar rope with 4 large knots is attached to the right side of the cart. There is another group of 4 people - they are standing near this other rope. The centre position of the cart has been marked on the ground."

Description of keyboard controls can be given too:
"Tab key moves focus around areas in the game.
Arrow keys moves selection.
Enter key to choose or perform an action."

Show:

- Sum of Forces
- Number Values

Keyboard instructions



Forces and Motion: Basics

1:1 scale with current Forces and Motion simulation.

DEMO

Sonification

Sonification

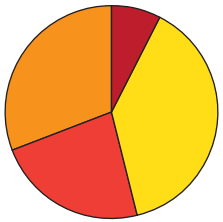
CREATE A PIE CHART

Give your chart a name: Name

Type in your values:

Value	Description	
Value	Description	
Value	Description	
Value	Description	

add value



Select a color scheme:

No Color

Select a texture:

No Texture

Adjust the outline thickness:

0 — 1 — 5

Select a label to present info on the chart:

No Label | % | value | % value | info. value

Select a sound category:

- No Sounds
- Vocal Sounds
- Sounds from Nature
- Instrumental Sounds

Piano | Flute | Harp | Drums | Guitar

Select a slice signifier:

No Signifier | Silence | Bell | Clap | Snap

Select a Chart Unit Reference:

No Unit Reference | Slow | Average | Fast

Custom Theme

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