

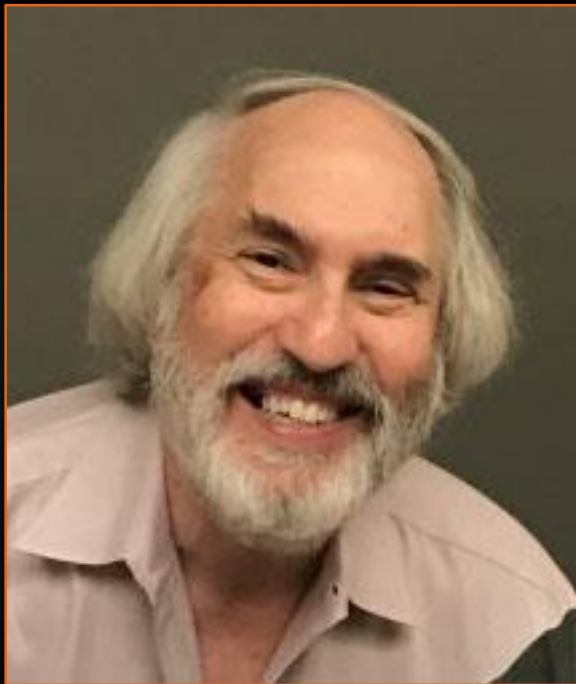
February 9, 2021

Assistive Tableware for Persons with Cognitive Impairments



ENGR110/210

Perspectives in Assistive Technology



David L. Jaffe, MS
Instructor

15
Years

Questions, Comments, Suggestions, or Concerns?



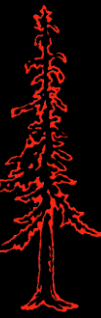
Please notify me of your comments, suggestions, and concerns so I can explain / address / correct them.

Apology



- ▶ Sharing on the Mid-term Presentation Signup Sheet
- ▶ More time to discuss “Ethical Dilemmas”

Attendance



- ▶ Attendance Sheet has been discontinued
- ▶ Zoom analytics lists attendees and duration of their participation
- ▶ Let me know if you are unable to arrive on time or must leave early
- ▶ Watch Zoom video of missed portion of the class session
- ▶ Make up missed class sessions

Upcoming class sessions



- ▶ The Design and Control of Exoskeletons for Rehabilitation –
Katherine Strausser, PhD - Thu, Feb 11th
- ▶ Mid-term Student Project Presentations –
Tue, Feb 16th



Students working on projects

Expected Activities for Fabrication Projects

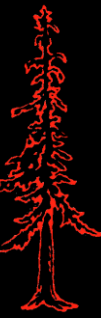


- ▶ Connect with project partner
- ▶ “Understand the Problem”
- ▶ Brainstorming
- ▶ Select Design Concept(s)
- ▶ Meet with me
- ▶ Sketches, low resolution prototypes
- ▶ Preparing for Mid-Term presentation and Report
- ▶ Reimbursement for materials ~ \$50
- ▶ 3D printing



Students working on projects

Mid-term Presentations Update



- ▶ Mid-term presentations will be 3 minutes, no slides, no screen sharing, informal, not graded – **but be professional**
- ▶ **“Elevator Pitch” & Update the Boss**
- ▶ **Include feeling & emotion**
- ▶ All students working on the same project will present together
- ▶ Async students can submit a 3 minute video
- ▶ Presentation tips on course website
- ▶ **Signup Sheet has been posted for presentation order**

Students working on projects

Mid-term Report Update



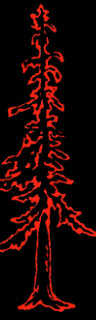
- ▶ Mid-term report - **10 pages maximum** - of narrative submitted collectively by all students working on the same project
- ▶ Suggested format different for fabrication vs non-fabrication projects
- ▶ Include sketches and photos
- ▶ Goal: short, concise, well-written, and highly readable report with few grammatical and spelling errors.
- ▶ **Report Writing Tips document suggested report features**

Reminder - Work with Diligence



- ▶ Time is your most precious resource
- ▶ One week until Mid-term Presentations - Tue, Feb 16th
- ▶ Practice your presentation!



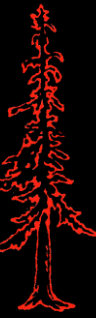


Overview of Accessibility



A11y

What is Accessibility?



Accessibility is a:

- ▶ Property
- ▶ Design concept
- ▶ Design specification
- ▶ Design consideration
- ▶ Design goal
- ▶ Product feature



What is Accessibility?

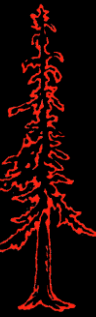


That enables people:

- ▶ Individuals with disabilities:
 - ▶ Sensory
 - ▶ Physical
 - ▶ Cognitive
 - ▶ Neurological
- ▶ Older adults
- ▶ Kids
- ▶ Everyone

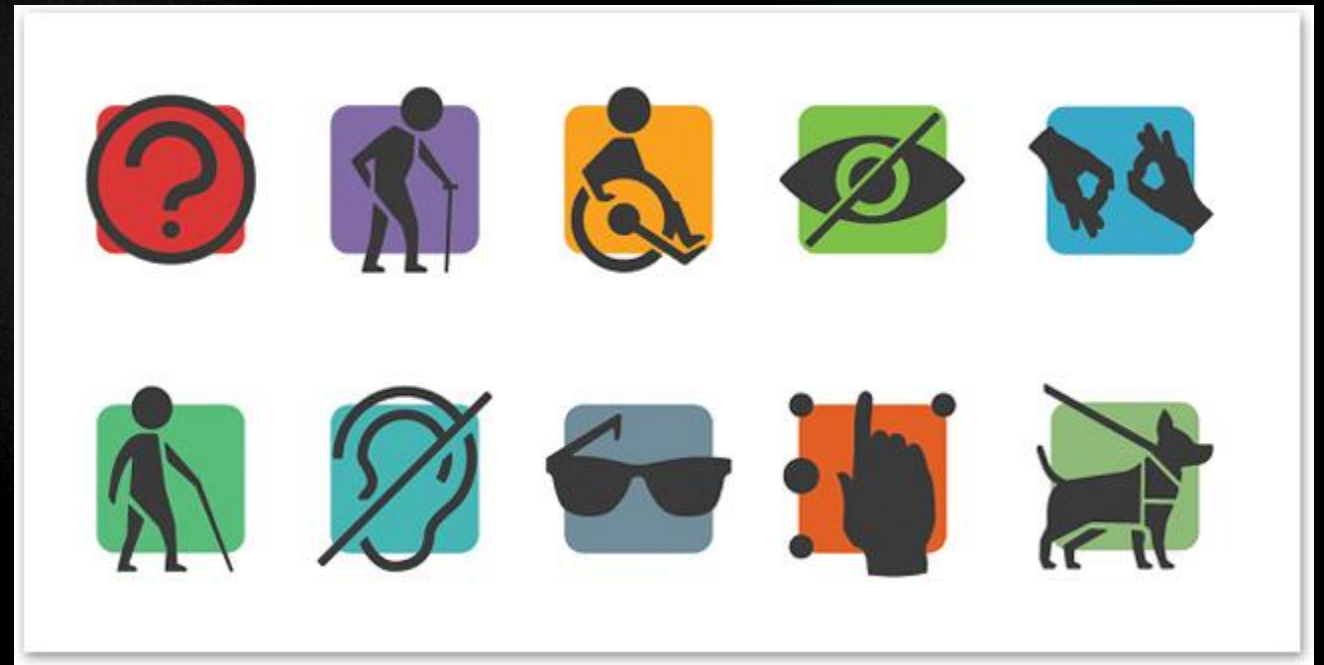


What is Accessibility?

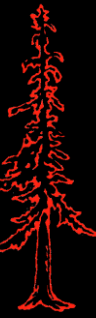


To better interact through:

- ▶ Sight
- ▶ Sound
- ▶ Touch
- ▶ Smell
- ▶ Mobility
- ▶ Understanding
- ▶ Communication
- ▶ Manipulation
- ▶ Teaching / learning

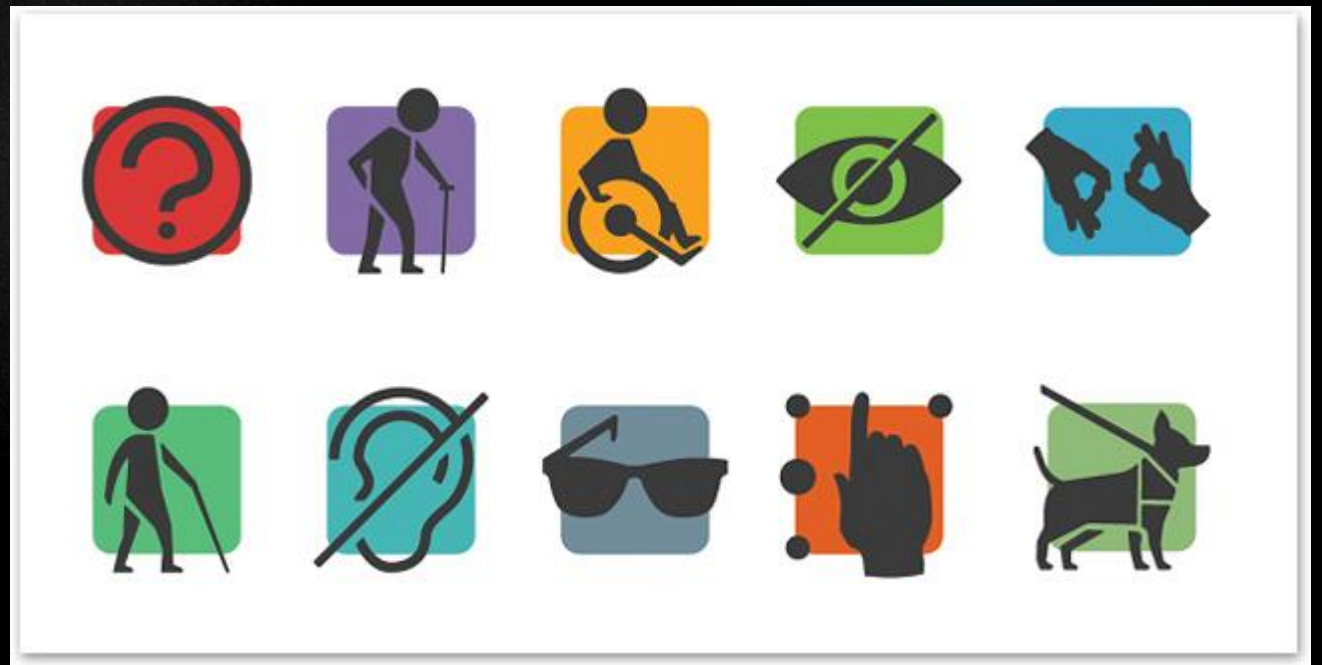


What is Accessibility?



Through an enhanced hardware and / or software user interface:

- ▶ Alternate ways
- ▶ Augmented ways
- ▶ Customized ways
- ▶ Preferred ways



What is Accessibility?

For these purposes:

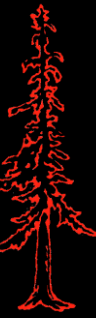
- ▶ Education
- ▶ Vocation
- ▶ Recreation
- ▶ Daily living

Little Things Do Make A Difference

Little Things Do Make A Difference

Little Things Do Make A Difference

Little Things Do Make A Difference



The Goal of Accessibility

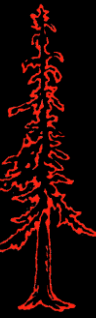


The ultimate goal of the accessibility movement is to ensure that everyone - regardless of ability or disability - has an **equal chance to participate in society**. In the face of constant technological change, this becomes more difficult but also extremely necessary. The only way to allow people with disabilities to **engage fully** in the activities that interest them is to give them access to all the possibilities open to everyone else, including those offered by twenty first century technology.

Accessible Technology in the 21st Century

- The Future

Examples of Devices that Provide Accessibility



Building Access

- ▶ Door Opener
- ▶ Ramps
- ▶ Workspaces
- ▶ Signage
- ▶ ATMs

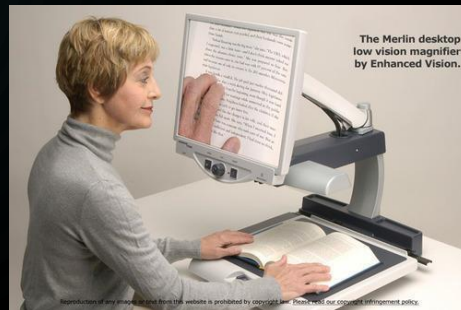


Computer Accessibility



As the computer age continues, more and more technology is being created to make computers and the internet accessible for people of all ability levels.

For **visually impaired users**, programs offer **audio description** or **screen reading**, while **monitor settings** can be modified to make visual reading easier or **Braille embossers** can be added as **alternative output devices**.



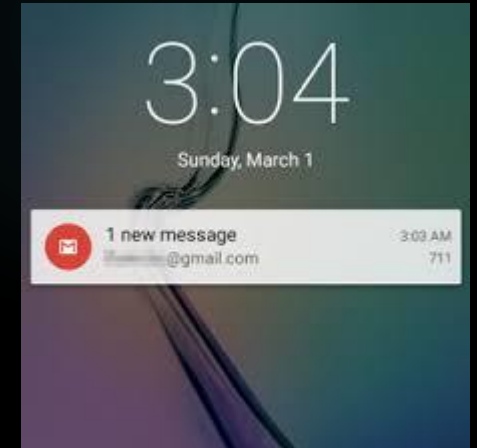
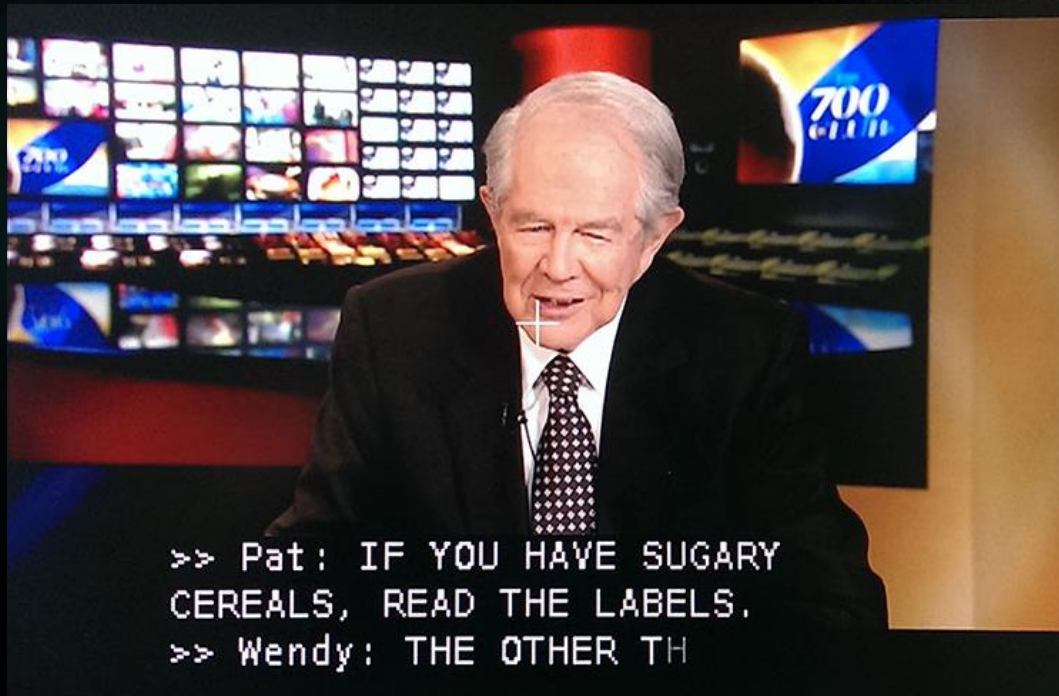
Accessible Technology in the 21st Century

- Introduction

Computer Accessibility



For individuals with hearing difficulties, **captioning** and **visual notifications** instead of sound can offer more freedom in using a computer.



Accessible Technology in the 21st Century

- Introduction

Computer Accessibility



Adaptive keyboards and mice allow **people with motor disabilities** to get their input into a computer, while **speech recognition** is software that allows control of a computer by voice.



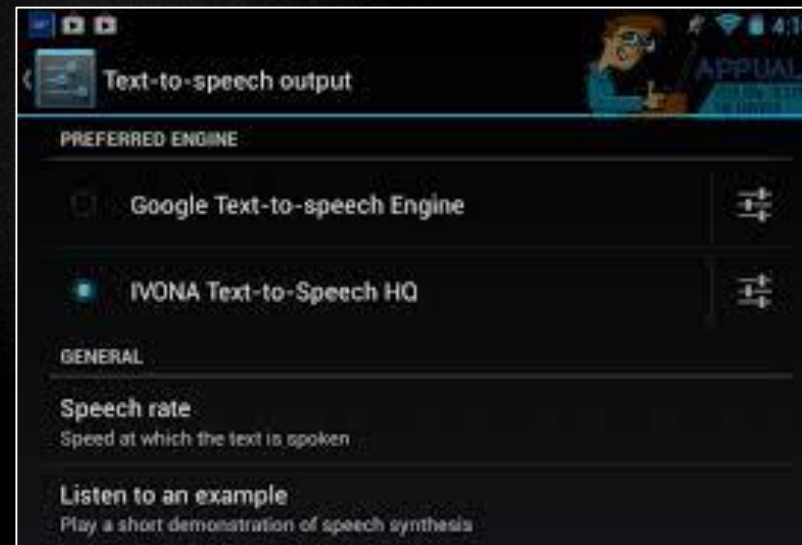
Accessible Technology in the 21st Century

- Introduction

Computer Accessibility



For those with **cognitive disabilities**, programs can be set up to **read text aloud while it is displayed**.



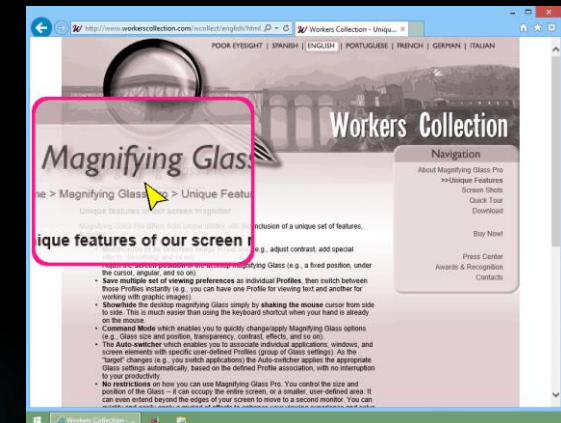
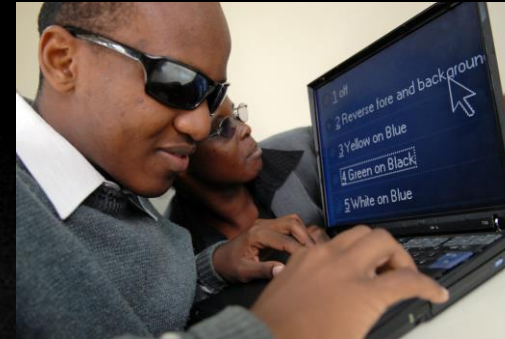
Accessible Technology in the 21st Century
• Introduction

Examples of Devices that Provide Accessibility

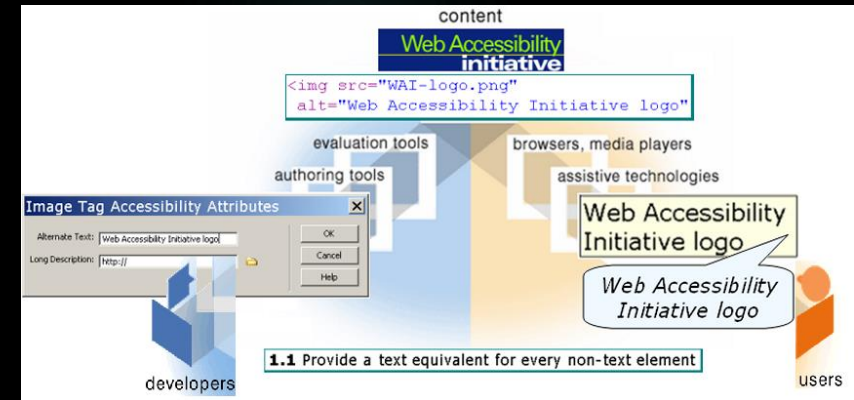


Computer Access

- ▶ Alternative Mouse
- ▶ Alternative Keyboard
- ▶ Screen Readers
- ▶ Voice Recognition
- ▶ Screen Magnifiers
- ▶ Braille Displays
- ▶ Captioned videos



Accessible Webpages



WCAG Guidelines (1 of 2)

- ▶ Provide equivalent alternatives to auditory and visual content
- ▶ Don't rely on color alone
- ▶ Use markup and style sheets and do so properly
- ▶ Clarify natural language usage
- ▶ Create tables that transform gracefully
- ▶ Ensure that pages featuring new technologies transform gracefully
- ▶ Ensure user control of time-sensitive content changes



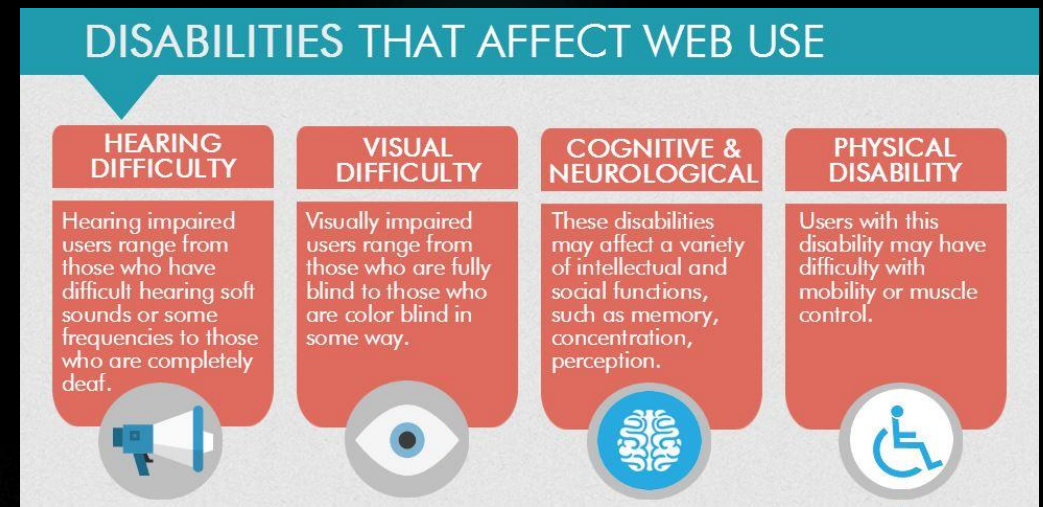
Accessible Technology in the 21st Century

- Website Accessibility

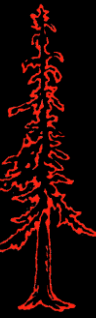
Accessible Webpages

WCAG Guidelines (2 of 2)

- ▶ Ensure direct accessibility of embedded user interfaces
- ▶ Design for device-independence
- ▶ Use interim solutions
- ▶ Use W3C technologies and guidelines
- ▶ Provide context and orientation information
- ▶ Provide clear navigation mechanisms
- ▶ Ensure that documents are clear and simple

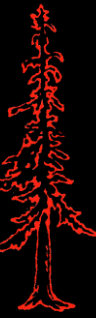


In Summary



Accessibility is the design goal, feature, or criteria that allows people of differing abilities to **share common resources**.

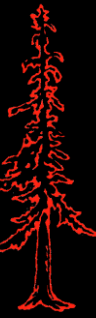
In Summary



Examples of shared common resources are:

- ▶ buildings
- ▶ transportation systems
- ▶ consumer products including computers and software
- ▶ institutions such as schools, banks, government facilities, voting places
- ▶ facilities such as parks, playgrounds
- ▶ information systems such as books and the internet

In Summary



In many instances, the use of an assistive technology device can provide needed access to an otherwise inaccessible resource.

Thursday, Feb 11th



The Design and Control of Exoskeletons for Rehabilitation

Katherine Strausser, PhD

Ekso Bionics – Principal Controls Engineer

Today



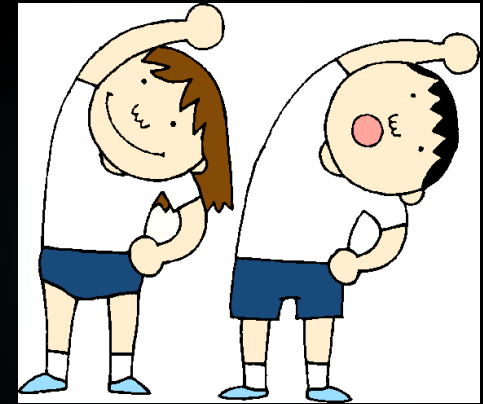
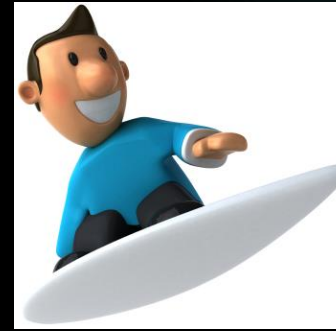
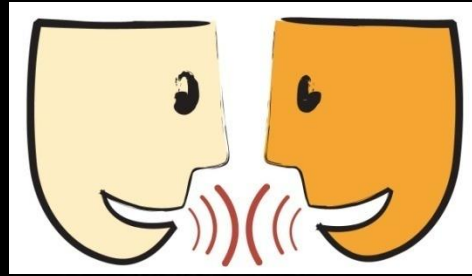
From Idea to Market: Eatwell, Assistive Tableware for Persons with Cognitive Impairments

Sha Yao

Sha Design

Break Activities

- ▶ Breakout rooms
- ▶ Attendance sheet
- ▶ Stand up and stretch
- ▶ Take a bio-break
- ▶ Text message
- ▶ Web-surf
- ▶ Respond to email
- ▶ Talk with classmates
- ▶ Reflect on what was presented in class



Short Break

