



Usable Spaces or Inclusive Places?

Why the ADA Didn't Live Up to Its Promise and What is the Alternative

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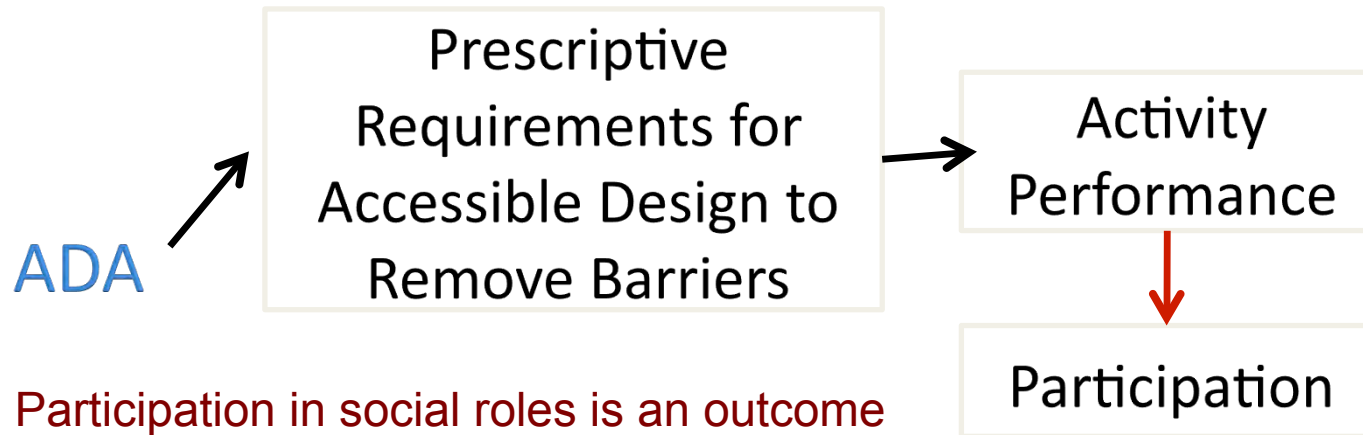
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The Promise of the ADA



Participation in social roles is an outcome of being able to do stuff



Activity and Participation

Activity

Participation

Operational Definition

- Execution of individual tasks

- A shared experience that creates a sense of belonging

Design Goal:

- Engage in essential life activities tasks by oneself or with others

- Engaging in interactions and shared experiences with others

Example of Design



Evidence of Effectiveness

- Usability, independence, safety, efficiency,

- Inclusion, sense of belonging, recognition, life satisfaction, quality of experience/life

Outcome

- Usable spaces/products

- Meaningful places

ADA 101:

RIDDING THE WORLD OF BARRIERS TO ACTIVITY



Achievable Barrier Removal –
2010 ADA Standards

Barriers to Mobility



Barriers to Reach



Downward Reach

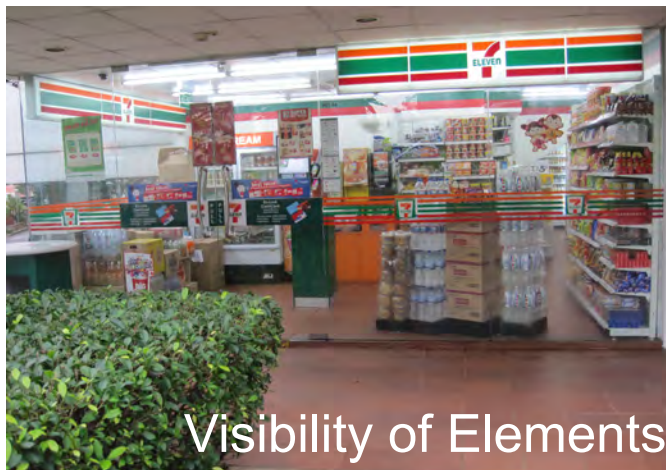
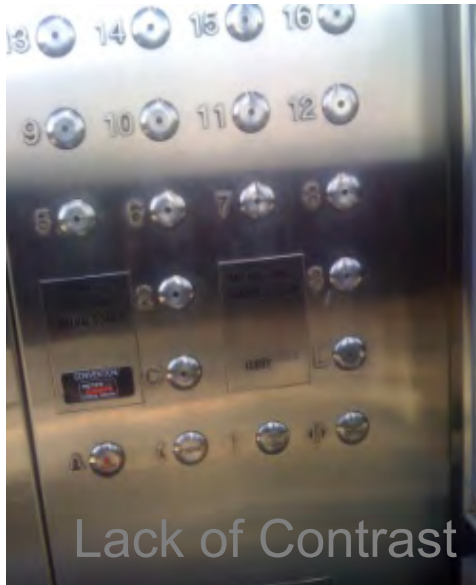


Upward Reach

Barriers to Grasp and Manipulation



Barriers to Perception



Barriers to Communication



Barriers to Cognition



Press the green button to begin



The Rule of Notes



Accessible Design 201:

**PRESCRIPTIVE, ACTIVITY-FOCUSED,
DISABILITY-SPECIFIC DESIGN**



Benefits of Accessible Design...

Activity, Activity, Activity

- Increased independence, autonomy, safety, confidence in performing activities;
- Reduced functional decline and disability,
- Increased effectiveness of caregivers in assisting with activities,
- Increased frequency of travel in community
- Reduced risk of falls
- Decreased likelihood of institutionalization,

-- Allen, Resnick & Roy, 2006; Gitlin, et al., 2001; Gitlin, 2003, 2007; Mann, et. al, 1999; Oswald, et al, 2007; Pynoos, Steinman & Nguyen, 2010, Sanford, et al., 2006; Sanford & Hammel, 2006; Schaie, et al., 2003; Tinetti, et al., 2002; Yang & Sanford, 2012.

Promote Mobility Activity for People with Ambulatory Limitations



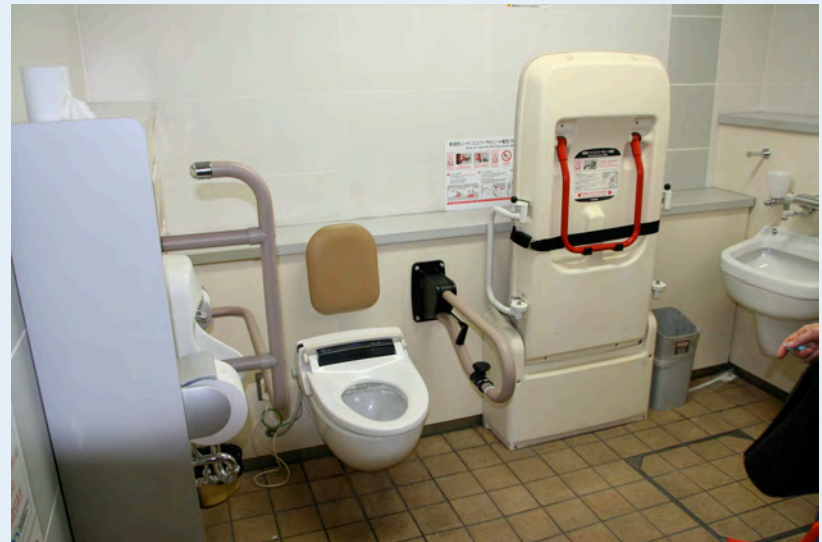
Promote Mobility Activity for People with Visual Limitations



Promoting Manipulation for People with Dexterity Limitations



Failing on the Promise:
WHEN...



When...Equal is not Equal



When...Means Don't Justify the Ends



When...Exclusion Promotes Inclusion



When...Differences Make no Difference



When...the Obvious Isn't Obvious Enough



Trouble in Paradigms:

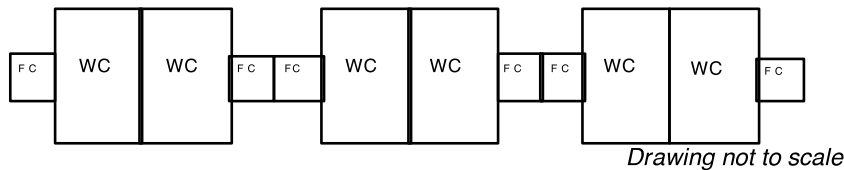
STUDIES OF ACTIVITY & PARTICIPATION



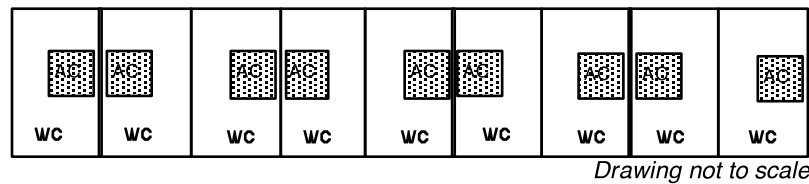
1. Participation in Sports Venues

- Activity = Attending/Seeing the Event (with others)
- Participation = Being Part of the Crowd
- Issues:
 - Horizontal Integration
 - Sightlines and Vertical Integration
 - Location of Wheelchair Seats

Horizontal Integration: Attending with Others



Typical Arrangement of Wheelchair Spaces and Companion Seats

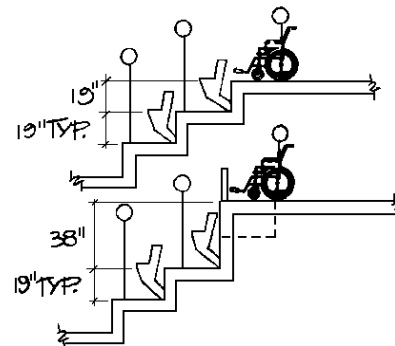
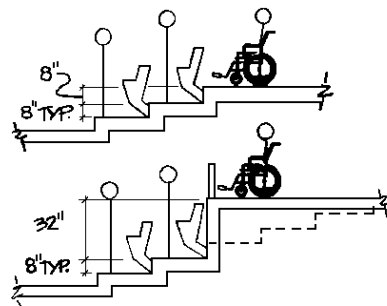
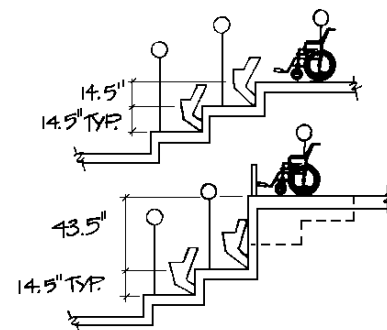
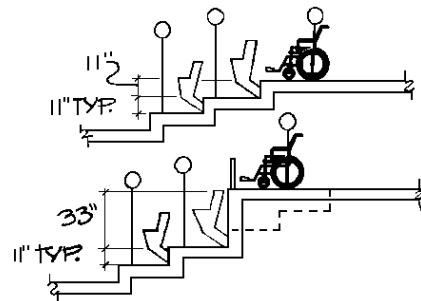


Configuration for Swivel Seats



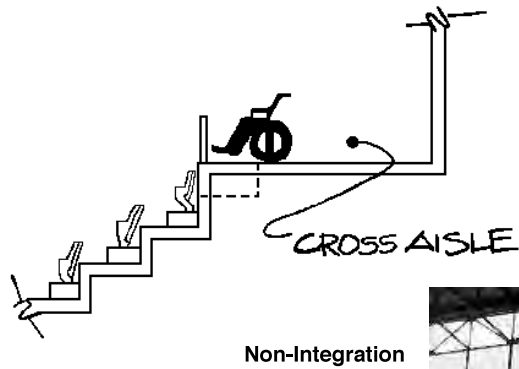
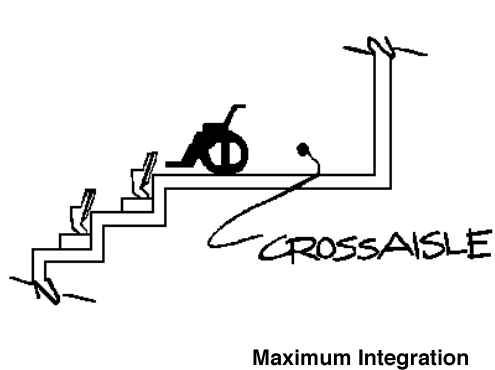
The Problem: Takes too much space (66" vs. 52" per wc seat)

Sightlines: Seeing the Event



The Problem: Lose too many rows

Vertical Integration: Being Part of the Event



The Problem: Creating sightlines isolates wheelchair spaces from contiguous rows

Location of Seats: Being Part of the Event



open concourse



closed concourse

Integration of Seating on Open and Closed Concourses

Findings, Recommendations and Outcomes

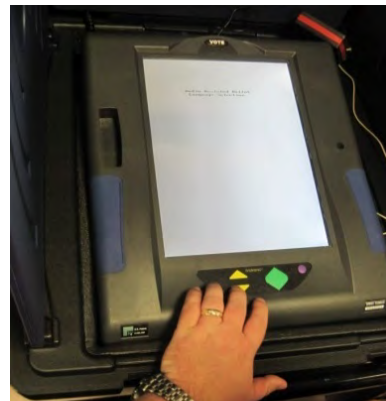
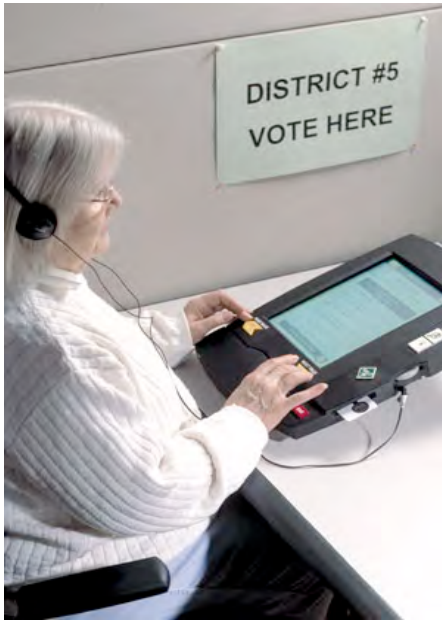
- Most participants preferred integration of sightlines (i.e., participation in event over activity of seeing the event)
- Recommended a range of seating options from maximum integration to maximum sightlines
- Recommended waiver from ADAAG scoping requirements for fully integrated swivel seats
- Outcome: Department of Justice which enforces ADAAG, considered recommendations to be “less accessible” than existing requirements for scoping and sightlines

2. Voting and Civic Participation

- Activity = Voting
- Participation = Voting in-person
- Issues
 - Accessibility of Machines
 - Privacy
 - Time to Vote



Accessible Machines and AT Make Voting Possible



In-Person Voting

- Created a sense of inclusion that was expressed in the preference for in-person vs. absentee voting.

“...there is very often a lot of camaraderie between the people in line, especially if you have to wait for a long time.... And I often see people I haven't seen in a long time in the voting line.”

“I feel more a part of the process”.

“I do get some sort of personal satisfaction about going where other people are voting and vote.”

“It was almost insulting how they were like, oh, no, no, you don't need to be here; just get an absentee ballot. I was like, no, I want to vote; I wanted to come into the polling place.”

Accessibility of voting machines

“There was no way to turn up the volume. And the lobby that I was in was extremely noisy. It took me two hours to vote in that election.” (V48, blind)



“The angle tends to be set up for someone that stands, so is a bit taller. So the angle needs to be readjusted down a little bit.” (V46, mobility) (AccuVote TSX)



Lack of Privacy

- Location of a voting machine (i.e., insufficient space between two machines, angle of the display)

“If the machine is set up in the wrong direction, the whole room can see the machine – so no confidential vote.” (V03, mobility & vision)

- Getting help from poll workers is stigmatizing

“If I have to ask for help, then everybody hears me. I mean, you can't ask for help without somebody else knowing about it.” (V33, cognitive, mobility, sensory)

- Caregivers coming with the voter

“Other wheelchair users come in with their home care workers and it's problematic. . . . people don't want their home care workers to know their vote. It's a very touchy discussion.” (V03, mobility & vision)”

Time it Takes to Vote

- Waiting to get help from a poll worker

“People without disabilities just come out, zip, zip, mark your ballots, throw it in the thing and they're done. You know, it took me under an hour. Nobody is there for that long.” (V01, blindness)

- Waiting for the only one accessible machine

“They (voting machines) all should be -- have the same capabilities so you don't have to stand in line for a special machine.” (V33, cognitive, mobility, sensory)

- Electronic voting machines are not set up on time

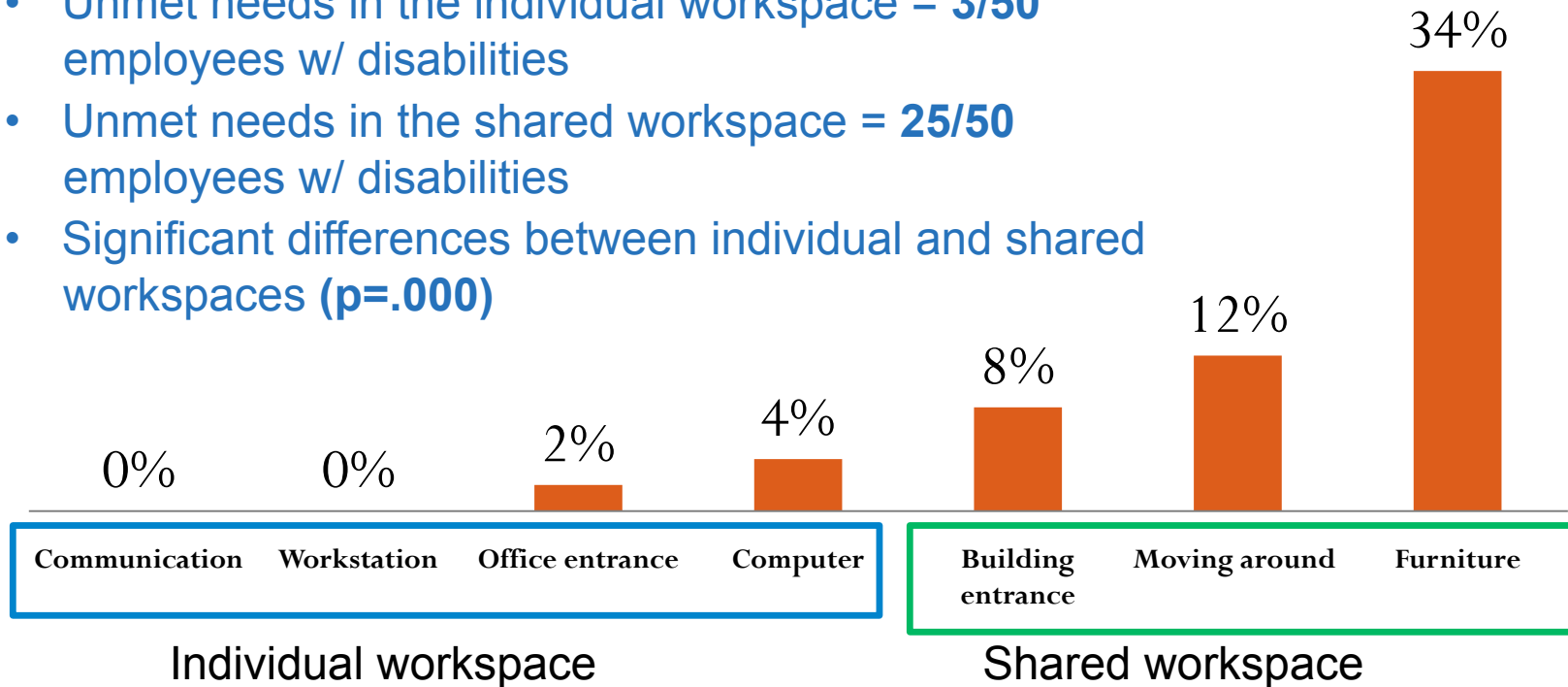
“This one lady went to vote at 10:00 in the morning and the machine wasn't set up yet and she had to wait for it. And I mean, that's totally unacceptable.” (V01, blind)

3. Workplace Accommodations and Workplace Participation

- Activity = Essential job tasks
- Participation = Sense of inclusion and belonging in the workplace
- Issues:
 - Provision of Workplace accommodations
 - Job Satisfaction

Provision of Workplace Accommodations

- Accommodations required to perform essential job tasks (i.e., activity)
- Accommodations not required for wkpl. participation
- Unmet needs in the individual workspace = **3/50** employees w/ disabilities
- Unmet needs in the shared workspace = **25/50** employees w/ disabilities
- Significant differences between individual and shared workspaces (**p=.000**)

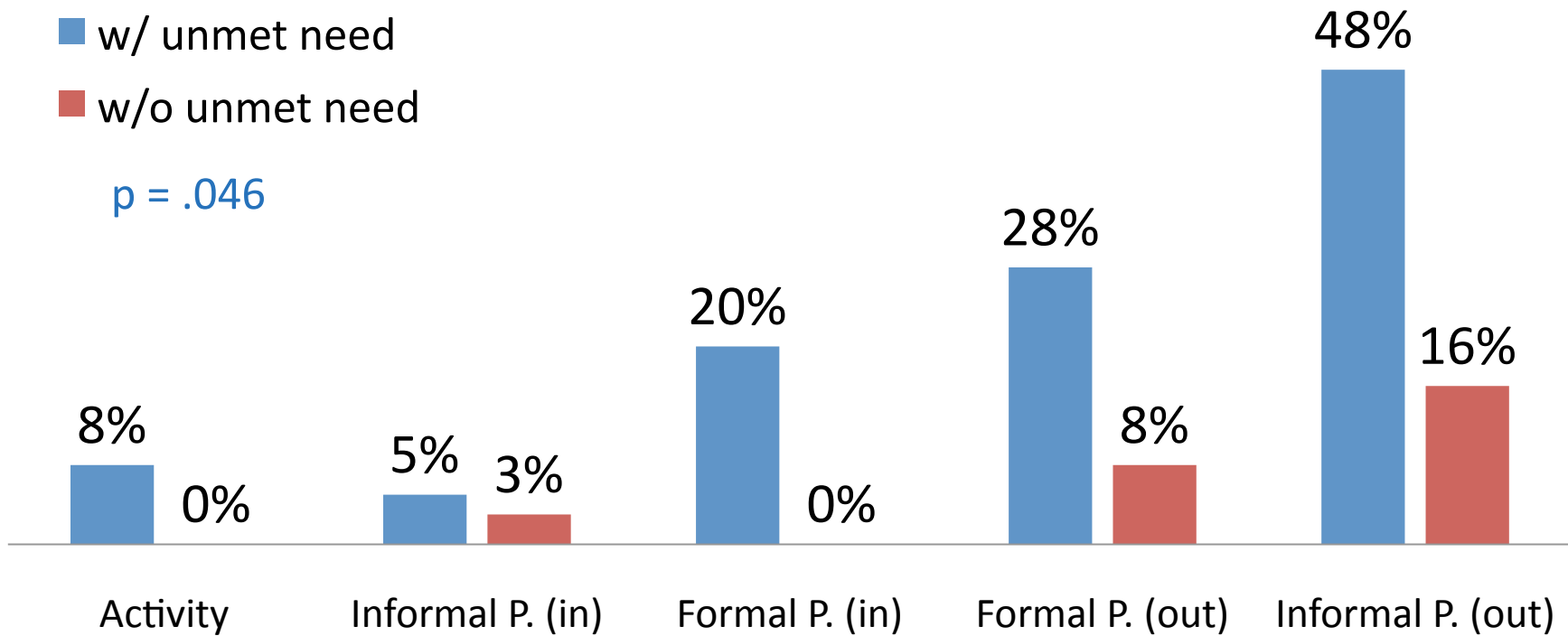


Level of Dissatisfaction with Activity and Participation Outcomes

■ w/ unmet need

■ w/o unmet need

$p = .046$

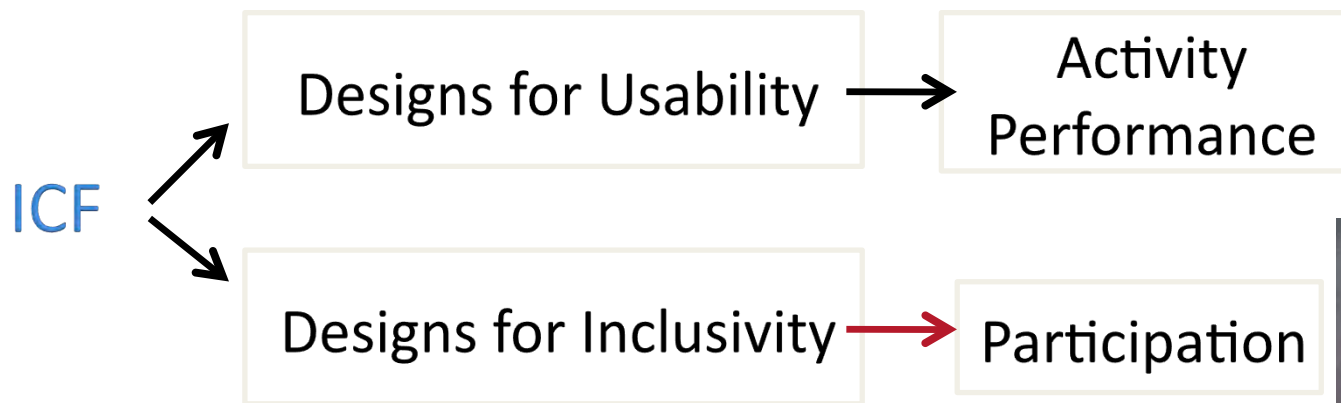
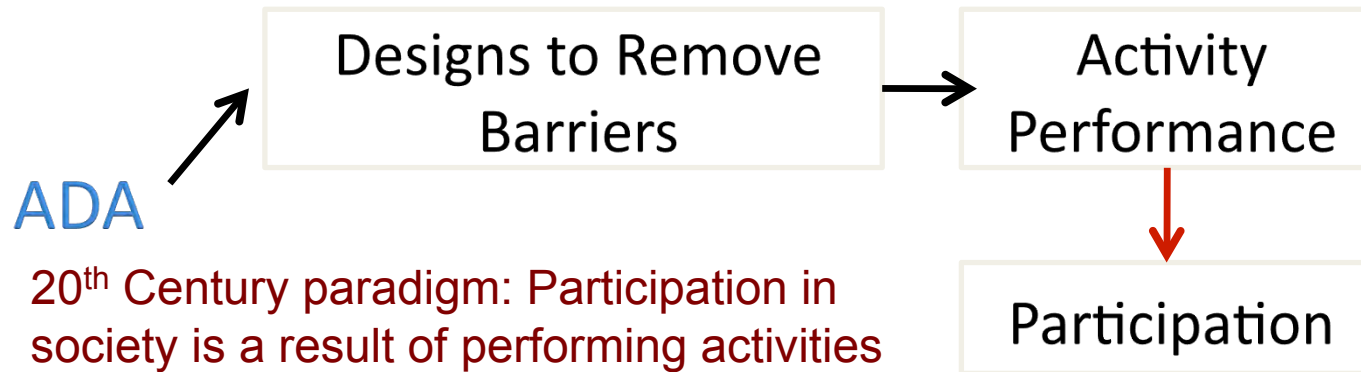


The Alternative:



Design for Activity and Participation

Thesis: We are Stuck in a Barrier-Removal Paradigm



Universal Design

- The design of all products and environments to be usable by all people to the greatest extent possible without the need for adaptation or specialized design

-- Mace, 1990

- Everyday design (not disability-specific) that supports all types and levels of abilities (not activity-based)



Principles of Universal Design

Inclusivity 1. Equitable Use

2. Flexibility in Use

3. Simple and Intuitive Use

4. Perceptible Information

5. Tolerance for Error

6. Low Physical Effort

7. Size and Space for Approach and Use

Usability



2. flexibility in use

- Provides choice in methods of use
- Permits right- or left- handed use
- Requires min accuracy & precision
- Adaptable to user's pace



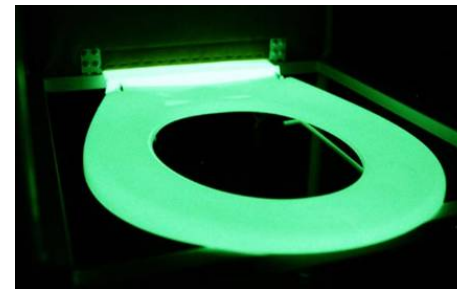
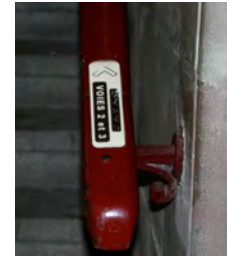
3. simple & intuitive use

- Eliminate complexity
- Consistent with expectations
- Accommodate range of literacy/language
- Arrange information consistent with importance
- Prompting and feedback during task and after completion



4. perceptible information

- Is multi-modal for redundant information
- Maximizes legibility of essential information
- Differentiates elements



5. tolerance for error

- Arranges elements to minimize hazards and errors
- Provides warnings of hazards/ errors
- Discourages unconscious actions
- Provides fail safe features



6. low physical effort

- Is used in neutral body position
- Minimizes repetitive actions
- Minimizes sustained effort



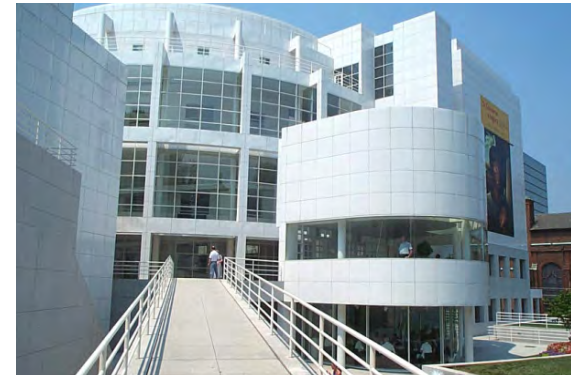
7. size & space for approach & use

- Clear line of sight to important elements
- Comfortable reach to all components
- Accommodates variations in hand and grip size
- Adequate space for use of AT and PA



1. equitable use

- Used in same/equivalent manner
- Avoids segregating any users (1a. Social Integration)
- Appealing for all (1b. Contextual Integration)



1a. social integration

- Enables engagement in activities **when** wanted or needed.
- Enables engagement in activities **where** wanted or needed.
- Enable engagement in activities **with whom** is desired or needed.



1b. contextual integration

- Is aesthetically compatible with other features in context
- Is socially and culturally compatible.
- Looks, feels, smells, and sounds like it is an integral part of the overall design.



Benefits of Universal Design

- Compatible with ICF framework of activity and participation
- Everyday designs that have contextual scale and character (i.e., fit and integrated within context)
- Can set a baseline for usability that will reduce or eliminate need for to remove barriers
- Can benefit multiple individuals in a place w/ and w/o functional limitations
- Functional across the lifespan of an individual as well as across the lifespan of the place



Proving the Point

**DRRP on Universal Design Practices
to Enhance Work Outcomes**

Specific Aims

- *To increase knowledge about, availability of, and access to UD accommodations to enable employees with disabilities to participate fully in the workplace, enjoy enhanced employment outcomes, and have equal opportunities for advancement.*

Tasks

- **Aim 1. Develop and validate new tools** that can be used to establish an evidence base for the efficacy of UD accommodation practices, as well as participation outcomes in the workplace.
- **Aim 2. Establish the evidence base** for: a) UD as an effective employer accommodation practice; and 2) specific UD accommodations that are associated with enhanced work outcomes
- **Aim 3. Translate knowledge** into strategies for employers, rehabilitation professionals, policymakers, and people with disabilities to encourage more effective UD accommodation policies and practices.

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Thank you