Expanding Cognitive Accessibility for Transportation Innovation and Automated Vehicles (AVs)

Assessing Transportation Needs of People with Disabilities, Older Adults, and Children

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Outlining the Presentation: Learning Objectives

- Spotlight ODEP’s mission for increasing employment
- Define and frame cognitive accessibility for people with cognitive and neurological disabilities in transportation
- Describe cognitive access for the example population group of autistic people as transportation users
- Situate cognitive accessibility for emerging transportation technology (e.g., automated vehicles)
ODEP Seeks to Increase Employment Access for Americans with Disabilities

Only non-regulatory federal agency that promotes policies and coordinates with employers and all levels of government to increase workplace success for people with disabilities

- **Mission**: Develop and influence policies that increase the number and quality of employment opportunities for people with disabilities

- **Vision**: A world in which people with disabilities have unlimited employment opportunities
ODEP’s Initiatives Include…

- Accessible Autonomous Vehicles
- Partnership on Employment & Accessible Technology (peatworks.org)
- Apprenticeship Inclusion Models initiative (spra.com/aim)
- Employer engagement and EARN (askearn.org)
- Job Accommodation Network (askjan.org)
- Pathways to Careers projects at community colleges
- Employment 1st: Provider Voice and Veterans RICE
- RETAIN Demonstration Projects
- Workforce Recruitment Program (wrp.gov)
Define and Frame Cognitive Accessibility

• Supports to improve access for atypical thinking, learning, information processing, and sensing (cognitive)

• Affordances for heterogeneous cognitive disabilities, such as:
  – Autism, intellectual disability, ADHD, learning disabilities, etc.
  – Mental health disabilities (e.g., bipolar, PTSD)
  – Brain injury (traumatic), aphasia, etc.

• Coleman Institute’s Declaration on the Rights of People w/ Cognitive Disabilities to Technology and Information Access
Discuss Cognitive Access in Transportation

• Historical under-focus on cognitive access for infrastructure—buildings, transportation systems, etc.

• Need to expand travel training for youth and adults with cognitive disabilities

• Emerging cognitive access features for transportation:
  – Prompts, including just-in-time prompting supports
  – Multi-sensory access (audio, visual, tactile)
  – Informational displays with plain English
  – Apps that interface to accessible and assistive technology
Describe autism and cognitive access

- Neurological developmental disability with an estimated prevalence of 1-2% in U.S. and worldwide
- Heterogeneous lived experiences and service needs
- Significant transportation barriers, including lower rates of driver’s licenses and public transit use

- Common neurological profile:
  - Language and communication
  - Social interaction
  - Sensory processing and motor performance and execution
  - Executive functioning (planning, organization, etc.)

Autistic info processing t-shirt

Driving Change ★ Creating Opportunity
Situate Cognitive Access for Emerging Transportation Technology and AVs

• Prioritize accessibility, including cognitive access, at the forefront of design and development
• Include people with cognitive disabilities in usability and user research for transportation technology and AVs
• Integrate accessibility features to enhance cognitive access:
  – Prompts, reminders, and multi-sensory supports (audio, visual)
  – Cognitive scaffolding for the full trip (apps, vehicle displays, etc.)
  – Informational displays with plain language and specific info
• Incorporate travel training on AV use for people with cognitive disabilities
O Dep Provides Resources on Autism

• O Dep Topic Resources Webpage on Autism: 
  https://www.dol.gov/odep/topics/Autism.htm

• JAN’s Info Resources on Autism:
  • Accommodation Series on Autism: 
    https://askjan.org/disabilities/Autism-Spectrum.cfm?cssearch=1909520_1

• Interviewing Tips for Job Seekers:
  https://askjan.org/publications/consultants-corner/vol10iss01.cfm
Contact ODEP for More Info

• ODEP’s website: http://www.dol.gov/odep
• ODEP’s transportation webpage: https://www.dol.gov/odep/topics/Transportation.htm
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