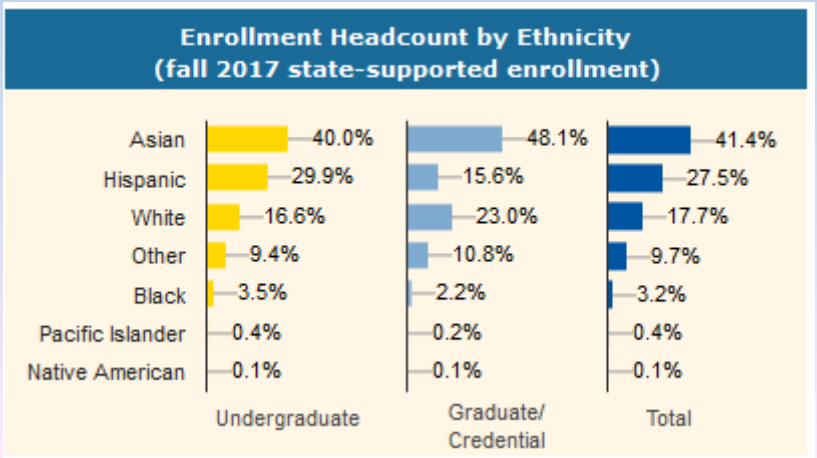
Inclusive Course Design

Elizabeth Tu
Center for Faculty Development
http://www.sjsu.edu/cfd/teaching-learning/accessibility

Who are Our Students?

- Individuals bring in different culture background, skills, experiences, learning preferences, needs, interests, and other characteristics to learning. View Variability Matters video
- According to SJSU Fall 2017 ethnicity statistics, our students include Asian (41.4%), Hispanic (27.5%), White (17.7%), Other (9.7%), Black (3.2%), Pacific Islanders (0.4%), native Americans (0.1%) ethnic background with International students (9.6%), .
- Diversity also includes a wide range of physical, visual [sensory], hearing, learning [cognitive], attention, and communication abilities.
- In Education, does one size fit all?



Disability Demographic Information

- According to the US Census Bureau report, about 56.7 million people — 19 percent of the population — had a disability in 2010

- The percentage of undergraduates who reported having a disability was **11 percent** in 2011–12. The percentage of undergraduates having a disability:

~ Fast Facts from National Center for Education Statistics

AEC Student Registration Data at SJSU

Data of students registered with Accessible Education Center (AEC) at SJSU from 2005 to 2018.

- An increase from 3% in Fall 2005 to 3.8% in Spring 2018

Semester	AEC Registered Students	SJSU Student Enrollment
Fall 2005	890 (3%)	29,975
Fall 2006	933 (3%)	29,604
Fall 2007	1073 (3%)	31,906
Fall 2008	1124 (3%)	32,746
Fall 2009	1127 (3.6%)	31,280
Fall 2010	1058 (3.6%)	29,076
Fall 2011	1127 (3.7%)	30,236
Spring 2012	1102 (3.9%)	28,002
Spring 2013	1125 (4.1%)	27,503
Spring 2015	1142 (3.8%)	29,954
Spring 2016	1069 (3.6%)	29,594
Spring 2017	1096 (3.75%)	29,200
Spring 2018	1175 (3.8%)	30,727

Student Disclosure Issue

- …a gap between the reported national disability statistics (11% of undergraduates) and our campus data (3.8%)
- Only about 35% of students choose to disclose their disability in college…

Sources:

- Getzel, E., *2014*
- Wagner, M., Newman, L, Cameto, R., Garza, N., & Levine, P., 2005
- Newman, L.A., & Madaus, J.W. (2014)

Issues of Not Disclosing

- Adjustment to a college environment (Colleges/Universities are not required to develop Individualized Educational Plan (IEP). **Students must learn to self-disclose their disabilities**
- Lack of acceptance, responsibility of managing accommodations
- **Difficulties accessing the necessary services & supports** such as, academic planning, learning communities & seminars, peer-to-peer instructional support or faculty mentoring, learning and practicing goal setting
- Find the process to disclose to each faculty & each class and every semester **humiliating and stigmatizing**

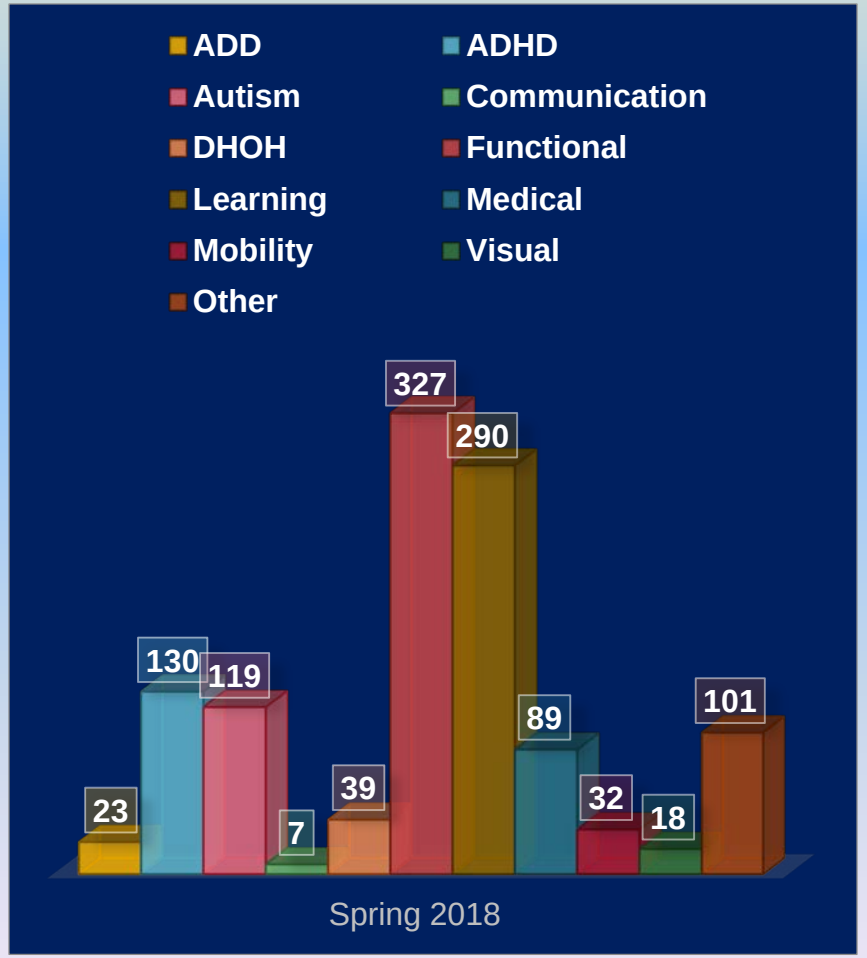
Sources:
- Getzel, E., *2014;*
- Murray, C., Wren, C., Stevens, E.B., Keys, C. (2009)
- Izzo, M.,Murray, A., Novak, J, 2008,

SJSU AEC Student Distribution

Type of disabilities registered at AEC in Spring 2018

- ADD = 23 (2%)
- ADHD = 130 (11.1%)
- Autism = 119 (10.1%)
- Communication = 7 (0.6%)
- DHOH = 39 (3.3%)
- Functional disability = 327 (27.8%)
- Learning disability = 290 (24.7%)
- Medical = 89 (7.6%)
- Mobility = 32 (2.7%)
- Visual disability = 18 (1.5%)
- Other = 101 (8.6%)

Total = 1175 (as of 4/20/2018)



Types of Disabilities

Disabilities	Types
Visual	Blindness, low vision & color blindness
Auditory	Degree of hearing loss, deaf-blindness
Motor	• Traumatic Injuries: Spinal cord injury, Loss or damage of limb(s) • Diseases & Congenital Conditions: Cerebral palsy, Muscular dystrophy, Multiple sclerosis, Spinal bifida, ALS (Lou Gehrig's Disease), Arthritis, Parkinson's disease, Essential tremor
Cognitive	• Functional: Memory, Problem-solving, Attention, Reading, linguistic, and verbal comprehension, Math comprehension, Visual comprehension • Clinical Cognitive disabilities: Autism, Down Syndrome, traumatic brain injury (TBI), and even dementia. Less severe cognitive conditions include attention deficit disorder (ADD), dyslexia (difficulty reading), dyscalculia (difficulty with math), and learning disabilities in general

- Source: Web Accessibility in Mind (WebAIM)

The Laws

- Americans with Disability Act (ADA) of 1990 (sec. 12102)
- Section 508 of the Rehabilitation Act of 1973
  - Standards which ensure all information and communications technology (ICT) supports accessibility
- California Government Code 11135

Litigation Cases

- 2016 Office of Civil Rights (OCR) web accessibility cases from across the nation.
  - Harvey Mudd College policy on EIT - resolution agreement
  - Miami University's web content & LMS – DOJ decree
  - MIT/Harvard edX's lack of captioning MOOCs – settlement agreement
  - Berkley's inaccessible online content – DOJ Letter
- 2017
  - One CSU campus received an OCR letter
  - One Activist Has Hundreds of Colleges Under the Gun to Fix Their Websites
    - Last year 360 colleges were scanned

What We CAN Do

- *Courses designed with UDL "strive to **focus on the strength of individuals… what they CAN do** rather than on what they cannot" and "proactively address the needs of people with the broadest range of characteristics…"* (Emmert, M. A. 2008)

- *Knowing our students , think about their diverse learning needs… and Variability Matters*

What is Universal Design?

- *"Universal Design" was coined by Ronald Mace in the 1970s.*

*"…the design of products and environments to be **usable by all people, to the greatest extent possible**, without the need for adaptation or specialized design."*

Examples of Universal Design

- Examples of barrier-free and user-friendly physical environment and products
  - Street sidewalk curb cuts
  - Accessible Ramp
  - Electronic sensor door
  - Door levers
  - Easy-grip tools
  - Speaker phone

The Three Principles – (from CAST)

Think Universally!

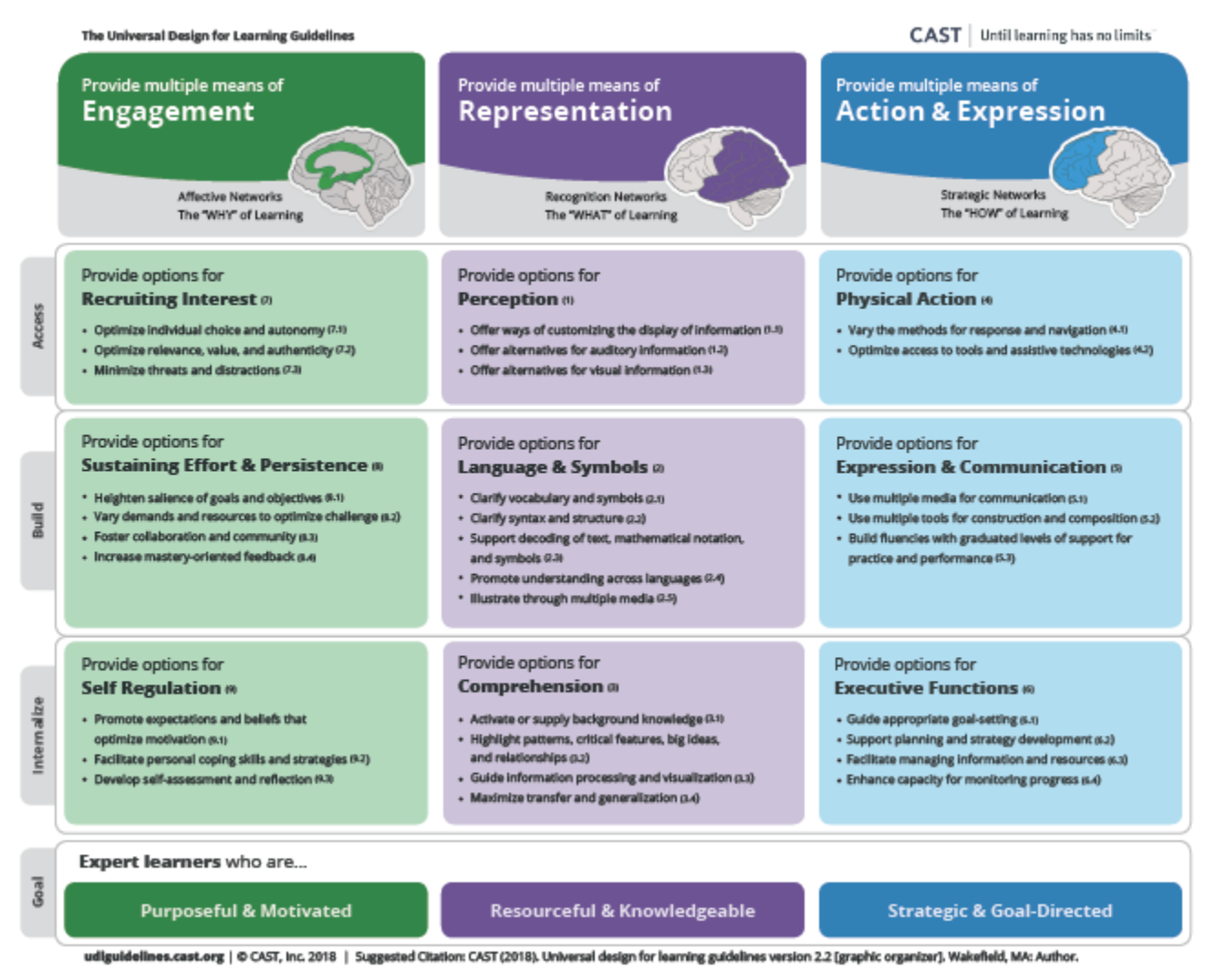
Designing a learner-centric and barrier-free learning environment

- Multiple means of **Engagement***:* to engage or motivate our students
  - *Different strategies or technologies to recruit students' interest, sustain their continuous effort to participate in their learning activities (e.g., iClicker, active collaborate team learning, online, hybrid, flipped classroom)*

- Multiple means of **Representation** of our **content**
  - *Different or multi-modal ways to present, describe, or organize course content information (e.g., lecture, video, online, group discussion, road map, graphic organizers, field trip, etc.)* to help them comprehend

- Multiple means of **Action/Expression:** to allow options/choices for **students** to be in control of or express their learning
  - *Different ways to allow learners to express, demonstrate or control their learning (e.g., Quizzes, exams, projects, papers, multimedia presentations)*

The Three Principles – Graphic Organizer from CAST



Student Perspectives – what works for them, broadly

- Effective teaching methods & strategies reported by students in several UD studies
  1. Classroom environment
     1. Welcoming classroom climate
     2. Providing support for individual learning needs
     3. Appreciation of professors who were receptive when disclosing their disability
  2. Course content
     1. Clear goal, learning outcomes, expectations listed on syllabus
     2. Presenting materials in multiple formats
     3. Connecting academic content with real life experiences
  3. Instructional strategies
     1. Explicit step-by-step instructions
     2. Providing advanced organizers, study guides, or outlines
     3. Highlighting key points for viewing videos
  4. Assessment strategies
     1. Allowing student choices (e.g., assignments or exams; individual or group projects)
     2. Frequent formative feedback or quick response to emails & all communications
     3. Using diverse assessment strategies
     4. Providing rubrics for graded assignments

- McGuire, J.M. & Scott, S., Fall 2006
- Roberts, K.D., Satlykgylyjova, M., & Park, H-J, 2015

Student Perspectives – what works for students with special learning profiles and needs

- Findings from 23 students with LD, ADHD & other psychological disorder

  - Attributes of excellent instructors
    1. Approachable and available
    2. Focused on the subject
    3. Able to make a personal connection with students
    4. Created a challenging standard
    5. Pushed students to do their best work
    6. The boost of self-confidence

McGuire, J.M. & Scott, S, Fall 2006

Inclusive Course Design Checklist

Be mindful of Understanding Our Students.

Here are a few checklists to help with your course redesign:

- UDL Guidelines – Educator Worksheet v. 2.0
- Bloom's Revised Taxonomy Planning Framework
- Inclusive Course Design checklist

Accessibility Guidelines & Best Practices

Per University Policy S16-9, follow accessibility guidelines in creating your syllabus. The same guidelines apply to any text-based printed course handouts, worksheets, slides,

- Follow accessibility guidelines – the LIST, at CFD's Creating Accessible Documents web page to create your text based course materials
  - **L**inks: Provide meaningful label for web link
  - **I**mages, graphs, diagrams, chars, photos: Describe or explain any images, diagrams, charts, photos or graphical information
  - **S**tructure: Include structure for your document by using heading style feature
  - **T**ables: Avoid complicated or nester tables; include and repeat header row for long tables over one page; and check the logical reading order of your table

- Best Practices:
  - Use more legible san serif fonts (e.g., Arial, Calibri, Helvetica, etc.)
  - When formatting, use heading style, lists, bold, uppercase in addition to colored texts
  - Check color contrast between text and background (WebAIM color contrast checkcer: http://webaim.org/resources/contrastchecker/)

Source: Web Content Accessibility Guidelines (WCAG) 2.0 Requirements – the Four Principles

Best Practices for Multimedia or Non-printed Information

For non-print multimedia course materials

- Include closed captions for your embedded videos
- Include a transcript for your embedded audio
- Avoid using color Only to convey information
- Use simple slide transition to reduce distraction
- Avoid animation or Flash; if used, describe the information
- Avoid flashing graphics that may cause epileptic seizures

Captioning support available at CFD's Captioning Support web page.

Source: Section 508 Standards Chapter 2 E205.4 and WCAG 2.0

Point of Contact

Elizabeth.Tu@sjsu.edu or 408 924-3093

CFD's Accessible Course Materials web page:

http://www.sjsu.edu/cfd/teaching-learning/accessibility

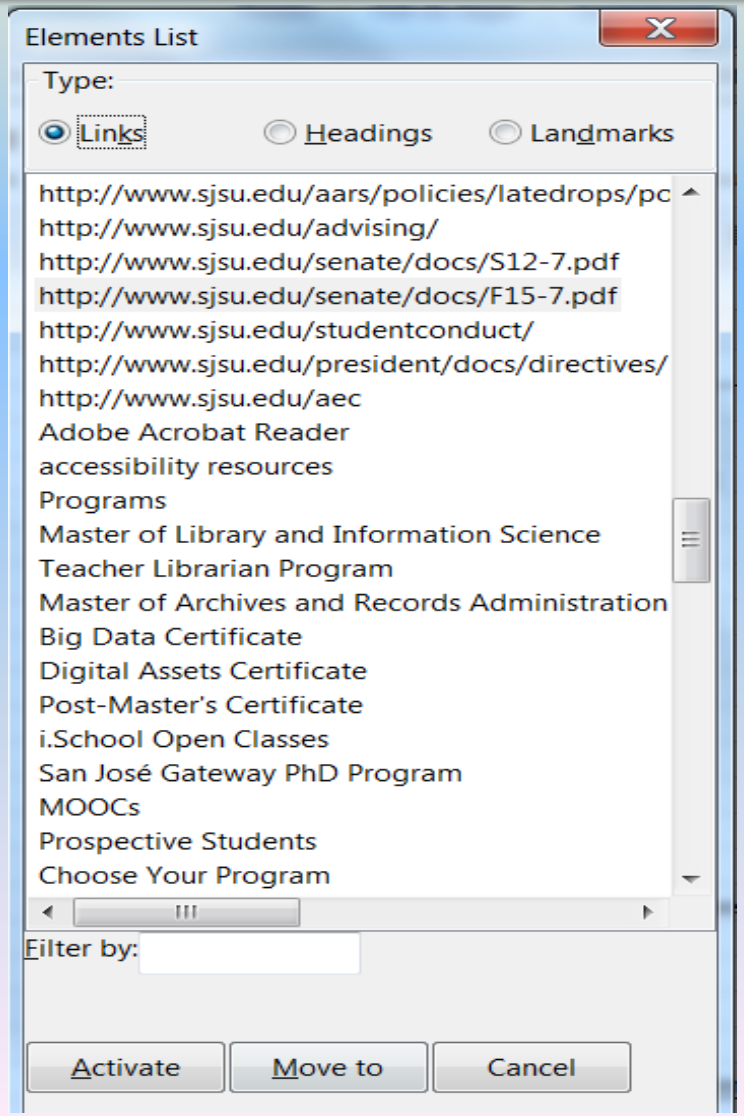
Elizabeth Tu
Instructional Designer and Instructor
Email: elizabeth.tu@sjsu.edu
Phone: (408) 924-3093
Office: IRC 202

References

- Active Learning Strategies from UC Berkeley Center for Teaching & Learning http://teaching.berkeley.edu/active-learning-strategies
- ADDIE Model: http://www.instructionaldesign.org/models/addie.html
- Americans with Disability Act (ADA) of 1990 (sec. 12102)
- Backward Design Model (https://cft.vanderbilt.edu/guides-sub-pages/understanding-by-design/): Wiggins, G. and McTighe, J. (2005) Understanding by Design. Expanded 2nd ed. Association for Supervision and Curriculum Development
- Burgstahler, S.E., and Cory, R.C. eds. (2008) Universal Design in Higher Education : From Principles to Practice, Harvard Education Press, Cambridge, MA, ix
- CAST: http://www.udlcenter.org/aboutudl/whatisudl
- Davies, P.L., Schelly, C.L. & Spooner, C.L. (2013) Measuring the effectiveness of universal design for learning intervention in postsecondary education. *Journal of Postsecondary Education & Disability*, 26(3), 195-220.
- UDL Universe: http://udluniverse.com/
- DO-IT: http://www.washington.edu/doit/
- Fast Facts from National Center for Education Statistics
- Fong. B.L., Johns, E.M., and Rich, B. ACRL's Winter 2017 Tips & Trends: Accessibility and Universal Design (http://acrl.ala.org/IS/winter-2017-tips-and-trends-accessibility-and-universal-design/)
- Getzel, E., Fostering Self-Determination in Higher Ed: Identifying Evidence-Based Practices, *Journal of Postsecondary Ed & Disability*, 27(4), 381-386, Winter 2014
- HelpGuide.org
- Izzo, M.,Murray, A., Novak, J, 2008, The Faculty Perspective on Universal Design for Learning (https://eric.ed.gov/?id=EJ822094), *Journal of Postsecondary Ed & Disability*, 21(2), 60 – 71.
- Kumar, K. & Wideman, M. (2014) Accessible by Design: Applying UDL principles in a first year undergraduate course. *Canadian Journal of Higher Education*, 44 (1), 125-147.

References 2

- McGuire, J.M. & Scott, S, Universal Design for Instruction: Extending the Universal Design Paradigm to College Instruction, Journal of Postsecondary Education & Disability, 19(2) 124-134, Fall 2006.
- Murray, C., Wren, C., Stevens, E.B., Keys, C. (2009) Promoting University Faculty and Staff Awareness of Students with Learning Disabilities: An Overview of the Productive Learning u Strategies (PLuS) Project (http://files.eric.ed.gov/fulltext/EJ868136.pdf),
- Newman, L.A., & Madaus, J.W. (2014) Reported accommodations and supports provided to secondary and postsecondary students with disabilities: national Perspective, *Career Development and Transition for Exceptional Individuals*. doi: 10.1177/2165143413518235.
- Parker, D.R., Robinson, L.E., & Hannafin, R.D. (2007-2008, Winter) "Blending" teachnology and effective pedagogy in a core course for preservice teachers, Journal of Computing in Teacher Education, 24(2), 61-66.
- Ragpot, I. (2011) Assessing student learning by way of drama amd visual art: A semiotic mix in a course on cognitive development. *Education as Change*, 15(S1), S63-S78.
- Roberts, K.D., Satlykgylyjova, M., & Park, H-J, Universal Design of Instruction in Postsecondary Education, Universal Design in Higher Education, 2 ed. S. Burgstahler (Ed.), 65 – 80, 2015
- The User's Perspective from WebAiM: http://webaim.org/articles/
- Tzivinikou, S. (2014) Universal Design for Learning – application in higher education: A Greek paradigm. *Problems of Education in the 21st Century*, 60, 156-166.
- Wagner, M., Newman, L, Cameto, R., Garza, N., & Levine, P. (2005) *After high school: A first look at the postschool experiences of youth with disabilities*: A report from the National Longitudinal Transition Study – 2 (NLTS2)
- Web Accessibility in Mind (WebAIM)

The Importance of Structure or Description of Links

- Some screen readers can list all the web links for the document. (See screenshot on the right.)
- If only urls are listed, it's difficult for users to relate the urls to your web references.
- It's more meaningful for screen reader to read the website name or label. (See lower half of this screenshot.)