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Design for Social Justice: Partnerships in Recruiting
Access to the Design Professions



UD at UB

Universal Design as a Success Strategy for
University at Buffalo Students, Faculty and Staff

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To understand something,
learn it more than one way.

Marvin Minsky

Co-founder of The Artificial Intelligence Laboratory
Massachusetts Institute of Technology (MIT)



Primary objectives

- 1_ to help faculty develop presentation material that benefits not only students with documented disabilities, but all students
- 2_ to offer course methods that encourage all students to participate regardless of their learning styles and abilities
- 3_ to discuss ways to encourage inclusive education in both traditional and non-traditional academic settings



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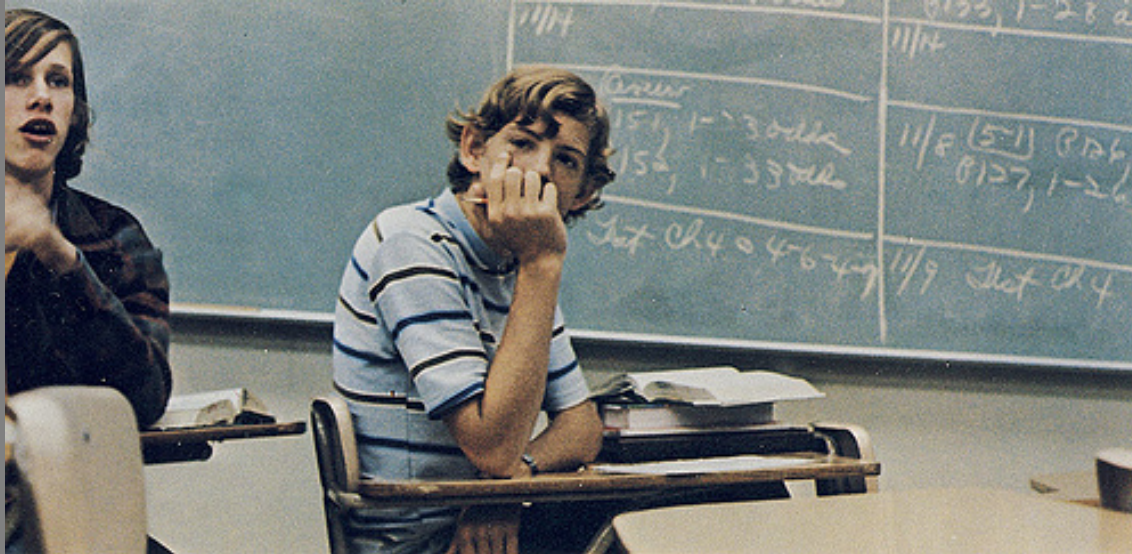
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Many [students] struggle because the way they are being taught is incompatible with the way they learn.

Peter Senge

Director, Center for Organizational Learning
Sloan School of Management (MIT)



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Our UB students have:

- A variety of cultural, ethnic, and racial backgrounds
- Distinct learning styles
- Different primary languages
- Different abilities



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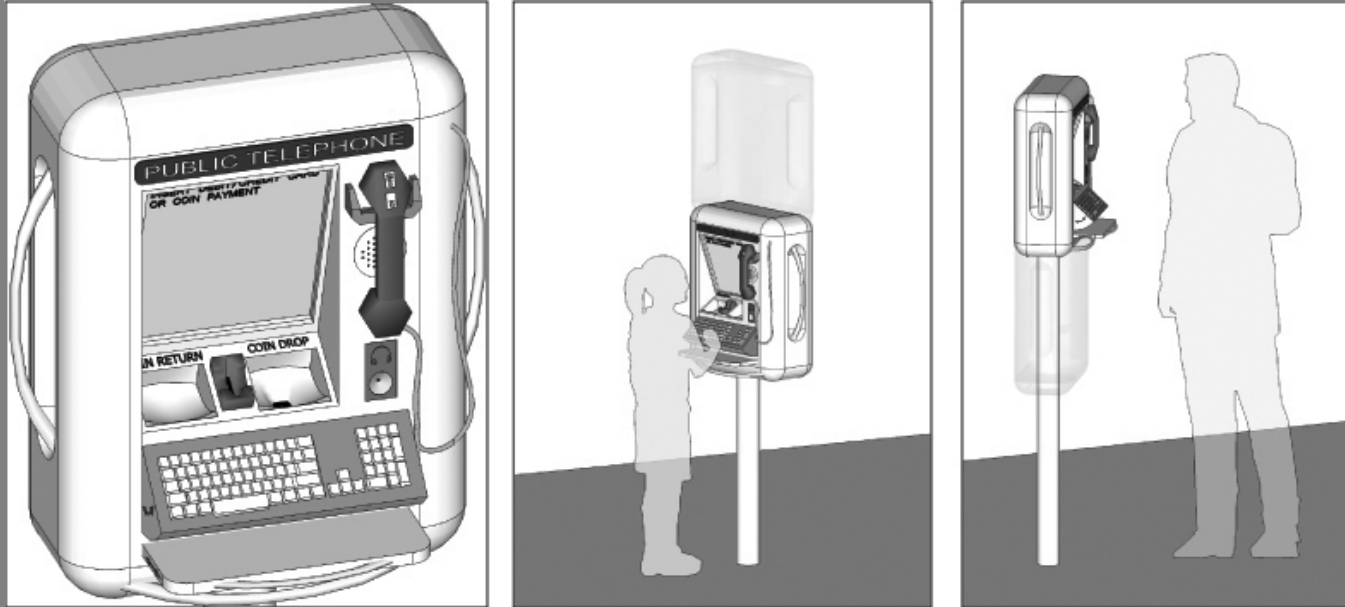
Because of these many factors, our students receive, process, remember, and apply concepts and information in various ways.

As conscientious educators, we need to establish basic equity in the classroom by using multiple modes of learning.



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Universal Design is the design of products, environments, information and systems that are usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.



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The Seven Principles of Universal Design

were developed in 1997 by a group of architects, product designers, engineers, and environmental design researchers to provide guidance in the planning, design and production of our world.

Their goal was to promote design for all.



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Since that time, the principles have been used by educators as well. They have termed the concept Universal Design for Learning (UDL) or Universal Design for Instruction (UDI).



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Universal Design for Learning

is an evolving practice that focuses on meeting the learning needs of all students while maintaining high academic standards.



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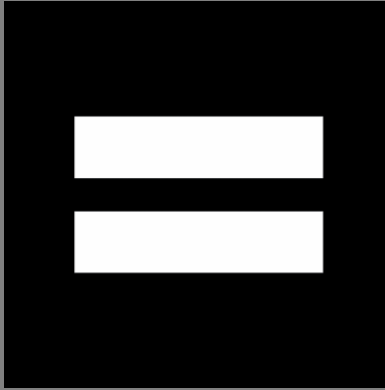


Let's look at the Seven Principles of Universal Design and how they can be applied to learning situations.



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Principles of Universal Design

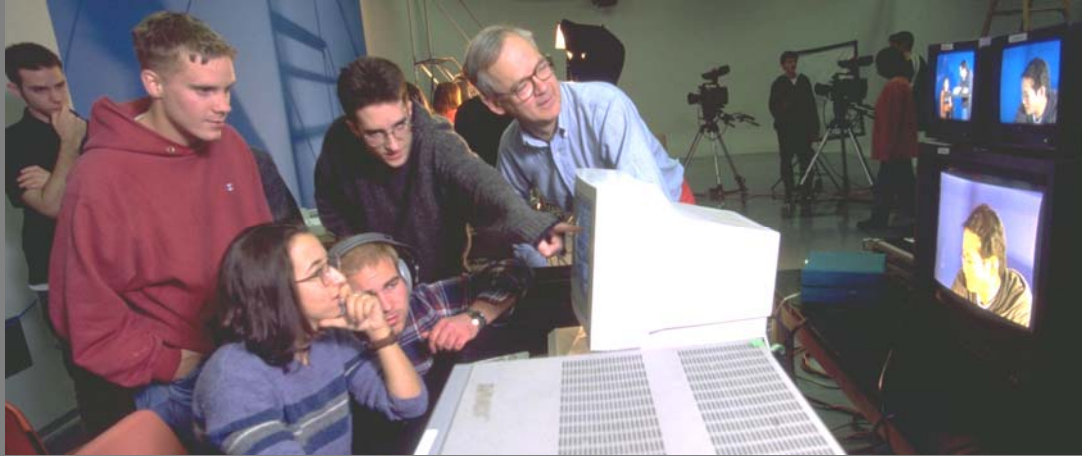
1 Equitable Use

- Equally usable by everyone
- Does not isolate or stigmatize any group



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Example: Universal Design for Learning

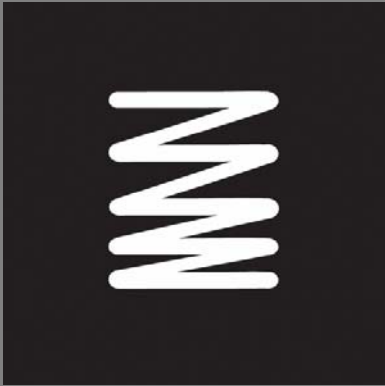
1 Equitable Use

A professor ensures that all students can learn course material by using multiple modes (visuals, audios, text, discussion, hands-on experience, etc.).



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Principles of Universal Design

2 Flexibility in Use

- Provides choice in methods of use
- Accommodates a wide range of individual preferences and abilities



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Example: Universal Design for Learning

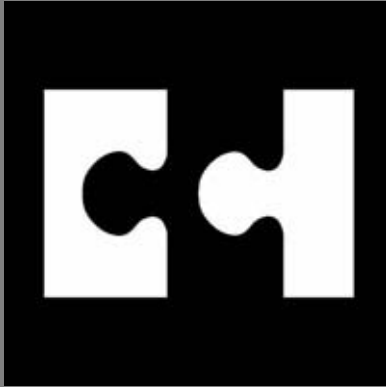
2 Flexibility in Use

Courses are designed to respond to what is actually happening in the class. In other words, professors develop Plan Bs and Cs that are directed at students' interests and needs.



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Principles of Universal Design

3 Simple and Intuitive Use

- Easy to understand, regardless of the user's experience, knowledge, language skills, or concentration level



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Example: Universal Design for Learning

3 Simple and Intuitive Use

Course materials are presented as clearly and directly as possible. Course tools (texts, websites, calculators, microscopes, etc.) are designed to be straightforward and understandable.



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Principles of Universal Design

4 Perceptible Information

- Presents essential information in a variety of sensory modes
- Considers various ambient conditions and the user's sensory abilities



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Example: Universal Design for Learning

4 Perceptible Information

Instructors verbally describe images, objects, or procedures to ensure that those with low vision can understand. Presentation text is spoken, and is large enough to be read in the back of the room.



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Principles of Universal Design

5 Tolerance for Error

- Reduces hazards and the adverse consequences of accidental or unintended actions
- Minimizes inconvenience



Example: Universal Design for Learning

5 Tolerance for Error

Students are given opportunities to learn from their mistakes. For example, an incorrect response on a quiz could prompt an explanation of the correct response.



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Principles of Universal Design

6 Low Physical Effort

- Can be used efficiently and comfortably, and with a minimum of fatigue
- Incorporates safety



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Example: Universal Design for Learning

6 Low Physical Effort

Course material is provided in segments to avoid attention 'burn out'. Students are provided with breaks to stretch and get fresh air/water.



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Principles of Universal Design

7 Size and Space for Approach and Use

- Incorporates appropriate size and space for approach and use regardless of the user's body size, posture, or mobility
- Arranges elements for use by all



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Example: Universal Design for Learning

7 Size and Space for Approach and Use

Faculty make certain that all students have clear access to course material. Tools and furniture are arranged so that all students can use them. Websites have enough 'white space' for easy navigation.



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Example: Steel Beam Connection Assembly

Hearing it



Example: Steel Beam Connection Assembly

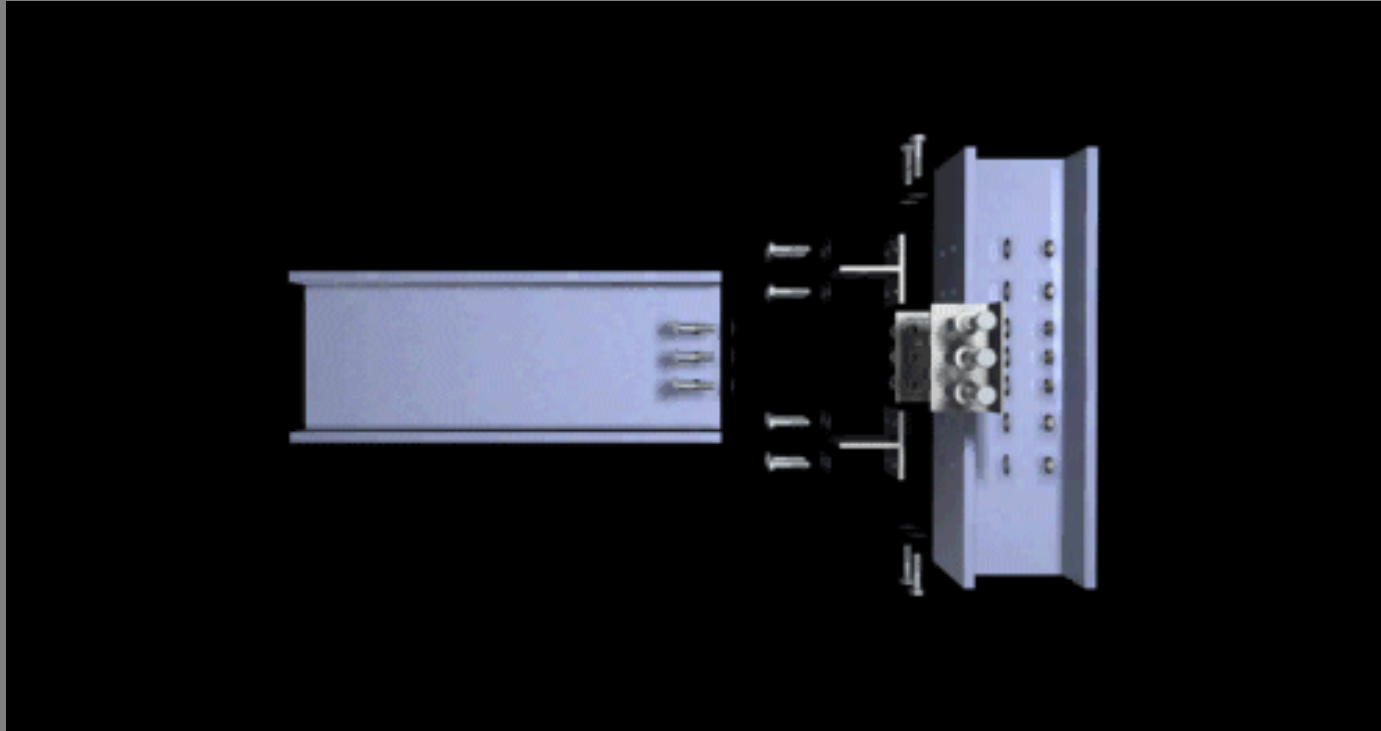
Reading it

In steel construction, the typical connection between a column and a beam requires several different elements: 2 T-sections, 2 elbows, and 24 bolts with nuts and washers. The conventional process includes drilling holes in the column, beam, Ts and elbows. One T is bolted to the column below where the beam is to be located as a support for the weight of the beam. The beam is set on this support to hold it in place while the other T at the top and the 2 elbows, one on each side of the webbing of the beam, are bolted in place. Thus, all four sides of the beam are connected to the column.



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Example: Steel Beam Connection Assembly

Seeing it



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Example: Steel Beam Connection Assembly

Doing it



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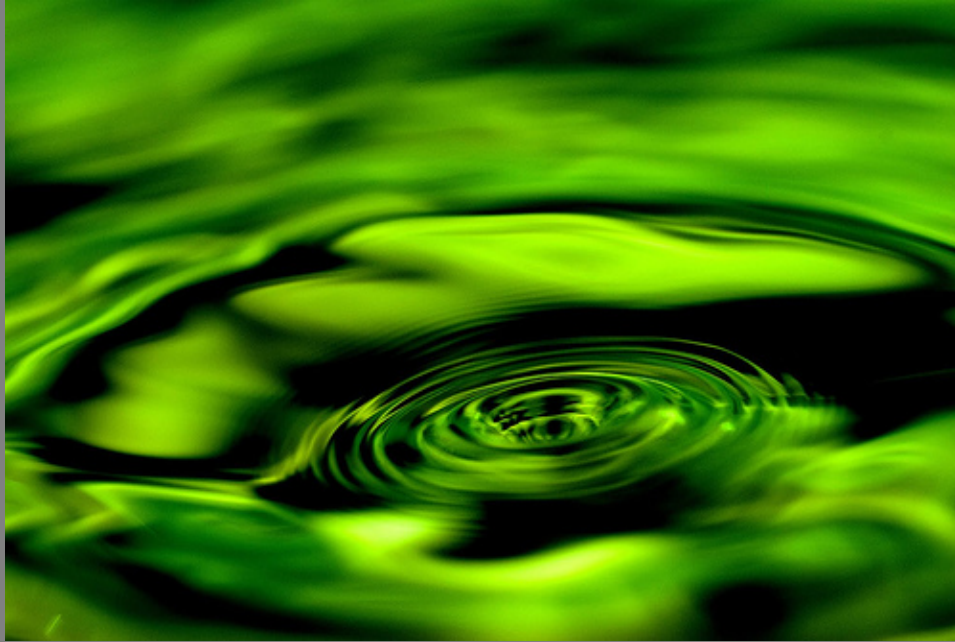


How can the learning experiences
that you design for your students
become more inclusive?



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Remember that Universal Design is an evolving practice that strives to meet the learning needs of all students.

Small changes can lead to big results.



Short Term Outcomes

- 1_ Raise awareness among university faculty, about universally designed approaches to teaching and learning
- 2_ Increase number of faculty who incorporate inclusive teaching/learning practices into their courses



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Long Term Outcomes

- 1_ Increase the number of universally designed courses at the university level
- 2_ Increase the academic success of all University at Buffalo students



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Our aspirations are our possibilities.

Samuel Johnson

English Poet, Critic, and Writer
1709-1784



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Institute for Human Centered Design
[Adaptive Environments]



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Access to Design Professions is a project of the Institute for Human Centered Design/Adaptive Environments and funded in part by the National Endowment for the Arts.



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This presentation is available at



Institute for Human Centered Design
[Adaptive Environments]

www.accesstodesign.org

and



Universal Design Education Online
www.udeducation.org



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For more information, contact

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Resources

Follette Story, M., Mueller, J.L., & Mace, R.L. (1998). The universal design file: Designing for people of all ages and abilities. Raleigh, NC: North Carolina State University, The Center for Universal Design.

Pope, C. (2007). Universal design for learning. Pittsburgh, PA: LDA 44th Annual International Conference

Scott, S., McGuire, J.M., & Shaw, S. (2001). Principles of universal design for instruction. Storrs, CT: Center on Postsecondary Education and Disability.



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Image Descriptions and Photography Credits

S1: Faces of twelve 1st year UB architecture students on the South Campus of UB. Photo: Beth Tauke

S2: Three different methods of learning

1. Left – hands on learning with the help of a teacher. Photo: Flickr Creative Commons:

<http://www.flickr.com/photos/bdamgaard/446717942/>

2. Middle – auditory learning, photo of girl with headphones

Photo: Flickr Creative Commons:

<http://www.flickr.com/photos/rouleau/2218280995/>

3. Right – learning by reading, person reading a book. Photo:

Photo: Flickr Creative Commons:

http://www.flickr.com/photos/slow_boat_to_china/3018187319/



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S6: Person learning in traditional classroom. Depiction of potential issues associated with un-accommodating teaching style.

Photo: Flickr Creative Commons

<http://www.flickr.com/photos/foundphotoslj/466722575/>

S7: UB students conversing on UB property in large gathering.

Photo: Frank Miller, UB Archives

S8: Many identical seats in classroom. Depiction of the nature of standardization of learning for students who may need differing modes of teaching. Photo: Flickr Creative Commons

<http://www.flickr.com/photos/dcjohn/74907741/>



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S9: Adjustable public telephone. Proposal in the R1 IDEA center study at the University at Buffalo. Photo: G.S. Danford, D.M. Schoell

S10: Diverse people in crowd. Photo: Flickr Creative Commons
<http://www.flickr.com/photos/untilism/22800371/>

S11: Two University Students conducting experiment in laboratory.
Photo: Frank Miller, UB Archives

S12: One male and one female UB architecture student working with a male faculty member. Photo: Beth Tauke



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S13: Crowd of diverse people reflected in a crystal ball held in an adult's hand. Photo: Flickr Creative Commons
<http://www.flickr.com/photos/bbphotog/774619240/sizes/l/>

S14: Icon for the 1st Principle of Universal Design – Equitable Use. Icon shows an equal sign on a black background. © Copyright – Beth Tauke, Center for Inclusive Design and Environmental Access, 2000.

S15: Five media students and their professor discussing animations that they are viewing on a computer screen and other monitors. Photo: Frank Miller, UB Archives.



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S16: Icon for the 2nd Principle of Universal Design – Flexibility in Use.

Icon shows a flexible spring on a black background. ©

Copyright – Beth Tauke, Center for Inclusive Design and Environmental Access, 2000.

S17: Two graduate students and their professor demonstrate new flexible building materials. Photo: Doug Levere, UB Archives.

S18: Icon for the 3rd Principle of Universal Design – Simple and Intuitive Use. Icon shows two puzzle pieces that fit together on a black background. © Copyright – Beth Tauke, Center for Inclusive Design and Environmental Access, 2000.

S19: Person using cellular phone. Photo: Frank Miller, UB Archives



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S20: Icon for the 4th Principle of Universal Design – Perceptible Information. Icon shows an eye on a black background. © Copyright – Beth Tauke, Center for Inclusive Design and Environmental Access, 2000.

S21: UB student conduction experiment in science facility. Photo: Doug Levere, UB Archives.

S22: Icon for the 5th Principle of Universal Design –Tolerance for Error. Icon shows a life preserver on a black background. © Copyright – Beth Tauke, Center for Inclusive Design and Environmental Access, 2000.

S23: Microsoft error textbox. Photo: Beth Tauke



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S24: Icon for the 6th Principle of Universal Design – Low Physical Effort. Icon shows a feather on a black background. © Copyright – Beth Tauke, Center for Inclusive Design and Environmental Access, 2000.

S25: UB student sleeping in University facility on notes. Photo: Doug Levere, UB Archives.

S26: Icon for the 7th Principle of Universal Design –Size an Space for Approach and Use. Icon shows a larger person next to a smaller person on a black background. © Copyright – Beth Tauke, Center for Inclusive Design and Environmental Access, 2000.

S27: UB students attending class in computer lab. Photo: Doug Levere, UB Archives.



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S28: Mouth and ear with motion depicting sound between them.
Photo: Ghada Mohamad.

S30: Computer animation of steel beam connection assembly.
Animation: Shahin Vassigh

S31: Two workers connecting steel beams on site.
Photo: Flickr Creative Commons
<http://www.flickr.com/photos/myconstructionphotos/1526753192/>

S32: Three UB students and on professor experimenting with material capabilities in architecture studio facility. Photo: Doug Levere, UB Archives.



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S33: Drop in water. Ability to adapt to change. Photo: Flickr Creative Commons

<http://www.flickr.com/photos/navdeepraj/1469113072/>

S38: Arms of statue reaching for a cloud in the sky outside Pergamon Museum in Berlin. Photo: Flickr Creative Commons

<http://www.morguefile.com/archive/?display=109707&>