

Graduate Education Council

**Accessibility of Electronic and
Information Technology**

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Who are college students today?

Colorado State University



They are diverse

- Ethnicity & Culture
- Gender
- Nontraditional
- ESOL/Native language
- Disabilities
- Learning/Cognitive Styles



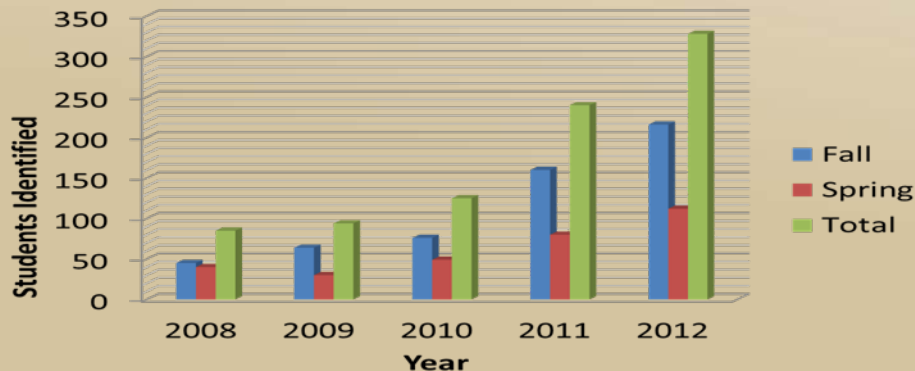
Disabilities in Higher Education

Colorado State University

- Nationally, 11.3% of undergraduates report some type of disability¹
- Students identifying with RDS



Students identifying with ATRC



¹National Center for Education Statistics, 2008; U.S. Government Accountability Office, 2009

²Schelly, Davies & Spooner, 2011, *Journal of Postsecondary Education and Disability*

Disabilities

Colorado State University

- Mobility Impairments
- Visual Impairments/Blindness
- Hearing Impairments/Deafness
- Learning Disabilities
- Attention Deficit Disorder (ADD/ADHD)
- Autism Spectrum Disorder
- Traumatic Brain Injury (TBI)
- Post Traumatic Stress Disorder (PTSD)
- Mental Illness



- Apparent disabilities

- Non-apparent

An iceberg floating in the ocean. The visible tip is small and jagged, while the submerged portion is much larger and more complex in shape. A green bracket on the right side of the submerged part is labeled with the fraction 2/3+. The sky is blue with some clouds, and the water is a deep blue.

$\frac{2}{3}+$

Nate - apparent

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- Profile:
 - Student who is legally blind
 - Computer Science major; Junior
 - Considered a power user of assistive technologies
- Barriers he experiences in accessing coursework
 - Print textbooks
 - Print handouts and study guides
 - PDF's that are image only
 - Visual graphics and formulas



AT used to access his coursework

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- Screen reading software
 - Jaws; Voice Over



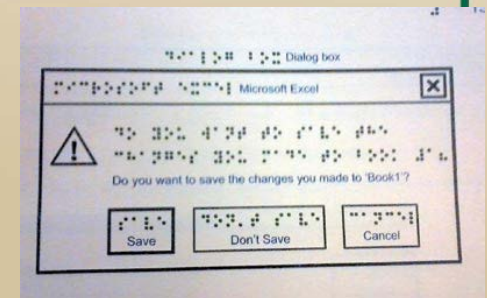
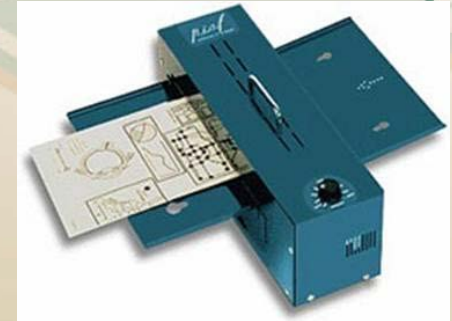
- Braille translation software for embossing

- Refreshable Braille

- Tactile graphics

- Tiger pro graphics with Braille

- Daisy book player - Stream



Course solutions that assist

Colorado State University



- Course content in digital formats –
 - Allows for access with Braille or screen reading software
 - Needs lecture content in digital format and ideally ahead of time – allows him to use refreshable Braille or to emboss content
- Universally designed course materials
 - PDF – has to be OCR'ed
 - Word documents – created with Styles
 - PPT presentations to be made accessible, e.g. labeling of images
 - Web content
 - Video – descriptive audio
- Needs content uploaded into Blackboard to be accessible (Word docs, PowerPoint, PDFs)



Chris – non-apparent

Colorado State University



- Profile

- Undeclared major – Sophomore
- Student with a diagnosis of Dyslexia and ADD

- Barriers he experiences in accessing coursework

- Note taking – slow and laborious
- Written work – slow with handwriting and typing; loses train of thought
- Print books and handouts – unable to read efficiently due to dyslexia
- Poor quality PDF – small, faint and crowded font is hard to read
- Difficulty proof-reading his own work; dependent on family members

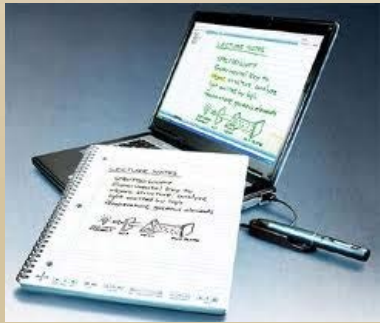


AT used to access coursework

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- Read and Write Gold – literacy software
 - See and hear content simultaneously – digital books and content (text to speech)
 - Manipulate the display (font size, spacing, background color)
 - Electronic highlighting and annotations
 - OCR and read PDF
- Dragon Naturally Speaking – voice recognition software
 - Allows him to get ideas on paper using his voice
- Live Scribe Pen
 - Synchronous written and audio notes for capturing lectures





Course solutions that assist

Colorado State University

- Giving notes ahead of time – lets him print out content on special Livescribe paper
- Handouts in digital formats – lets him use text to speech software
- Universally designed PDF – lets him read and create annotations with Read and Write Gold or other text to speech software



Department of Justice (DOJ)

Colorado State University

- Titles II and III of the Americans with Disabilities Act (ADA) apply to information and services provided through the internet
- Colorado State University is subject to Title II, public entities, and Title III, public accommodations and services
- July 26, 2010, DOJ indicated intent to issue a Notice of Proposed Rule Making (NPRM) to establish accessibility requirements for information offered over the Web
 - The NPRM is anticipated in November 2013



Current Department of Justice Activity

Colorado State University

- DOJ is including in settlement agreements regarding access issues requirements for website accessibility
 - Requiring compliance with Level A Success Criteria in the Web Content Accessibility Guidelines 2.0 (WCAG 2.0) issued by the World Wide Web Consortium (W3C) in December 2008
- DOJ is considering as the technical standard (1) WCAG 2.0's Level AA Success Criteria and (2) the Electronic and Information Technology Accessibility Standards issued under Section 508 of the Rehabilitation Act of 1973
- After the final regulations are published
 - Six months for newly constructed websites and new pages on existing websites and two years for existing websites and Web pages



Ultimate Goal

Colorado State University

- University communication and information transmitted electronically or digitally is made accessible.
- Various forms of communication via electronic and information technology include: websites, course and instructional materials (word documents, PDF documents, Power Point presentations, video, podcasts, etc.), courseware, software, other classroom technologies, content management systems, search engines and databases, registration and grades, financial and human resource management systems, telecommunications, and, emerging technologies.



CSU approach

Colorado State University

- Proposed guidelines
- Training for any and all individuals who create and work with websites and digital information, including faculty
- Resources on accessibility at CSU website
 - [Accessibility by Design website](http://accessibility.colostate.edu/)
(<http://accessibility.colostate.edu/>)
- Seeking support from the Graduate Education Council

