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WGBH and Media Access

WGBH is the leading producer of PBS programs and online content

and a pioneer in educational multimedia and in technologies and in services that make media accessible for people with disabilities.

The Caption Center (est. 1972)

— Pioneered captioning for television (The French Chef and the Captioned ABC News). Provides captioning services for television, home videos, DVDs, feature films and the Web.

Descriptive Video Service (est. 1990)

— Describes television, home videos, DVDs, feature films and the Web by inserting key visual elements during pauses in dialogue.

National Center for Accessible Media (est. 1993)

— Conducts research, develops solutions, and works with standards organizations to address accessibility in new and emerging media. Founding member of the Web Accessibility Initiative (WAI) of the World Wide Web Consortium (W3C).

Discussion of Three NCAM Projects

1. Research into Effective Description Practices - analyzing users' preferences related to efficiency and meaning.
2. Access to Mobile Devices - researching handheld caption format and display solutions
3. Teachers Domain - implementing the Access for All standard within WGBH's digital library of K-12 resources.

Project #1:
Researching Effective Description Practices

Effective Description Practices

- A significant amount of information is presented visually in textbooks and journals, from math equations to graphs and tables to diagrams.NCAM is leading a seminal effort to research effective practices and develop guidelines for audio descriptions of science images within digital talking books (DTBs). Research results will help inform providers of DTBs and other digital materials on how best to use descriptive language to communicate the meaning of science content presented as images within books and journals.
- The project is funded by the National Science Foundation and is a collaboration with representatives from the American Foundation of the Blind, the American Printing House for the Blind, Recording for the Blind and Dyslexic, and the Daisy Consortium, These organizations all provide description for visually impaired users and are currently help shape national policy and practices for provision of accessible materials in electronic formats.

Multi-level Research Process

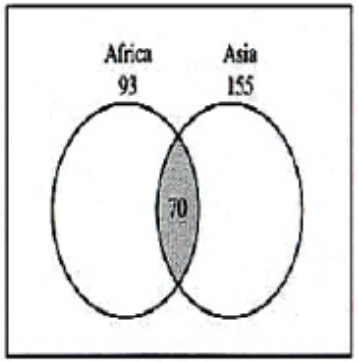
- Selection of test items and development of survey questions
- Two rounds of a Delphi Survey with 30 participants:
  - 15 blind science-focused professionals & graduate students
  - 15 sighted “describers” from AFB, RFBD and APH
- User testing with 60 science-focused adults
- Research design and analysis by Kay Ferrell, Ph.D., Executive Director, National Center on Severe and Sensory Disabilities, University of Northern Colorado

Preliminary STEM Description Guidelines

- Brevity.
- Drill down organization: a brief summary followed by extended description and/or specific data.
- Tables, pie charts and bar charts should be presented as properly coded tables.
- Processes (flow charts, reactions, etc) can be converted into nested lists with good results.
- Make navigation and review easy through bullet points, lists, tables.

Example: Venn Diagram

Example 5.



In a survey of 250 European travelers, 93 have traveled to Africa, 155 have traveled to Asia, and 70 have traveled to both of these continents, as illustrated in the *Venn diagram* above.

Current DTB Descriptive practice:

- The figure is a Venn diagram and shows 2 intersecting circles inside a large rectangle. The circles do not touch the rectangle. The circle on the left is labeled Africa and the number 93 is under Africa and above the circle. The circle on the right is labeled Asia and the number 155 is under Asia and above the circle. The intersection of the 2 circles is shaded and has the number 70 in the shaded region.

Preferred DTB Descriptive Practice:

- The Venn diagram shows 2 intersecting circles, one labeled Africa 93 and the other labeled Asia 155. The area of intersection is labeled 70.

Guidelines and Web-based Training

- Research results and guidelines will be available in January 2009
- A dissemination grant from NSF is supporting development of Web-based trainings, soon to be available via NCAM's Web site at: http://ncam.wgbh.org/dtb/
- For more information, contact:
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Project #2:
Access to Mobile Devices

Use of Mobile Devices

- Millions of Americans of all ages now use cell phones, PDAs or other mobile devices to access video content, at home, in school and at work.
- The 22 million Americans who are deaf or hard-of-hearing cannot benefit from this content because mobile-video technologies do not yet address the technical requirements for packaging and delivering captions.

Captioning Solutions for Mobile Devices

- NCAM is exploring and prototyping methods for delivering captioned media to mobile devices of all kinds. The project is creating demonstration models and prototypes, working with partners and participants such as:
  - AOL
  - Apple
  - HP
  - Open Media Network
  - Research In Motion
  - MacNeil/Lehrer Productions
  - Samsung
- Funding provided by the National Institute on Disability and Rehabilitation Research, U.S. Department of Education

Captioning Solutions for Mobile Devices

Current and emerging mobile video delivery methods

- Downloaded from the Web and synced to mobile device
- Downloaded or streamed via wireless network directly to mobile device
- Over proprietary networks directly to mobile devices such V CAST offered by Verizon or Sprint TV.
- Via dedicated mobile-television standard - Advanced Television Systems Committee Mobile/Handheld (ATSC-M/H)

Mobile Media Project Activities

- Conduct focus groups with end users
  - test a variety of caption-display options
  - ideas for caption-control interfaces
- Evaluate caption-creation methods for mobile delivery
- Create prototypes of caption-control interfaces
- Work with standards groups
  - W3C's Timed Text working group, Synchronized Multimedia working group, Mobile Web Initiative and the Video on the Web activity
  - Advanced Television Systems Committee Mobile/Handheld (ATSC M/H) working group
- Work with industry to develop and refine methods for creating and distributing caption data
- Create working examples of captioned media

Additional Resources:

- Sample videos for handheld devices
  http://ncam.wgbh.org/mm/samples.html
- Chart comparing video and caption-support in various handheld devices
  http://ncam.wgbh.org/mm/devicechart.html
- For more information, contact:
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Project #3:
Teachers' Domain

Teachers' Domain

- Free online digital library for teachers that combines curriculum with WGBH's vast media resources.
- Provides lesson plans and multimedia complete with background essays, discussion questions, suggested activities - all linked to national and state standards.
- Teachers in 55% of US schools are using these resources in their classrooms.
- http://www.teachersdomain.org

Embedding Access for All Standard in Teachers' Domain

- NCAM led a five-year effort within the IMS Global Learning Consortium to develop "Access For All" specifications that define user needs and preferences, as well as resource features, so any information delivery system can automatically adapt to user preferences. This work has led to the development of an International Standard within ISO called "Individualized Adaptability and Accessibility in E-learning, Education and Training." More information about both standards can be found at: http://www.imsglobal.org/accessibility/index.html
- With funding from the National Science Foundation, we are embedding this standard within the infrastructure of Teachers' Domain. This allows the digital library to match learner accessibility needs and preferences with appropriate learning resources and user interfaces.

Access For All

- Users can search for resources that offer captions, audio description, text description, or high contrast/large fonts.
- Users can identify resources that require keyboard controls, mouse controls, or full-color vision
- Teachers can easily find resources that are accessible to a specific student - greatly increases efficiencies for inclusive classrooms.Students can explore resources independently.

Universal Design

- Search features will instantly be available to thousands of teachers.
- Access icons will be seen by every user.
- Benefit to others users as well. Currently, Teachers' Domain data indicates users turn on captions about 20% of the time. Most likely captions being used in computer labs without headphones. Description may also prove to be helpful to learners who benefit from extra information.

Contact Information

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