

Establishing Guidelines for Access of STEM Resources Online

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RIT Undergraduate Research Symposium
8/10/12

Affiliations

- Deaf STEM Community Alliance
- National Science Foundation (NSF)(HRD-1127955)

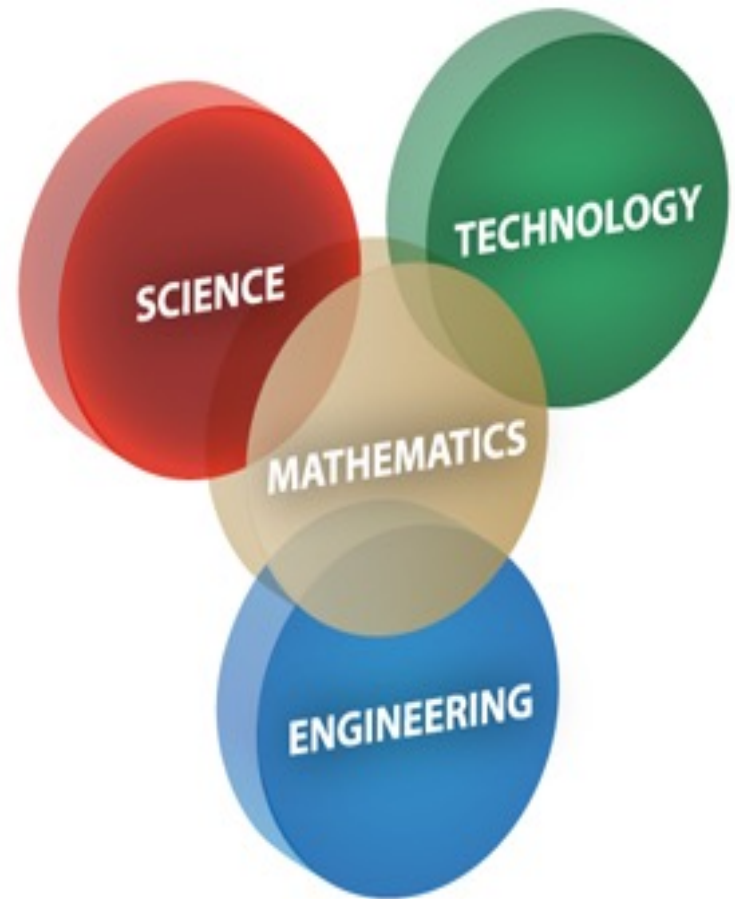


Overview

- Science, Technology, Engineering, and Mathematics (STEM)
- Accessibility
 - 3 Groups
- Digital Libraries
 - Good vs. Bad
 - Curation
 - Recommendations
- Virtual Academic Community (VAC)

STEM

- Description
- Deaf STEM Community Alliance
 - Virtual Academic Community (VAC)



Accessibility

“The power of the Web is in its universality. Access by everyone regardless of disability is an essential aspect.”

– Tim Berners-Lee, inventor of the World Wide Web

- Groups
 - Deaf & Hard-of-Hearing
 - Blind & Low Vision
 - Mobility Impaired
- Tools
 - Web site testing
 - Browser accessories



Accessibility

Deaf & Hard-of-Hearing



- ASL users must be presented with information that is easily understood.
- Users must be presented with content that is very visual.
- High Frames Per Second Rates (FPS) are required when communicating via teleconferencing.
- Mild: 26-45 db.
- Moderate: At 46-65 db.
- Severe: At 66-85 db.
- Profound: Anything over 85 db.

Accessibility

Blind & Low Vision



- Users require computer programs and accessories
- Users face unique challenges in approaching visual media
- Partially sighted: Mild vision problems.
- Low vision: Severe visual impairment.
- Legally Blind: Very limited field of vision.
- Totally Blind: No vision

Accessibility

Mobility Impaired



- Users typically have limited or no ability to use a mouse.
- The users must be able to access all parts of a web page using something other than the mouse, such as the keyboard.
- Level 1: Slightly impaired mobility.
- Level 2: Intermediate impaired mobility.
- Level 3: Severe impaired mobility.

Tools

- Web Site Testing
 - Accessibility Rating
- Browser Accessories
 - Deaf & Hard-of-Hearing
 - Subtitles, Captions, Improve Readability
 - Blind & Low Vision
 - Screen Readers, Change Font Size, Keyboard Shortcuts
 - Mobility Impaired
 - Tabbing, Voice Recognition Software

Digital Libraries

- Good Design vs. Bad Design
- Curation



Good Design (Accessible)

Web Accessibility Initiative (WAI) - home page

http://www.w3.org/WAI/

W3C Web Accessibility initiative

WAI: Strategies, guidelines, resources to make the Web accessible to people with disabilities

W3C Home

- Web Accessibility Initiative (WAI) Home
- Getting Started
- Designing for Inclusion
- Guidelines & Techniques
- Planning & Implementing
- Evaluating Accessibility
- Presentations & Tutorials
- Getting Involved with WAI

Discover new resources for people with disabilities, policy makers, managers, and you!

日本語の WAI Translations

The power of the Web is in its universality. Access by everyone regardless of disability is an essential aspect."

-- Tim Berners-Lee, W3C Director and inventor of the World Wide Web

Web Accessibility Initiative (WAI)

Highlights

Applying WCAG 2.0 to Non-Web ICT: First Draft Published

The First Public Working Draft of [Applying WCAG 2.0 to Non-Web Information and Communications Technologies \(WCAG2ICT\)](#) is now available for review. Please see important background information in the [Call for Review: Applying WCAG 2.0 to Non-Web ICT e-mail](#). Comments are welcome through **7 September 2012**. (2012-July-27)

Understanding WCAG 2.0: Updates in progress

The WCAG Working Group is updating a supporting document for WCAG 2.0 and a draft is available for review: [Understanding WCAG 2.0 \(Editors' Draft\)](#). (This is not an update to WCAG 2.0, which is a stable document.) To learn more about the updates, see [Understanding WCAG 2.0: Updates in progress e-mail](#). (2012-July-27)

Role Attribute Implementation and Testing

[Role Attribute 1.0](#) is published as a Candidate Recommendation. Role Attribute allows authors to add semantic information to documents, which is a requirement of [WAI-ARIA](#). Please see additional information in:

- [Role Attribute 1.0 Candidate Recommendation in Implementation and Testing e-mail](#)
- [How WAI Develops Accessibility Guidelines through the W3C Process](#)

Comments are welcome through **24 August 2012**. (2012-July-12)

Indie UI: New Independent User Interface Working Group

Today W3C WAI launched the new [Independent User Interface \(Indie UI\) Working Group](#) to develop a way for user actions to be communicated to web applications.

WAI develops...

- guidelines widely regarded as the international standard for Web accessibility
- support materials to help understand and implement Web accessibility
- resources, through international collaboration

WAI welcomes...

- participation from around the world
- volunteers to review, implement, and promote guidelines
- dedicated participants in working groups

Announcements

- Open position: [Web Accessibility Specialist \(Europe\)](#)
- Open position: [Web Accessibility Engineer](#)
- [WAI-ACT Project](#)
- [Get WAI Announcements](#)

Events, Meetings, Presentations

- At [PSEWEB Canada's University & College Digital Marketing Conference](#) in Halifax, Canada on 17 July 2012: "Embracing Accessibility - Go for the Carrots" keynote by [Shawn](#)

[\[WAI Presentations\]](#)
[\[Past WAI Events\]](#)

Documents in Progress

The WAI Interest Group (WAI IG) page lists documents in progress, such as accessibility...

Good Design (Accessible)

The image shows a screenshot of a YouTube video player on a Mac. The browser window title is "Google Glasses Project - YouTube". The address bar shows the URL "http://www.youtube.com/watch?v=JSnB06um5r4". The video player displays a video titled "Google Glasses Project" by "Huzaifah Bhutto". The video content shows a person wearing Google Glasses, with a virtual map overlay. The map has a blue path connecting points A, B, and C. Point A is labeled "Non-fiction", point B is labeled "Music", and point C is labeled "Fiction". The map also shows "Train" and "Computer" labels. A settings menu is open over the video, with a red box highlighting the "Settings..." option. The settings menu includes "Translate Captions BETA", "English (transcribed)", and "Turn Captions Off". The video player shows a progress bar at 1:06 / 2:30, a like button, and a share button. The video has 289,350 views and 1,209 likes, 40 dislikes. The video was published on May 7, 2012, by Huzaifah Bhutto. The video description includes the link "http://g.co/projectglass".

Preview File Edit View Go Tools Bookmarks Window Help Wed 1:22 PM

Google Glasses Project - YouTube

http://www.youtube.com/watch?v=JSnB06um5r4

Reader deaf & hard of hearing accessible websites

scrap RIT gmail kat.ph Gmail yahoo mail mp3skull Crazy Shit School NOVA skateboarding myCourses PNC M&T comedy STUMBLE tube youtube convert

YouTube google glasses Sign In

Browse Movies Upload

Google Glasses Project

Huzaifah Bhutto + Subscribe 17 videos

Watch the 2012 Olympics Live and On-by 2012NBCOlympics 335,452 1 FEATURED VIDEO

Amazing Google Glasses Demonstration by minippro 133,339 views

Google Glasses (how it works) by taoistflyer 195,360 views

"ER BERMOQ - JON BERMOQ" (O'zbek Kino) by UzCinema2 219,114 views

Battlefield 5 on Google Glasses (the Marine) by TheresaCanal 1,608,444 views

Plies Gives A Little Girl \$10,000 Cash For Her by DREAMVISIONWORLD 491,297 views

Goggle - Project Dangerous Glasses by HappyToaster 392,080 views

Settings...
Translate Captions BETA
English (transcribed)
Turn Captions Off

289,350

Published on May 7, 2012 by Huzaifah Bhutto
For More <http://g.co/projectglass>

1,209 likes, 40 dislikes

Show more

Bad Design (Not Accessible)

The screenshot shows a Safari browser window displaying the website <http://www.thefreelibrary.com/>. The browser's address bar and search bar are visible at the top. The website's main navigation bar includes links for "RIT gmail", "kat.ph", "Gmail", "yahoo mail", "mp3skull", "Crazy Shit", "School", "NOVA", "skateboarding", "myCourses", "PNC", "M&T", "comedy", "STUMBLE", "tube", and "youtube convert".

The website's content is organized into several columns and sections, each with a title and a list of links. The sections include:

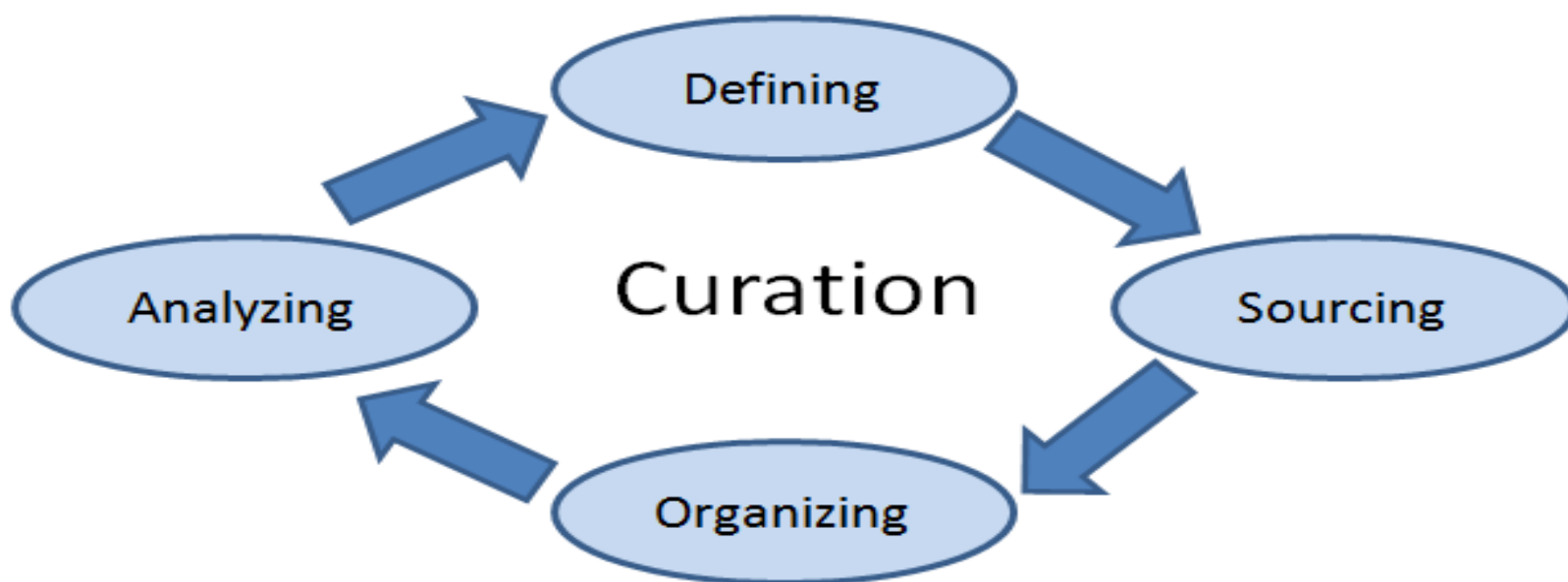
- + Add/Restore Content**: A section for managing content.
- Publications**: A list of publications including "Our Community", "Science World", and "Washington Monthly".
- Articles by date**: A list of articles sorted by date, from "Latest date" to "before 1995".
- Articles by topic**: A list of articles sorted by topic, including "Acquisitions and mergers", "Periodicals", and "Politicians".
- Authors**: A list of authors including "Miller, Daniel", "Nusbaum, David", and "Fine, Howard".
- Literature**: A list of literature including "Jack London", "Mark Twain", and "Shakespeare".
- Business (15,952,914)**: A list of business-related articles, including "Advertising, marketing, public relations", "Aerospace and defense industries", "Agricultural industry", "Architecture and design industries", "Automobile industry", "Banking, finance and accounting", "Biotechnology industry", "Business", "Business, international", "Business, regional", "Chemicals, plastics and rubber", "Computers and office automation", "Construction and materials industries", "Electronics and electrical industries", "Engineering and manufacturing", "Environmental services industry", "Fashion, accessories and textiles", "Food and beverage industries", "Forest products industry", "Health care industry", "Home based business", "Human resources and labor relations", "Insurance", "Internet and Businesses Online", "Jobs and Careers", "Metals, metalworking and machinery", "Non-Profit", "Petroleum, energy and mining", "Publishing industry", "Real estate industry", "Retail industry", "Sport, sporting goods and toys industry", "Transportation industry", and "Travel industry".
- Health (474,864)**: A list of health-related articles, including "Food/cooking/nutrition", "Health, general", and "Psychology and mental health".
- Humanities (311,080)**: A list of humanities-related articles, including "History", "Humanities, general", "Literature, writing, book reviews", "Philosophy and religion", "Relationships", "Self Improvement", "Women's issues/gender studies", and "Writing and Speaking".
- Law (687,191)**: A list of law-related articles, including "Government", "International relations", "Law", and "Politics".
- Recreation (827,793)**: A list of recreation-related articles, including "Gambling", "Sports and fitness", and "Travel, recreation and leisure".
- Science (811,816)**: A list of science-related articles, including "Biological sciences", "Chemistry", "Computers and Internet", "Earth sciences", "Economics", "Electronics", "Environmental issues", "Geography", "High technology industry", "Library and information science", and "Mathematics".
- Communications (10,569,669)**: A list of communication-related articles, including "Communications, general", "Mass communications", "News, opinion and commentary", and "Telecommunications industry".

On the right side of the page, there are several additional sections:

- Customize Your Homepage**: A section for customizing the homepage, including options for "TheFreeLibrary.com now allows you to create your own personal homepage by adding and removing, dragging and dropping, and 'using or losing' existing content windows. In addition, you can add your own bookmarks, weather information, horoscope, and RSS feeds from anywhere on the web."
- Random Article**: A section for a random article, featuring "Science News: Mystery volcano site pinned down: Indonesian crater implicated in mid-13th century eruption." The article text reads: "One of the biggest mysteries in volcanology may finally be solved. An eruption long thought to have gone off in the year 1258 happened the year before in Indonesia, scientists report. Until now, researchers have known a big volcano went off somewhere in the world around that time, spreading cooling sulfur particles around the globe. But they didn't know exactly where or when. The new report remains something of a mystery. Franck Lavigne, a geoscientist at... [keep reading this article](#)"
- About The Free Library**: A section about the library, stating: "Since 2003, The Free Library has offered free, full-text versions of classic literary works from hundreds of celebrated authors, whose biographies, images, and famous quotations can also be found on the site. Recently, The Free Library has been expanded to include a massive collection of periodicals from hundreds of leading publications covering Business and Industry, Communications, Entertainment, Health, Humanities, Law, Government, Politics, Recreation and Leisure, Science and Technology, and Social Sciences. This collection includes millions of articles dating back to 1984 as well as"

Curation

“A curator is an information chemist. He or she mixes atoms together in a way to build an info-molecule. Then adds Value to that molecule.” – Robert Scoble



Design Recommendations

- Full Accessibility: Satisfy needs of all 3 groups
- Curate a design that utilizes common accessibility tools
- Use open source Web development platform

Virtual Academic Community

Safari File Edit View History Bookmarks Window Help

The Deaf and Hard of Hearing Virtual Academic Community | DHHVAC

http://www.rit.edu/ntid/dhhvac/ dhhvac

scrap RIT gmail kat.ph Gmail yahoo mail mp3skull Crazy Shit School NOVA skateboarding myCourses PNC M&T comedy STUMBLE tube youtube convert

VAC Accessibility PP - Google Docs The Deaf and Hard of Hearing Vir...

RIT RIT Home RIT Directories RIT Search

Home

- About Us
- Project Goals
- Project Background
- Project Award Info
- Partners & Sponsors
- Project Resources
- Contact Us

The Deaf and Hard of Hearing Virtual Academic Community

Deaf STEM Community Alliance

Welcome to the Deaf and Hard of Hearing Virtual Academic Community (VAC) hosted by the Deaf STEM Community Alliance!

Supported by the National Science Foundation (HRD-1127955), the National Technical Institute for the Deaf at Rochester Institute of Technology, Camden County College, and Cornell University are constructing an on-line community to support the learning needs of students who are deaf and hard-of-hearing in the areas of science, technology, engineering, and mathematics (STEM).

Virtual Academic Community on

Conclusion

- Requirements
 - Accessibility
 - Appealing
- Curation
 - Efficient organization of information
- Applications to the VAC
 - www.dhhvac.org

Additional Information

- Researcher:
 - Kellard, Wade. wak8572@rit.edu. Center on Access Technology, RIT.

- Mentor/Supervisors:
 - Elliot, Lisa. Ibenrd@ntid.rit.edu. Center on Access Technology, RIT.
 - Rubin, Ben. bwrubin@gmail.com. Center on Access Technology, RIT.

- VAC WEB
 - <http://www.rit.edu/ntid/dhhvac/>

Q & A

Abstract

This presentation will describe the development of guidelines for an online academic community which is designed specifically to accommodate persons with diverse communication and access needs. The online community is a project of the Deaf Science, Technology, Engineering, and Mathematics (STEM) Community Alliance, that is funded by the National Science Foundation (NSF).

Persons with diverse access and communication needs include individuals who are Deaf & Hard-of-Hearing, Blind & Low Vision, and Mobility Impaired. Team members are developing an online community that compiles information and resources for topics involved in STEM. The goal is to make learning and communication easy for people who face challenges accessing STEM resources and learning online. Many of the Web sites and resources available today don't provide the necessary tools for learning. Ultimately, we are designing a website that incorporates all of the necessary tools and resources to meet our accessibility requirements.

The process of discovering and compiling this information is ongoing. This presentation will describe Internet access needs for diverse groups of users, examples of accessible websites, and examples of accessible STEM resources. Documentation of required guidelines is being created for future team members to follow in the next 4 - 5 years. The outcome of this research project will create an online community that can benefit anyone with diverse access and communication requirements.