

Turning Streaming Media into Useful Resources: Results from the National Gallery of the Spoken Word

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Five Years of NEH and NSF Funded Research

- 1. Historical Voices: NEH demonstration project
- 2. National Gallery of the Spoken Word: five-year DLI2 project
- 3. The Spoken Word: New Resources to Transform Teaching and Learning: International Digital Library Partnership
- 4. NSF-EU Spoken Word Working Group

Institutional Context

- Michigan State University
 - MATRIX: The Center for the Humane Arts, Letters, and Social Sciences Online
 - <http://www.historicalvoices.org>
- Northwestern University
 - NWU Academic Computing
 - <http://www.oyez.org>

The Big Picture: The Importance of Spoken Word Resources

Providing meaningful access to the recorded human record

A revolutionary moment equivalent to the development of the printing press?

Potential educational value

Past, Present, and Future

- Quantity of existing spoken word materials
- State of digitization and access
- The born-digital future

NGSW Research Agenda:

Develop the potential of digital libraries to deliver oral resources

1. Audio digitization
2. Metadata schema
3. Watermarking
4. Digital repository structured for AV materials
5. Intellectual property issues
6. Searching within audio
7. Alternative Delivery formats
8. Interoperable, Trans-institutional development

Major Advances in 4 Years

- Best practices in audio digitization
- Community standards for technical metadata
 - Next stage increased automation in metadata generation
- Functional watermarking tools
- Development of multimedia digital repositories
 - Dramatic declines in storage costs
- Development of rich presentation formats
 - Streaming advances/downloads
 - SMIL and FLASH

Continued Challenges: Proposed Solutions

- Intellectual Property
 - Creative Commons approach
- Searching within audio stream
 - Annotations/user generated metadata
- Meaningful interoperability
 - Secondary repositories

Search and Locate Content within Streaming Audio

- The transcript solution
- Searching sound itself has not been practical
- Advances in voice recognition software has not translated into much value for digital libraries
 - Language model problem

Annotations

- The potential of user generated metadata to unlock the power of streaming media
- Value lies not in the media but what you do with it.
- What you do with it enables others to make better use of it

Media Matrix

- Allows users to find, segment, annotate, organize, and publish streaming media on the World Wide Web
- Uses browser's bookmark feature to launch application
- Finds and loads media into editor
- Allows user to “isolate” portion of media and annotate
- Users can organize clips/annotations on personal portal page
- Create publications/presentations from clips and annotations
- Archive independent

Media Matrix Technology

- Server-side
 - Database driven - MYSQL
 - php/javascript
 - Xml based delivery/display
- Demonstration

Media Matrix

- Uses
 - Digital Archive/Library
 - Easy creation of derivatives
 - Distributed creation of intellectual metadata
 - Re-use of user generated information as metadata
 - Education
 - Allow teachers and students to more easily use multimedia materials in the classroom
 - Create multimedia presentations and reports
 - Courseware manufacturers: could enhance courseware packages

Project Pad

The screenshot displays the Project Pad application interface. On the left is a vertical sidebar with four sections: "Jerry's Notes", "Project Group", "Questions & Answers", and "Trash". The "Project Group" section is expanded, showing a list of items including "Project Pad Notes", "Audio Annotation", "Gratz v. Bollinger Oral Argument (2003)", "Grutter v. Bollinger Oral Argument (2003)", "Eldred v. Ashcroft Argument (2002)", "Eldred v. Ashcroft Opinion (2002)", "Lawrence and Garner v. Texas Argument (2003)", "Lawrence and Garner v. Texas Opinion (2003)", "Audio Transcripts", "Bug Reports", "Feature Requests", and "Project News". The "Lawrence and Garner v. Texas Opinion (2003)" item is highlighted in red.

The main content area is titled "Lawrence and Garner v. Texas Opinion (2003)". It features a search bar with the text "scalia" and a "Search" button. Below the search bar, the text reads: "JUSTICE ANTHONY KENNEDY The judgment of the Court of Appeals for the Texas Fourteenth District is reversed. Justice O'Connor has filed an opinion concurring in the judgment. Justice Scalia has filed a dissenting opinion in which the Chief Justice and Justice Thomas joined. Justice Thomas has also filed a separate dissenting opinion."

At the bottom of the main content area, there is a video player interface. A yellow sticky note with the text "Scalia's dissent begins here." is positioned over the video player. The video player has a progress bar with a red vertical line at 00:09:30 and a double-headed arrow indicating a selected range from 00:09:30 to 00:10:00. The video player controls include "In", "Out", "+ Add Note", "Play", "Pause", and "Stop" buttons.

Conclusions

- Empowering DL Users
- Unlocking educational potential
- Interlocking resources through secondary repositories
- The Multimedia future