

**Gallaudet Digital Archive Video for Education (DAVe)**

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<http://www.rit.edu/~techsym/detail.html#T2D>

**ABSTRACT:** The "Gallaudet Digital Archive Video for Education (DAVe)" is an online collection that preserves, indexes, and makes accessible archival film and video from the University's unduplicated collection of deafness-related media. The development and use of this system will be described.

**SUMMARY:** The "Gallaudet Digital Archive Video for Education (DAVe)" initiative is an eighteen-month project, composed of four major activities:

- preserve, digitize, and annotate (meta-tag) existing video objects focused on deaf language, culture, history, and community from the collections maintained by Gallaudet Television and Media Production Services and the Gallaudet Library.
- expand the video infrastructure and develop technical methodologies for systematizing copyright approval processes and for data exchange between the Gallaudet Digital Video Learning Object Collection and the ALADIN catalog of the Washington Research Library Consortium.
- produce visual histories of key figures in the deaf community, focusing on important cultural and historical events from the mid-1980's to the present.
- devise, document, and support curricular uses of the Gallaudet Digital Video Learning Object Collection, including supporting student and faculty use, annotation, and creation of video objects.

Now in its early stages of development, the Gallaudet VideoLibrary will become a resource available to people interested in deafness world wide and will include a unique collection of historic film, video and graphic documentation of deaf history, language, and culture, dating back to the earliest films at the beginning of the 20<sup>th</sup> Century.

With the generous financial support of The Andrew W. Mellon Foundation (<http://www.mellon.org>) and North Plains Systems (<http://www.northplains.com>), Gallaudet University launched the Digital Archive Video for Education (DAVe) project in June 2005. DAVe is an online video library which uses North Plains Telescope Digital Asset Management System to organize and annotate video and other learning objects for education. The video library, in its early stages of development, will first be available only to members of the Gallaudet community, then expanded to the education and research communities, with portions of the collection also made available to the general public. Intellectual property rights will determine which portions of the collection are available to which audiences.

The concept of a digital video library at Gallaudet University was first formalized in the 1998 Technology Plan. After more than two years of reviewing video asset management systems and

working with vendors to add features to their products, Gallaudet acquired the Virage Webcast system in 2002 and added the Virage Archive product in March 2004 after that product had undergone a major upgrade. By the end of 2004, however, it became clear that there was little additional development ongoing with the Virage products following the acquisition of Virage by the Autonomy Corporation in September 2003. At that time, Gallaudet began reviewing other digital asset management solutions and came upon North Plains Systems, which had received the 2005 Digital Media Applications Company of the Year Award from Frost and Sullivan ([http://www.northplains.com/media\\_center/pr\\_2005\\_01\\_19.html](http://www.northplains.com/media_center/pr_2005_01_19.html)). North Plains Telescope offered a flexible meta-data model that would make searching the archives easier and more powerful. Telescope also integrated with the Virage Videologger for ingestion of analog videotapes and had under development an interface to Telestream's Flip Factory for direct ingestion of digital assets. In December 2004, Gallaudet applied to The Andrew W. Mellon Foundation and to North Plains System for funding of the DAVe project. Both grants were awarded in June 2005.

### **Gallaudet's Video Collection**

Gallaudet University has an extensive collection of original films and videotapes related to deafness. These rare and exclusive films are vital resources for scholars of Deaf culture, heritage, and language. Deaf people rely heavily on visual communication and expression. Visual documents, particularly motion pictures, represent the most valuable and complete records of Deafness and Deaf people. Only visual media fully capture and articulate cultural Deafness and signed communication. Due to the absence of a comprehensive integrated search index and the fragile condition of many of the older films, most of these materials have been largely inaccessible to scholars and the general public for many years, even though scholarly interest in Deaf culture, language and history is at an all-time high.

The University Library Archives' collection includes over 300 films prior to 1960, dating back to the oldest known film (1910) in American Sign Language of the University's founder and first president, Edward Miner Gallaudet. Other items include the National Association of the Deaf's historic film collection of personal narratives about Deaf life in the 19<sup>th</sup> and early 20<sup>th</sup> centuries, and about the importance of sign language. Many of these films feature 'ordinary' people from the Deaf community at social events, which are of particular value to scholars of Deaf culture and linguistics. Among the collection is more than 300 hours of footage of Gallaudet classroom scenes, student activities, drama presentations and academic ceremonies from 1927 to 1949. Later acquisitions include a Deaf Folklore collection focusing on personal narratives and Deaf humor, and several separate Oral History collections consisting of more than 700 hours of interviews with important Deaf people; many of them conducted by members of the University's History and Government Department.

Television and Media Production Services, a unit within Academic Technology, maintains a separate videotape collection dating back to the 1970s. Included in this collection is the original footage from the award-winning Deaf Mosaic television series (1985-1995). Of particular interest is more than 20 hours of exclusive footage documenting the 1988 Deaf President Now movement that led to the appointment of Dr. I. King Jordan as Gallaudet's first Deaf president. Also in the collection are oral histories collected at the National Black Deaf Advocates convention and an international conference on Deaf survivors of the Holocaust, as well as many significant academic

and cultural events such as the Deaf Way Conferences and Festivals (1989 and 2002), World Congresses of the Deaf, theatrical presentations and interviews with major Deaf personalities in public affairs, language, arts and culture.

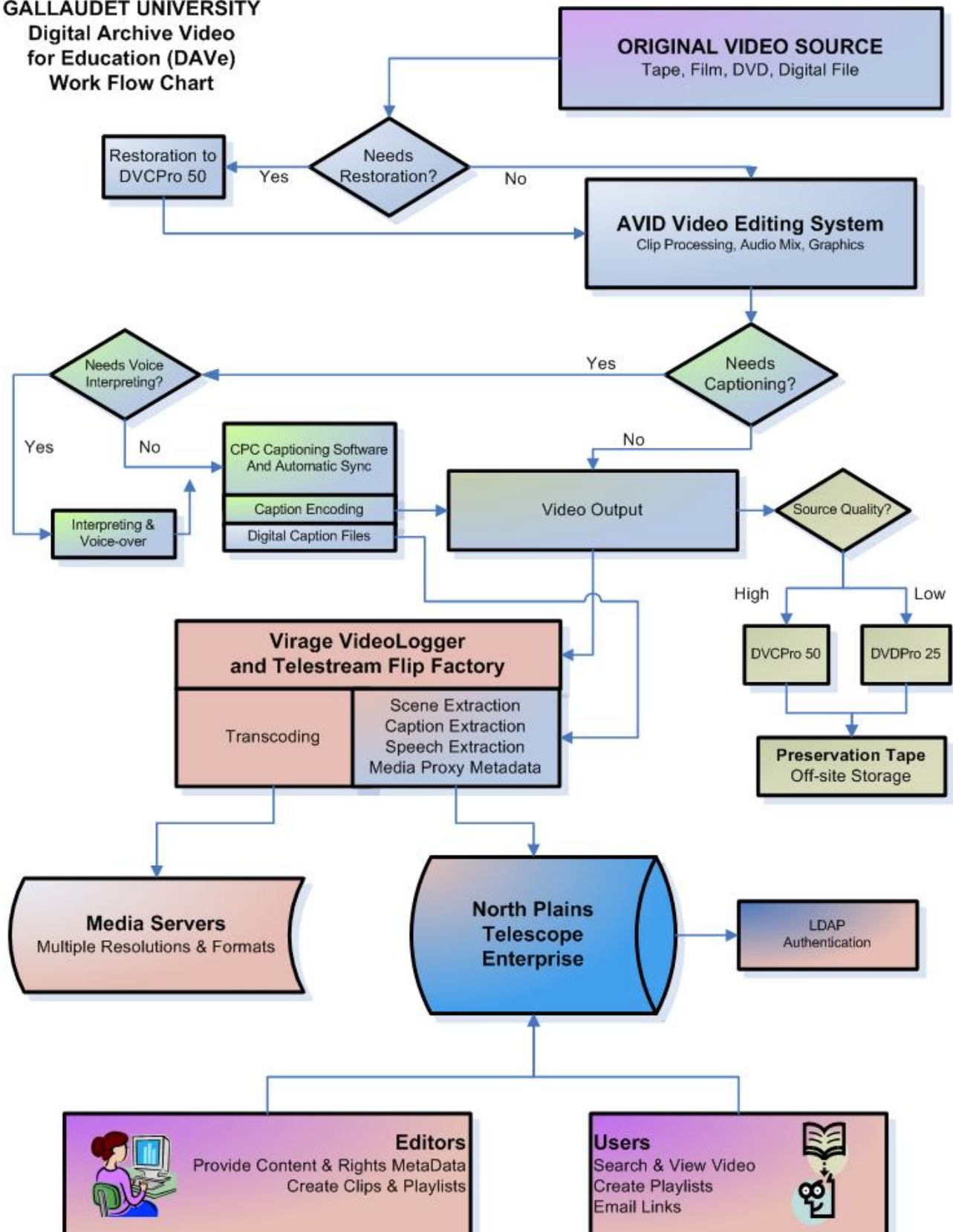
For the DAVE project, approximately 200 hours of content will be selected, digitized, and annotated, including 50 hours of films that are at risk due to deterioration or obsolete formats, 10 hours of new visual histories, and 140 hours of other videos from the library and television archives. An Advisory Board of faculty, staff, and students will help select the content. The 50 hours of at-risk films will be sent out for professional restoration and digitization, following the guidelines of the National Film Preservation Foundation (<http://www.filmpreservation.org/preservation/fpg.pdf>), which were produced through a grant from the Mellon Foundation. The ten hours of new visual histories will be of key deaf leaders whose stories will be captured and memorialized on video. Videos from the 1970's onward will be digitized on-campus—converting the video from 3/4" U-matic, Betacam, DVCPro, miniDV, VHS, or other format—and ingesting the video through the Virage Video Logger for storage on Gallaudet's media streaming servers.

Access copies of the videos will be stored in Quicktime and Windows Media format, as 400Kbps and 1Mbps versions. The one meg versions will likely be restricted to on-campus use only, primarily available for high-quality full-screen playback. A DVD-quality version (5-7 Mbps) will be stored on optical disks. Preservation copies of all videos will be made on DVCPro tapes at 50 Mbps I-frame-only resolution and stored in the Off-Site Storage Facility of the Washington Research Library Consortium (<http://www.wrlc.org/offsite.htm>).

Post-ingestion asset preparation involves development of content meta-data, documentation of rights meta-data in North Plains Telescope Enterprise, and use preparation (clips and playlists). The meta-data editors will submit meta-data via the Gallaudet DAVE web site. The meta-data editing team will consist of Catalog librarians, Archive librarians, content experts, videographers, and graduate students who are trained to use a controlled vocabulary. The Catalog librarians will provide training to the team and perform periodic reviews of entered meta-data—to ensure consistency and identify re-training needs. Some parts of the meta-data will be automated: auto scene logging, speech-to-text extraction, line 21 caption extraction, and media proxy data. Clip and playlist creation (segmentation and aggregation) will be performed by the content experts and videographers, who know the content of the video best. A diagram of the work flow is shown on the next page.

We will also create data exchange processes between the Gallaudet Digital Archive Video for Education (DAVe) system and the ALADIN catalog of the Washington Research Library Consortium (<http://www.wrlc.org>). We will extract data of films and videos currently in ALADIN in XML format for entry in the Virage Archive system. We will export data in XML format from the Virage Archive system for input into ALADIN as MARC records. Providing catalog records within ALADIN will widen access to the video collection.

**GALLAUDET UNIVERSITY**  
**Digital Archive Video**  
**for Education (DAVe)**  
**Work Flow Chart**



Planning for the DAVe project also highlighted the need for a centralized copyright approval data base. Gallaudet University has received many video donations and produced many videos over the years. Each office (e.g., Admissions, Clerc Center, TV, Library, academic departments, research projects) maintains separate copyright clearance procedures and forms. We would like to standardize and centralize this process and provide a new data base system for maintaining electronic copies of permissions and releases. We are envisioning a system that would update our current method of storing paper permission forms in whatever office originates the video production or donation to a centralized, self-service system that would allow producers and donation recipients to use the imaging system available at Gallaudet to convert paper permission documents to electronic ones and to link those documents to the meta-data for the video object within the digital video library. Gallaudet's committee on Video and Intellectual Property Rights will determine procedures for review and oversight of the permissions data base, with responsibility most likely being assigned to the Publications Office or the Library at Gallaudet University. The back-end support for the system will be provided by Academic Technology. [Note: We plan to enhance the system—at some future date—to include electronic signatures. Currently, electronic signatures are not sufficiently trusted in today's society and the mechanism for creating them with a broad audience of potential authors and actors is beyond the scope of this project.]

Curriculum integration of the DAVe collection at Gallaudet University will focus on the six academic departments selected to be housed in the new Sorenson Language and Communication Center, focused on Deaf people's language, culture, history, and community: ASL and Deaf Studies; Communication Studies; Hearing, Speech, and Language Sciences; History and Government; Linguistics; and Sociology. Faculty, students, and professional staff in these departments will participate in collection evaluation activities and in training activities.

The faculty and staff training activities will build on the successful e-Curriculum model (<http://learntech.gallaudet.edu/ecurriculum>), first designed in Gallaudet's Curriculum Showcase Project (funded by the Mellon Foundation, 1999-2002). The e-Curriculum model includes intensive summer workshops and on-going meetings and curriculum development activities throughout the academic year. During Summer 2006, the e-Curriculum workshop will focus on developing uses of the restored 1910-1969 films, the oral histories from the early 1980s, and the Deaf Mosaic videos. Faculty and staff will learn to search, create play lists and clips, and annotate the video objects. They will learn to post links and playlists within the Blackboard learning system, and they will use the Blackboard Learning Object catalog to share their links and playlists with other faculty and members of the Gallaudet community.

During Fall 2006, the e-Learning staff in Academic Technology will assist the faculty in the selected departments with teaching students to use the DAVe collection for academic projects. For example, students will be taught to search the collection and create play lists from searches. They will be taught to create clips (short segments) from the video objects in the collection and to post the results of their searches with the Blackboard learning system that is used for course interactions on campus.

## Project Outcomes

The outcomes of the DAVe project are key components of Gallaudet's academic plan called "New Directions for Academic Affairs" (<http://academicaffairs.gallaudet.edu/planning>). Specifically, priority 3.1 is to "preserve Gallaudet's rich cultural heritage and promote the study and appreciation of Deaf culture, Deaf history, and American Sign Language." The Digital Archive Video for Education (DAVe) will provide a rich source of materials for analysis, research, and learning. The project will provide curricular resources and opportunities for cross-disciplinary interactions that are vital to creating the synergetic heart of the teaching, learning, and research experience in the state of the art facility, James Lee Sorenson Language and Communications Center, due to open by 2008.

The outcomes of this eighteen-month project are significant and include:

- a rich collection of digital video learning objects that is accessible to a world-wide audience of people interested in deafness.
- an expanded video infrastructure capable of supporting the growing interest in digital video artifacts among the Gallaudet community.
- creation of a new series of visual histories, capturing an era of the Deaf community that has not been captured to date.
- promotion of collaboration, especially among those academic departments that will be co-located in the new academic research and teaching center.
- development of systems and procedures for managing copyright issues and permissions on an institutional level.
- Development of technical authentication systems for allowing external educators and scholars to have access to the DAVe collection.
- development of curricular materials and methods for using video in learning and research.

### Digital Archive Video for Education (DAVe) Demonstration

During the presentation for the 2005 International Symposium on Instructional Technology and Education of the Deaf, Gallaudet University will demonstrate the video library using video provided by the Utah Education Network (UEN) (<http://www.northplains.com/customers/cs-uen.html>), which uses North Plains' Telescope to digitize and distribute educational videos to teachers in PreK-12 schools across the state. Gallaudet gratefully acknowledges and thanks UEN for their assistance. Screen shots included in this paper are from the UEN video collection. When the Gallaudet video library is available for public viewing, an announcement will be posted on the same page as this paper (<http://academictech.gallaudet.edu/2005/NTIDSymposium>).

The North Plains' Telescope 8 interface for end users is shown in Figure 1. On the left side, one sees a list of catalogs (sub-collections) that are available, along with a Quick Search and other options. The "My Cart" option shows assets that have been selected for download. When one selects a catalog, the list of assets in that catalog is displayed on the right side.

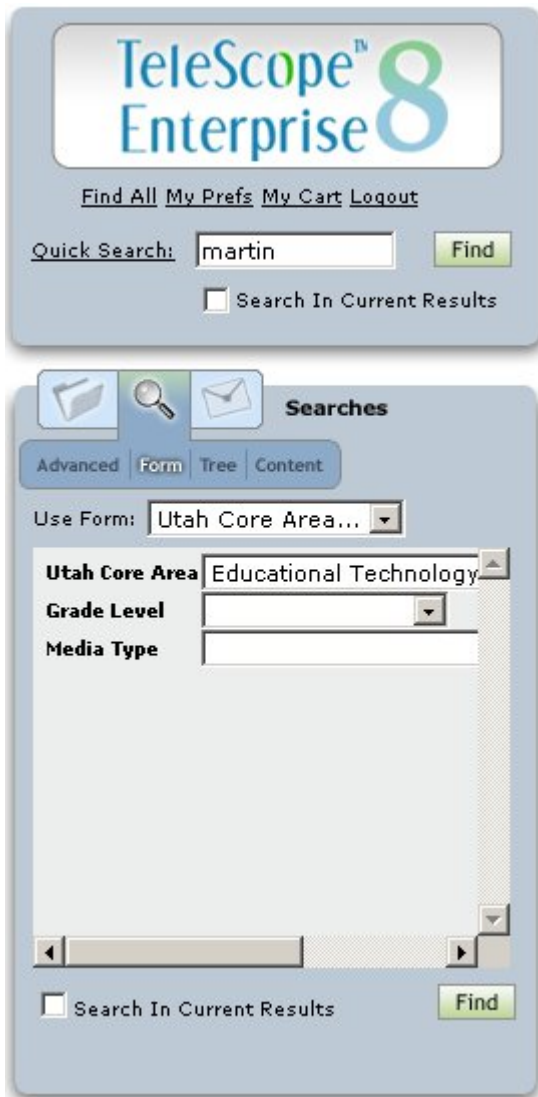


Figure 2. North Plains Telescope Enterprise 8 Catalog View

The preview of a video asset is shown in Figure 2. The view includes small pictures representing each clip (scene change) automatically created when the video was processed through the Virage Videologger. Closed caption data extracted from the original video is also displayed on the CC tab below the video. The “CC” on the video toggles display and hiding of the captioning. End users can also create notes about the various assets in the system.



Figure 2. North Plains Telescope Enterprise 8 Video Preview



End users may search the video via Quick Search or by selecting the Search icon, which provides four additional ways to search the collection (see Figure 3).

Advanced Search allows the end user to select any meta-data field and find information in that field. For example, in the DAVE collection, one can search the field “Language-Signed” to find all videos with American Sign Language or other signed languages.

Form Search allows the end user to search via a form defined by the system administrators. In the example from UEN to the left, one can search by Utah Core Area, Grade Level, and Media Type.

Tree Search allows the end user to search via a tree defined by the system administrators. In the DAVE collection, for example, one can search a tree organized by authors (so one can browse the list of authors and find all works by a selected author).

Content Search allows the end user to search the text contained within document files stored in the system. Thus, if the papers from NTID Symposium were stored in Telescope, one can search for “North Plains” and find this paper.

Figure 3. Telescope 8 Search Options

The Telescope Enterprise system supports all kinds of digital files and supports on-the-fly translation between image formats (e.g., creating a jpeg from a tif file). End users can select assets they wish to download and store the list of assets in “My Cart.” When the end users click “My Cart,” selected assets are shown and users can download the assets in PC or MAC-comparable formats (see Figure 4). Note: Assets that are stored on streaming media servers are not available for download.



Figure 4. North Plains Telescope 8 Download Cart

An optional module, Order Processing for the North Plains Telescope system, supports ordering of DVDs and other offline versions of assets stored within the digital asset management system.

The North Plains Telescope system is flexible and scalable. It will meet the needs of the DAVE project, as well as other video collections at Gallaudet. Gallaudet University gratefully thanks The Andrew W. Mellon Foundation and North Plains Systems for their financial support. Gallaudet University is responsible for the content and all necessary licenses and permissions for content incorporated into DAVE (Digital Archive Video for Education).

### Visual Legacy

Gallaudet University has begun an exciting journey toward archiving valuable and historical video files and making them available to the world wide community interested in deafness. The Gallaudet Digital Video Archive for Education (DAVe) is designed to preserve the past, present and ultimately the future, passing on a rich portrait of the lives, language and culture of deaf people to future generations.