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# Don's Conference Notes: Video as a Scholarly Content Format: An NFAIS Virtual Sermiar; and The Next Generation of Discovery Services: Where Are They Headed? An NFAIS Workshop

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# Don's Conference Notes

by Donald T. Hawkins (Conference Blogger and Editor) <dhawkins@verizon.net>

## Video as a Scholarly Content Format: An NFAIS Virtual Seminar

We live in a virtual world in which video is becoming increasingly prominent. An NFAIS Virtual Seminar on May 14, 2014 entitled “*The Emergence and Rise of Video as a Scholarly Content Format*” examined the growing importance of video in academic institutions and how they are responding to the demand for it. Following their presentations, each speaker was asked to identify the major issues still needing attention.

Stephen Rhind-Tutt, CEO of Alexander Street Press (ASP, <http://alexanderstreet.com>), led off with an excellent overview of the current role of video in the scholarly landscape. ASP was one of the first vendors of commercial streaming video content collections for libraries and has been selling video since 2006, serving hundreds of media companies, film makers, and producers, as well as millions of faculty and students at more than 30,000 institutions. Rhind-Tutt said that a major change has occurred in the past six to seven years because no dedicated devices are now required to record or view video: the old “media cart” that was wheeled into classrooms has gone the way of the dinosaurs. Today’s students are well versed in video, and many of them have been using it for almost all of their academic life. They watch video in classrooms and on the Web; they record it on their smartphones, capturing lectures, filming experiments, and conducting interviews; and they use Skype to connect with their peers.

Much of today’s video usage is via YouTube. One in seven people use YouTube regularly, and 100 hours of video are uploaded every minute. (See <http://youtube.com/yt/press/statistics> for more fascinating statistics on its usage.) YouTube now has twice the popularity of Wikipedia, and video currently accounts for 57% of network traffic, primarily because of the enormous rise of media-enabled tablet computers.

Because video occupies such a large role in the marketplace, it is important that publishers and content providers embrace it. It is no longer trapped and inaccessible on old media, and according to a report on a national survey that was presented at the 2013 Charleston Conference (slides available at <http://www.slideshare.net/Charleston-Conference/streaming-video-in-academic-libraries-preliminary-results-from-a-national-survey>), 70% of academic institutions now stream video, and those that don’t are planning to do so within the next three years. Collections of video content exist at many universities; about 60% of them are using vendor-created portals because it is easy to subscribe to them. The top two leading vendors in this market are ASP and Films on Demand (<http://ffh.films.com/digitallanding.aspx>). According to a 2009 report, major uses of video by faculty members are as shown here.



Uses of video extend across many disciplines, such as film, dance, education, anthropology, news, and history. It provides new learning methods; for example, students studying dance can not only read about the moves of performers, but they can also see them. Videos of significant moments in history can portray not only what happened but also the background and emotion, thus taking understanding of the event to a different level.

Rhind-Tutt concluded with a list of nine issues necessary to make video useful in academic environments:

1. **Digitization.** Much material is still stuck on old media, and processes need to be developed to get it online.
2. **Quality.** Material must be complete and accurate. It is all too easy for editing processes to make subtle and significant changes in the content.
3. **Searchability.** Detailed search is still not available for videos — most of them can only be cited by their title. Much of their latent value is therefore lost.
4. **Speed of comprehension.** Transcripts significantly lower comprehension times; for example, although 30 minutes of video take 30 minutes to view, a transcript of those 30 minutes is 12 pages long and can be read in depth in 6 minutes or scanned in 2 minutes.
5. **Analysis and annotation** will allow users to jump to different parts of a video or isolate sections for further study.
6. **Library integration.** There is a large demand for database searching and cataloging tools to be added to videos.
7. **Sharing.** Video clips can be e-mailed, embedded in course materials, cited, and saved.
8. **Tablets and mobile access.** Tablets are excellent for video access.
9. **Preservation** is one of the most important issues. Many valuable items have been lost, including 90% of silent films produced before 1929 and half of the films with sound produced before 1950.

The technical barriers to widespread adoption of video have been largely surmounted, and new ways of using video are emerging rapidly. Tomorrow’s students and scholars will demand video and will expect it to be a normal part of their curricula.

According to Rhind-Tutt, the top issues still needing attention are:

- **Transcripts** which will promote searching and aid discoverability,
- **Metadata** (today’s MARC records are still the best we have),
- **Licenses and permissions** (today’s situation is similar to where books and journal were in past years), and
- **Demand across all disciplines.** There is much potential for growth in many disciplines, where the ability to see is very important.

Deidre Woods, Executive Director, Open Learning Initiative at the University of Pennsylvania, discussed the role of video in changing academic environments. She noted that we are in a period of major disruption, with the emergence of non-traditional students and MOOCs. Students with high expectations of technology arrive at universities well able to use online resources and expect to learn online. Woods echoed Rhind-Tutt’s observation that YouTube has been a major force for change. It is used every day as a reference for something, and even videos created with very low budgets can have significant meaning.

Many sources of institutional support for using video exist, such as libraries, information technology departments, and instructional design materials. Classes are now being “flipped,” in which students watch videos of lectures ahead of time and then use their class time to work problem sets in small groups. One advantage of flipped classes is that students can view the lecture material in depth and can rewind and review it to gain a better understanding; however, experience has shown that creating video materials for flipped classes requires a significant amount of time and effort.

Woods concluded with a view of what works with video, what doesn’t work, and what’s next:

### What works:

- Faculty interested in experimentation who are willing to take risks,
- An institutional mandate and support (which is critical),
- Videos in small chunks (about 4 to 6 minutes): students generally will not watch more (most lectures do not need 50-minute periods to get their point across!), and
- Video with content close to class assignments (if it’s relevant to the exams, students will readily watch it).

### What does not work:

- Poor quality audio (poor video is marginally acceptable but not poor audio),
- Material originally created for another purpose, and

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- Material not appropriate for today's devices such as tablets and smartphones (content must be delivered where the users are; much of the world does not use PCs any more).

**What's next:**

- Courseware and adaptive learning (of which video is a significant part),
- Changes to classrooms (what should be done with large lecture halls in an environment of flipped classes?),
- Research on emerging standards and best practices,
- Videos for the humanities (there are many videos used in business, scientific, medicine, and engineering courses, but fewer in the humanities), and
- Experimentation and innovation.

**Woods** identified these issues still needing attention:

- Global bandwidth for remote dissemination of information,
- Standards for what is acceptable and effective, and
- Getting past a fear of irrelevance.

**Michael Stoller**, Director, Collections and Research Services, **NYU Libraries**, discussed how today's libraries are interacting with video (NYU has been acquiring video content for 30 years). He said that libraries' needs are simple: acquire and store video content, make it accessible to students and researchers in the ways they need it, and preserve it for future generations. In the past, acquisition was easy, and the major adjustment was the change from videotapes to DVDs, but now videos are online. Services such as YouTube and iTunes are well attuned to the consumer market and credit card purchases, but libraries generally buy materials with purchase orders, which is difficult to do online. Much video content is in formats other than those used by services such as **Alexander Street Press**. The library world is still waiting for a vendor that can work with them to acquire those materials.

Storing videos was easy when they were on tapes or DVDs because they could be stored like books and did not take up any more space than a book. But when videos went online, the file sizes became huge — up to 100 gigabytes per hour of video. Thus, NYU's collection of commercial videos on tapes or DVDs would require up to 8 petabytes (8,000,000,000,000,000 bytes) of storage. Making all that video accessible to users is not easy, particularly if it must be streamed to locations on the other side of the world. (NYU has campuses in Abu Dhabi and Shanghai, and watching a movie streamed there is painfully slow.)

Preservation of video content is a major concern. Many videos only exist in obsolete formats; NYU's collection of 65,000 tapes is obsolete because industrial-quality players are no longer available. One might think that they could just be copied to DVDs, but DVDs are likely to become obsolete. And streaming the material to classrooms is not possible because of copyright restrictions; today's copyright law permits usage only in the library. Despite these challenges, video has become our most common form of expression because we live in a visual culture. It has become an essential part of classroom instruction and research — 35% of all NYU classes actively use video. Libraries need to deal with video content because they are memory organizations; it's their job!

**Stoller** said that the main issue needing attention is not technological but intellectual property law and restrictions on usage, particularly for commercially purchased video.

**Rick Gilmore**, Associate Director and Co-Principal Investigator, discussed **The Databrary Project** (<http://databrary.org>), an open-data library for developmental science where researchers can share video, audio, and related metadata. The project is governed by a community of advisors and is supported by NSF, NIH, NYU, and Penn State University. (NYU has committed to store data from Databrary indefinitely.) **Gilmore** said that **Databrary** concentrates on video because it is uniquely rich, transparent, readily repurposed, and easily captured. For example, he is working with head cameras mounted on small children to capture what they are seeing and help us understand their visual experiences.

A major challenge encountered by the project is the need to preserve privacy and confidentiality. Because faces on videos are identifiable, researchers are required to undergo ethics training and be governed by local ethics boards. Access to project data is restricted to only authorized users, and there is a tie between users and their institutions. Data can be shared only between institutions that have signed a use agreement.

**Databrary** researchers have developed an open source viewer, **Datavyu** (<http://datavyu.org>), which runs on both Windows and Mac platforms and incorporates video coding and visualization tools. **Databrary's** vision of the future includes partnerships with professional societies in which materials from journals and conferences can be stored and shared, as well as partnerships with publishers to share published manuscripts and supplemental data.

**Jim Ulsh**, Director, Product Development, **ProQuest**, reviewed some of the infrastructure considerations surrounding video content. He noted that many people are well aware of **ProQuest's** textual content but do not realize that it also has thousands of hours of video content from hundreds of sources. Extensive use is made of cloud-based systems for content delivery, storage, processing, internal processes, and marketing. Scalability is the major reason for using the cloud, but other considerations include delivery optimization, support, availability, costs, and ease of use. Player support is also a significant consideration; newer video players have resolved many platform issues.

It is important to take inventory of content and know what you have before starting a video project because video means various things to people. Formats, conditions, and volumes are also significant. A major consideration is rights issues that will determine what can be distributed or streamed and limitations such as audiences, geography, etc. Demands to remove content from a database will be inevitable, so a takedown process should be established before distribution begins.

Discoverability is a key issue for audiences. How will users search for and find the content they want? How will they use it? Metadata is important; some is better than none. **Ulsh** recommended not sanitizing the metadata because many fields may be unique to the data. Users will expect to be able to access video content on multiple devices, search, browse, and find related content. Transcriptions are highly useful and can be done by machine or manually. Automated transcriptions are cheaper and faster than manual ones, but they are less accurate and lack structure.

**Betsy Bollar**, Director, JBJS Product Line, **Journal of Bone and Joint Surgery, Inc. (JBJS)** began the final session of the Webinar with a description of how **JBJS** is using video. **JBJS** is the leading journal in the orthopedics field and is currently celebrating its 125th year of publication. Its product line includes several related journals, one of which, *Essential Surgical Techniques (EST)*, is devoted to orthopedic surgery. A survey of *EST* readership revealed that 70% of its audience was accessing Websites to watch videos of operations, 97% of the viewers said that the content of greatest interest to them was surgical techniques, and half of them said their preferred video length was 10-12 minutes. So a project was begun to include videos in *EST* articles. The first author-submitted video was added in 2004, and from then until August 2013, 101 videos were added to the journal. Until then, viewers had to navigate away from the article to the video file, which was an inconvenience; however, in August 2013, the capability to add "inline" videos to articles became available. Since then, 93 new videos have been added, and the journal's Table of Contents indicates which articles contain videos. All new *EST* articles now contain at least one video.

A new Deputy Editor for Video position was created, and that Editor reviews all submitted videos using these criteria:

**Technical and Production:**

- Video clear?
- Camera steady and smooth?
- Can the anatomy be appropriately visualized?
- Lighting acceptable?
- Field of view and angle of view clear?
- Appropriate captions?

**Content:**

- Video relevant?
- Video accurate?
- Does it meet its stated goals?
- Is the video factual?
- Are the steps shown appropriate or are important sequences missing?

Because *EST* articles discuss surgical procedures, individual short clips 15 to 30 seconds long showing each step in a procedure are preferred over a longer video showing the entire operation.

Brightcove (<http://www.brightcove.com>) was selected as the video storage and streaming platform. **JBJS** developers used its API to create

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an interface allowing authors to upload their videos directly and send the URL to the Editorial Manager. This system has been well received by the authors who found that it significantly enhanced and streamlined the upload process.

Using the video expertise gained in the past year, a video-based certification course with 15 hours of content and offering CME credits has been developed. **Bollar** said that the most urgent needs for **JBJS** are to increase the amount of video on the site and help authors become more familiar with the technology of video editing. She also said that DOIs for individual figures and videos will be created in the future which will make it easier to cite them.

**Jane Hannon**, Acquisitions Editor, *Journal of Visualized Experiments* (*JoVE*, <http://www.jove.com>), followed **Bollar** and said that *JoVE* is a completely video-based methods journal. She noted that scientific publication has not kept up with advances in the research process, so it is often difficult to replicate research results. In fact, two studies recently published in *Nature Drug Discovery* found that fewer than 25% of the results from a number of articles could be replicated. **Hannon** suggested that if one could see how the experiments were done instead of having to rely only on a textual description, reproducibility would be significantly enhanced.

*JoVE* publishes articles from many disciplines, each of them containing video clips of experimental methods. Even though the articles are video-based, they follow the same structure as a traditional research article, with an abstract, introduction, methods, results, and conclusions. *JoVE* does not use author-submitted videos; once an article has been accepted for publication, a professional videographer is sent to the author's laboratory to shoot the video, thus freeing authors from the need to worry about the technical details of producing an acceptable video. Most of *JoVE*'s videos are 10 to 12 minutes long. **Hannon** said using professional videographers provides substantially more control over the videos and results in higher quality, so *JoVE* plans to continue this process. The costs are offset by library subscriptions, and authors are asked to contribute as well.

Once the video has been created and published, the author receives a copy of it and is encouraged to share it among peers and colleagues, which increases its exposure by being cited. As *JoVE* says, "Get sighted by getting cited!" *JoVE* articles are indexed in a number of traditional databases, such as PubMed, SciFinder, Chemical Abstracts, and Medline, and they are cited just like articles from any other journal. *JoVE* currently publishes about 80 videos per month.

*JoVE* has been well received in the market; over 675 institutions are now subscribers, and the Website receives over 400,000 visitors per month, 80% of whom are affiliated with academic institutions, some of which are shown in the graphic at the top right.

Users like *JoVE*, both for reading and for learning about new techniques, as shown by these two typical quotes from case studies:

- From an author: "The video format conveys complicated methods significantly better than text alone and helped validate our novel results."



- From a reader: "Once you can see how someone else does something, or see how someone does something differently than you, it makes your work better."

One of *JoVE*'s readers reported that she saved over \$15,000 in the costs of chemicals, wages, and travel by watching videos published in *JoVE*, as well as a significant amount of time (30 days to learn new experiments without the videos vs. 5 days with them).

**Hannon** said that the most often requested enhancement to *JoVE* is a mobile application so that readers do not need to be tied to their PCs but can watch the videos on the fly as they conduct experiments, show them to their colleagues, etc.

The presentations were followed by a question period, in which the presenters were asked for their opinions on what people need to know when they are considering a video project or when they are just beginning one. The responses fell into a number of similar themes:

- **Rights.** Permissions to create videos and licenses to use and distribute them.
- **Formats.** How files are labeled and organized; and where they are stored.
- **Metadata.** What metadata is associated with the videos and how they are cited.

Additional observations included:

- Not everything requires video; consider if the content would really be enhanced by it. Start by looking at use cases.
- Consider the costs. Videos don't just materialize from iPhones! They are expensive; make sure you will serve the user appropriately if you produce one.

The program for the Webinar is available at <http://nfais.org/event?eventID=547>, and access to an archival version can be purchased by contacting NFAIS at <http://www.nfais.org>.

## The Next Generation of Discovery Services: Where Are They Headed? — An NFAIS Workshop

This workshop, held on June 20, 2014, was a follow-up of previous NFAIS Workshops on various aspects of discovery services. It attracted an audience of about 80, 30 onsite and 50 virtually, and brought together players from various parts of the industry: librarians, publishers, and content providers.

### Discovery Service Overview

**Judy Luther**, President, **Informed Strategies**, led off with a review of the discovery landscape and noted that the field has been marked by unexpected turns and strategies. Libraries have long wanted to provide a unified Google-like way for their users to seamlessly access all of their content. Such an approach benefits not only the users, but also librarians who see increased use of their resources, and content providers who gain greater visibility of their content. Today's four major discovery services are:

- **EBSCO** Discovery Service (EDS), which is often used as a starting point for research,
- **Primo** from the **ExLibris Group**, offering a seamless integration with a library's other services,
- **ProQuest's** Summon Service, which has recently added a capability to automatically update a library's eBook holdings, and

- **OCLC's** WorldCat, which has entered into a partnership with **NBCLearn** (<http://www.nbclearn.com>) to provide access to primary source videos and is integrated with teaching tools.

According to **Luther**, a major challenge for discovery services is their impact on the visibility of content, which is usually determined algorithmically. The issue really comes down to whose content appears on the first page of results — many users never get farther (which is a common issue with all searching systems, including Google). Other challenges are the need for integration with other tools and services — the back end for delivery and the front for coverage — and a diminished use of advanced features of the content such as specialized thesauri and search strategies.

Content neutrality in a highly competitive market is a major issue for Web-scale discovery systems because it is difficult to avoid bias in displaying search results.<sup>1</sup> There are also complex issues to be addressed in negotiating for access to databases, such as what metadata will accompany the results and whether the content has been prepared for use in a discovery service. Despite these issues, discovery services offer significant advantages to users because they permit searches across a wide range of content, including that

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