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Hua Yi

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- ongoing developments in new acquisitions models (subscription vs. purchase, local campus acquisitions vs. consortia deals, librarian-selection vs. user-selection etc.),
- new pricing models (single year pricing, multi-year pricing, pricing based on FTEs or on usage, etc.) and
- new assessment methods and standards (vendor usage statistics, web logins and standardized usage guided by library professional organizations).

Through literature reviews and a study of the usage of two OSV databases during six semesters at California State University of San Marcos, this research aims to review the OSV trends in collection building/management and OSV use in academic libraries.

The research findings indicated that OSV was a valuable teaching and learning resource at CSUSM. More longitudinal studies covering wider OSV resources would be valuable to test and support this observation.

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# Developing a Media Collection that Addresses Trends while Targeting the Needs of Users: An Analysis of Online Streaming Videos (OSV) at CSU San Marcos<sup>1</sup>

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## ABSTRACT

In the past two decades, library collections have gone through drastic changes, moving from print based to primarily electronic based. The transition started with electronic indexes and abstracts, then e-journals, e-books, and finally online streaming videos (OSV). New technology brings new challenges as well as opportunities. Librarians must keep abreast of:

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**Keywords:** Online Streaming Videos, Usage, Electronic Resources, Academic Libraries

## INTRODUCTION

In the past two decades, library collections have gone through drastic changes from print based to primarily electronic based. These transitions started with electronic indexes/abstracts moving to e-journals, then to e-books and most recently to online streaming videos (OSV). New

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technology brings new challenges as well as opportunities. Librarians must keep abreast of ongoing developments in new acquisitions models, new pricing models, and new assessment methods and standards.

In the past few years, California State University, San Marcos (CSUSM) library has acquired several OSV databases. In addition to the conventional collection of DVD and VHS, these OSV resources were added to the media collection through purchasing (with perpetual rights), subscription (licensing) and Patron-Driven-Acquisitions (PDA) models. We need to assess the value of these databases in newer format to ensure they are supporting users and meeting their progressive expectations.

Through literature reviews and a study of the usage of two OSV databases during six semesters at CSUSM, this research aims to review trends in OSV collection building, management, and use in academic libraries. In short, in this increasingly complicated time, it is more important than ever before for librarians to engage in this type of research in order to keep up with information trends and better support teaching and learning.

## LITERATURE REVIEW

### Trends

There are many writings in the library literature noting that OSV has increasingly become the mainstream video format in academic libraries. It is one of the most impactful resources for engaged teaching and learning. This resource type is continuing to grow as more libraries are adopting it, more content is being made available in this format, and more users are accessing it. *Library Journal's* recent survey of academic libraries in North America showed 95% of respondents provided streaming videos in their libraries, and 83% of these respondents offered streaming videos from multiple vendors (Dixon, 2017).

Several studies described the process of how video resources have evolved from film reels, U-Matic tapes, VHS, DVD, laserdisc and self-streamed videos to OSV databases provided by commercial vendors (e.g. Bergman, 2010; Little 2011). Like books and journals, videos have evolved from tangible formats to electronic formats. Some factors contributing to this process (for example, economic or social factors) are similar factors that contributed to the evolution of books and journals. However, unlike print resources, previous videos always need a playing device, be it a standalone laserdisc player or a DVD drive on the computer. In this sense, technological factors have probably played a bigger part in the process of making tangible video formats obsolete as we cannot help but note that new MacBook is not equipped with a DVD drive.

In discussing factors influencing the trends of OSV growth, several studies lined up the most important environmental factors from technology advancement, to economic environment,

and to users and user behaviors (e.g. Handman, 2010; Yi, 2016). The rapid development in network and computer technology has made discovery and delivery of electronic resources quick and easy. Budget limitations make it a necessity for academic libraries to tailor their collection resources to those materials actually used by faculty and students. Users “live” online for work, study, social life, entertainment and more. They expect the resources they need will be available to them online. As Yi (2012, 2016) argued, three factors (demand from users, supply from vendors, and both infused by technology) interact with one another and push or accelerate the trends in electronic resources. The argument applies to OSV too as this format has higher technological requirements and is in high demand (Dixon, 2017).

### Acquisition Models

Acquisition models for OSV are complicated and diverse. The acquisition models and/or practices in academic libraries were discussed in many studies (e.g. DeCesare, 2014; Ferguson and Erdmann, 2016; Handman, 2010 and many more). Here is a glimpse.

Table 1: A glance at OSV acquisitions options:

Selection methods	title by title	packages
Selection entities	individual institution (e.g. a university library)	consortia deals (e.g. a higher education consortium in a region)
Selection party	librarians	users
Ownership	purchase perpetual rights	licensing/lease
Acquisition budget implications	one-time payment	ongoing payment
Terms of licensing	one year	multi-years
Hosting	self	publisher; third party
User -use	single user	multi-users to unlimited users
Access	username/password	IP
Copyrights	with Digital Rights Management (DRM); without Public Performing Rights (PPR)	without DRM; with PPR

When choosing one or more OSV acquisitions for libraries, the issues considered include budget, staffing, technical requirements, and special organizational needs, etc. In addition to those elements which also apply to e-books or e-journals (Yi, 2016), there are factors unique to videos such as format migration, closed caption, public performance rights and more. What is listed in the table above is just a glimpse. Librarians need to pay attention to these issues and know our options. Each acquisition model has its pros and cons for individual situations. Each library needs to choose the best fit for its specific institution.

## Usage

There are quite a few articles on general increase of the availability and use of OSV in academic libraries (e.g. Dixon 2017; Enis 2015; and Kaltura 2015, 2016, 2017). Kaltura surveys educators, instructional designers, IT professionals, digital media professionals, and students from around the globe on their video use annually. Year-on-year surveys by Kaltura (2015) show, quantitatively and anecdotally, a steady increase in OSV use in academic settings. They help us gain a broad picture of OSV's impact on education. For example, Kaltura's surveys showed:

Table 2: Examples of use increase in Kaltura surveys:

Videos regularly showed in classroom	<b>In 2014</b> 76% higher education respondents	<b>In 2015</b> 84% higher education respondents
Videos for supplementing course materials	<b>In 2015</b> 72% higher education respondents	<b>In 2016</b> 79% higher education respondents
Videos for remote teaching and learning	<b>In 2016</b> 66% higher education respondents	<b>In 2017</b> 73% higher education respondents

Many of the categories reported by Kaltura correspond to the usage impact elements discussed in several other studies (e.g. Bossenga, et. al. 2014; Cottrell, 2012; and Enis, 2015). Especially noticeable are faculty use of videos as a teaching tool in classroom and online class assignments, providing easy access for internet-generation students.

Most of the articles discussed above are based on surveys. I have found limited literature grounded in the actual usage statistics of OSV. One research article including usage data is the paper by Cleary et. al. (2014). The article was based on two universities' [Queensland University of Technology (QUT) and La Trobe University (La Trobe)] experience with Kanopy's patron-driven-acquisition (PDA) and non-PDA models. They reasoned that a trial/experimental subscription of Kanopy OSV would help them "gain an insight into online video usage, demand and viewing behavior." (Cleary et. al, 2014, p. 3) This information could then help libraries make ongoing OSV collection decisions and justify precious collection funding. Their data indicated several impact factors on usage: increasing discoverability by MARC records, marketing content on campus, and embedding OSV in teaching etc. The authors also noted the length of time of database availability correlated with usage as familiarity with the platform/interface and awareness of the content would have a positive impact on users. This factor is consistent with the findings by Yi (2016) when studying e-book usage. Overall, Cleary et. al.'s study of the QUT

and La Trobe campuses showed that usage justified the PDA of OSV. The cost per title view was lower than other subscription models and at the same time also made large amounts of content available to users for free. In addition, it saved staff labor cost in selection and guaranteed usage for the acquired/paid titles. The findings convinced librarians of both universities to continue their PDA OSV acquisitions.

## METHODS

As noted above, OSV is a relative newcomer to the world of electronic resources. Most library literature about OSV covers general trends. Few articles in the literature are based on database usage data. The QUT and La Trobe article (Cleary et. al., 2014), reviewed above, is based on data nearly five years old. Online videos have come a long way since then, particularly people's awareness and use of OSV in everyday life. YouTube statistics (2017) show that its billion users generate billions of views each day. Kaltura (2017) stated 99% of responding institutions reported instructors incorporating video curriculum regularly. It is now time to look at more recent acquisitions and usage of OSV in academic libraries to see whether some of the observations from earlier studies still hold true and whether any new issues have arisen. A current empirical research study could provide additional insight into how academic libraries are doing now and help us to understand user needs and build quality OSV collections that better support users.

This research is based on the usage data of two OSV databases that the California State University San Marcos (CSUSM) subscribes to. It will focus on the usage of these databases and the relevant issues. CSUSM has a variety of OSV products such as self-streamed titles hosted by campus IT, individually purchased titles hosted on vendor sites, small packages purchased perpetually, a PDA database and several subscriptions, individual titles or packages. Due to data limitations, this study focuses on two subscribed OSV products: Media Education Foundation (MEF) on Kanopy platform and Business and Economics (B&E) collection by Films on Demand (FOD). CSUSM started both subscriptions around the summer of 2014.

This study examines usage data of MEF/Kanopy and B&E/FOD over six academic semesters, namely Fall 2014, Spring 2015, Fall 2015, Spring 2016, Fall 2016 and Spring 2017.

### Data Collection

Usage data from the above period was collected from the Kanopy and FOD sites and broken down by semesters.

### Data Clean-up

This research is focused on the MEF collection via Kanopy platform and FOD's B&E collection only. CSUSM library also subscribes to other videos individually or via package hosted on

Kanopy platform. Therefore, clean-up was needed to remove those titles and their usage as they are not within the scope of this study.

### Data Normalization

As those working in the library statistics field know, data normalization is a critical and necessary step for data manipulation. Counting Online Usage of Networked Electronic Resources (COUNTER) is the industrial standard for library usage statistics. However, as discussed above OSV is the newcomer of library electronic resources. COUNTER usage data is not available for EMF/Kanopy and B&E/FOD during all six semesters under study.

After a closer look at the usage data available on both Kanopy and FOD platforms, two categories of usage data stand out as comparable and informative for the study: first, views (how many times a video has been watched) and second, length of time viewed. The two platforms (Kanopy and FOD) use different terminology and mathematical measurement. For consistency, the paper will use “Views” to count number of times a video has been watched and “Minutes” as the measuring unit for viewing time.

## DATA ANALYSIS AND FINDINGS

### MEF/Kanopy - General Observations

For MEF/Kanopy, during the period under study,

- Both Views and Minutes showed similar usage patterns (see Figure 1).
- In general, both Views and Minutes demonstrated a steady growth in use (see the dotted trend lines on Figure 1).
- Usage (Views and Minutes) has more than doubled during the period under study. For example:
  - In Fall 2016, Views were 1374 times and viewing time were 32990.94 minutes in total, while in Fall 2014 Views were 527 and Minutes were 11742.80. Each category increased 160.72% and 180.94% respectively.
  - In Spring 2017, Views were 1101 and Minutes were 26020.90 while in Spring 2015 Views were 450 and Minutes were 10269. The increase was 144.67% and 153.39% respectively.

Table 3: MEF/Kanopy Usage by Views and Minutes

	Fall 2014	Spring 2015	Fall 2015	Spring 2016	Fall 2016	Spring 2017
Views	527	450	497	1323	1374	1101
Minutes	11742.89	10269.29	10190.78	32838.94	32990.94	26020.91

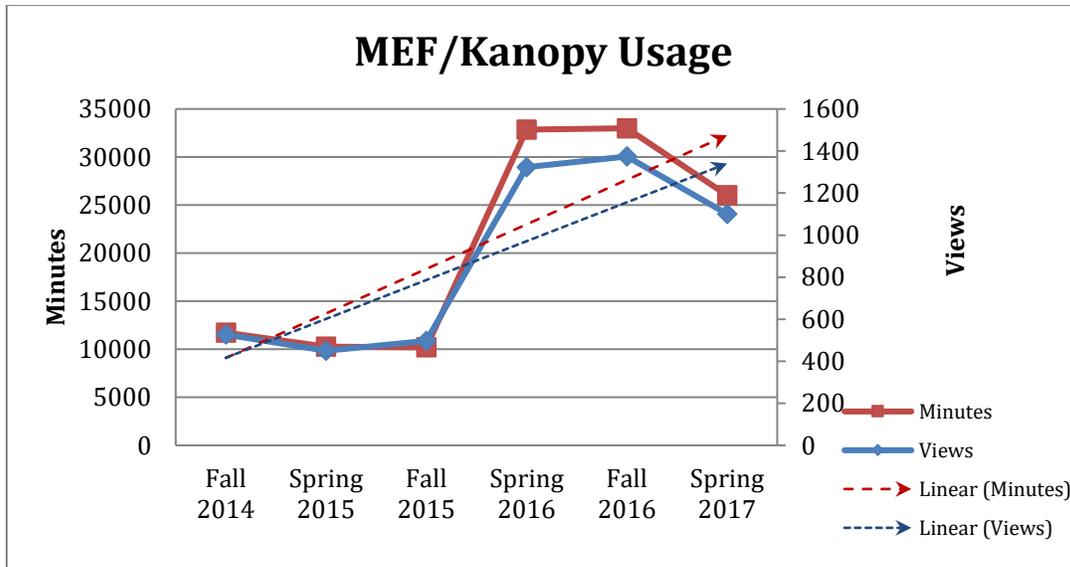


Figure 1: MEF/Kanopy Usage by Views and Minutes

### MEF/Kanopy - Deep Data Analysis

It is quite clear that the upward linear slopes demonstrated an increase over time in use for both the viewing times and the length of viewing in minutes. In addition to the overall steady usage increase, the usage statistics showed a sharp surge in Spring and Fall 2016. In order to understand the surge, a closer examination of the usage at title level was conducted. The detailed information reveals that several “high performer” videos contributed to the surge. For example, the video “Tough Guise 2” had a record of 34 Views and 886.32 Minutes usage in Fall 2014. However, in Fall 2016 the video was used for 271 Views and 7447.23 Minutes. This is an increase of 697.06% in Views and 759.64% in Minutes respectively. As noted previously in the literature (e.g. Yi, 2016), usage could be skewed by high performing titles.

### B&E/Films On Demand – General Observations

Table 4: B&E/Films On Demand Usage by View and Minutes

	Fall 2014	Spring 2015	Fall 2015	Spring 2016	Fall 2016	Spring 2017
Views	636	518	626	531	364	554
Minutes	7110.10	6132.63	6372.98	5097.07	4119.00	3562.55

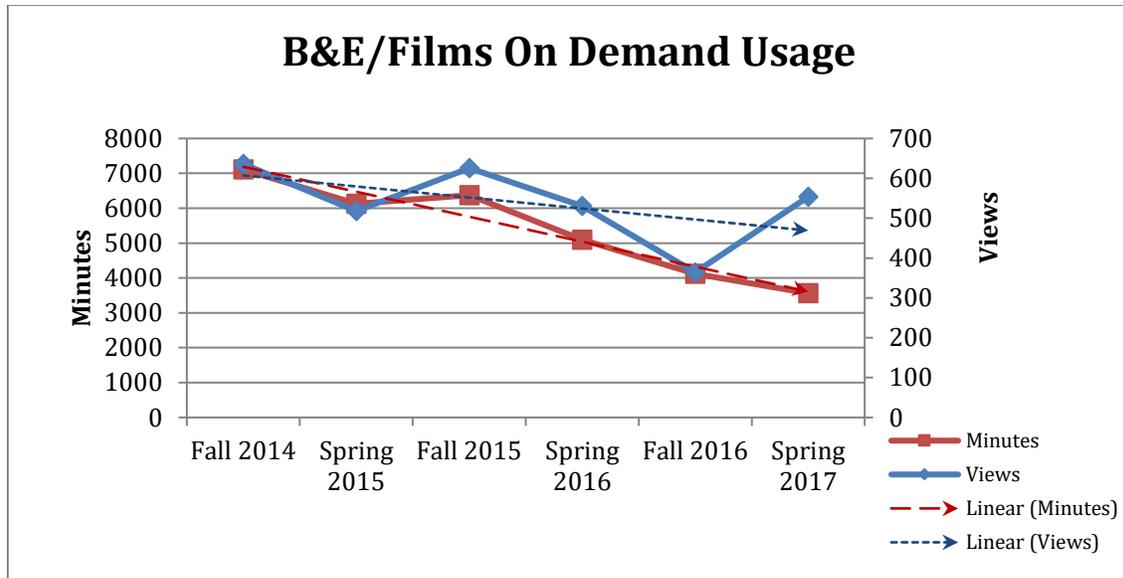


Figure 2: B&E/Films On Demand Usage by View and Minutes

For B&E/Films On Demand, during the period under study, usage patterns are different from those of MEF/Kanopy. Table 4 and Figure 2 reveal:

- Minutes usage showed a steady downward trend.
- View usage trend is less conclusive even if the linear trend line shows a downward slope (see Figure 2 dotted line for Views). Here are the possible explanations for this downward slope: it is mainly due to low numbers in Fall 2016 with a slight impact from the Fall 2014 number. If we look at the numbers in Spring 2015, Fall 2015, Spring 2015 and Spring 2017 (see Table 4), taking out the numbers for Fall 2014 and Fall 2016, the usage would show a steady pattern over time. To further illustrate this point, please see Figure 3 and Figure 4 below for controlled trend lines.

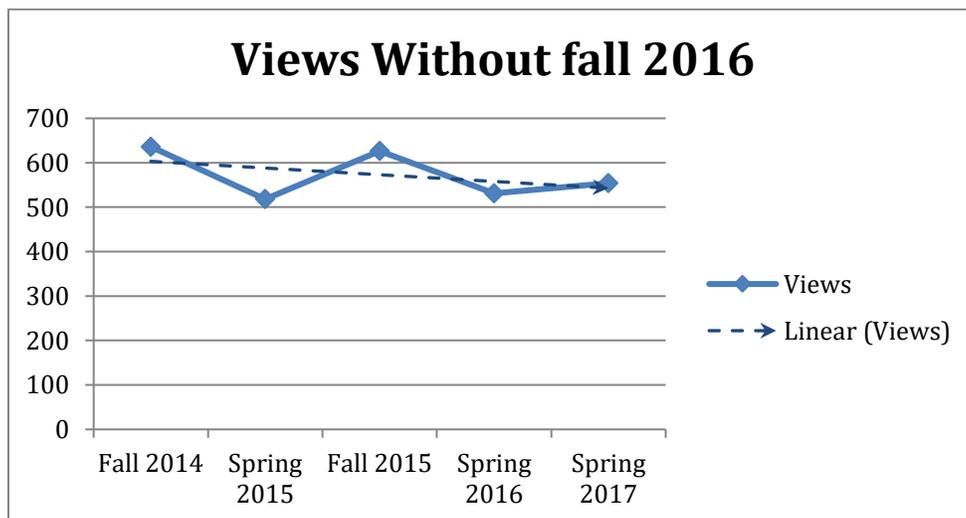


Figure 3 B&E/Films On Demand Views without Fall 2016

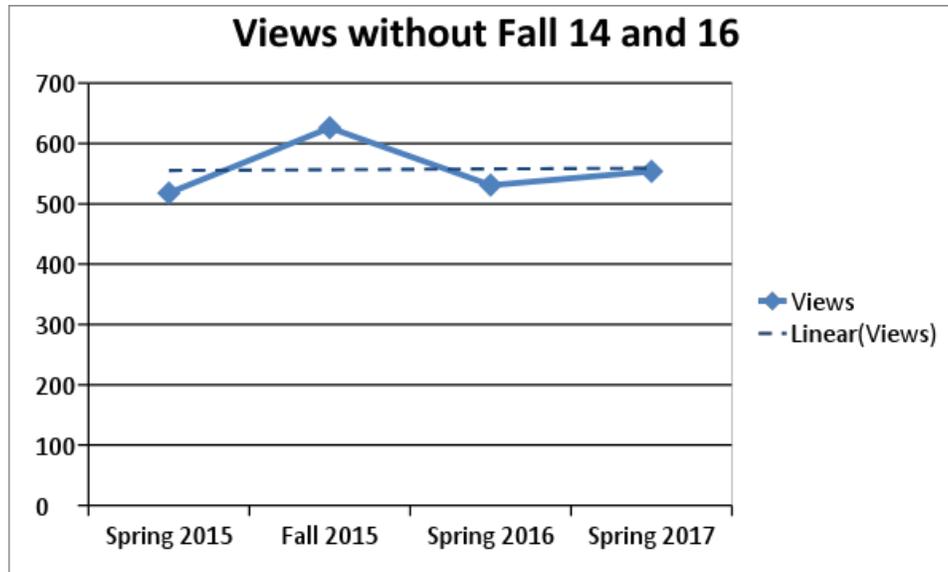


Figure 4: B&E/Films on Demand Views without Fall 2014 and Fall 2016

### **B&E/Films on Demand - Deep Data Analysis**

The observations and findings above lead to some questions: why the Views number in Fall 2016 was lower and what contributed to the steady decrease for Minutes overtime? Quite a few authors have discussed the factors that impact database usage (e.g. Cottrell, 2012; Herlihy and Yi, 2010; Yi and Herlihy, 2007). Among these factors, the ones that stand out the most include curriculum changes, currency of the resources, availability of alternative resources, presence in library catalogs, database/packages content changes, and possible data skewing by higher performance titles etc. A systematic study of each of these factors is beyond the scope of this research. It will necessitate another full-length research study. However, by mining raw usage data and checking the CSUSM Unified Library Management System (ULMS), we could get some insightful statistics and derive valuable information to inform a hypothesis.

### **Alternative resources and library cataloging impact**

By searching for the video “Made in LA” in our ULMS, we found two records (see Figure 5). The first one on the list is from FOD. However, the second one (alternative resource) has a more recent date (2012/c 07 vs. 2014). It is highly likely a user would go to a more recent resource (impact of currency). A search of “Maquilapolis” also revealed two records (see Figure 6). This time the FOD resource is second on the list. Users are more likely to click on the first link and, needless to say, the first one has the more recent date.



Figure 5: ULMS list and Alternative Resource example 1

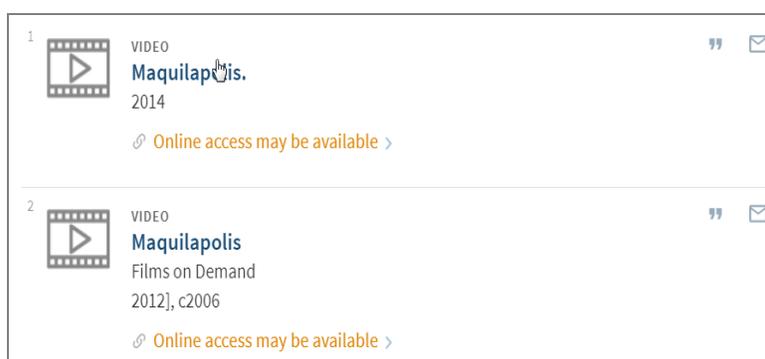


Figure 6: ULMS list and Alternative Resource example 2

### Possible curriculum changes and high performers

A closer examination and comparison of raw data in earlier semesters with later semesters revealed some interesting information.

- Only three of the top ten titles with the highest Minutes stats in Fall 2014 were used in Fall 2016. That is only 30%. The other seven titles were not used at all.
- A quick calculation showed the seven titles that were not-used in Fall 2016 generated 69.52% Views for the top used titles in Fall 2014.
- An examination of the Spring 2017 raw usage data also revealed that the seven titles which were not used in Fall 2016 were not used in 2017, either. This situation (from highest usage generators in an earlier semester to dropping to no-use in later semesters) leads to the assumption that it is highly likely that there was some change in the curriculum.
- Also, the author couldn't help noticing Spring 2017 Views statistics started rising again. Could this be an indication of increase in use in the following semesters? An extended period of study is needed to answer this question.

## CONCLUSION

Based on this study, MEF/Kanopy OSV revealed a steady increase over time in use both by the number of titles viewed and by the number of minutes watched. It demonstrated that OSV is a highly sought-after material in today's teaching and learning environment at CSUSM. Deep data analysis also indicated that high performing videos can skew usage patterns. It makes sense that researchers should take the skewing impact, whether high performing videos or other factors, into consideration when analyzing data.

The usage patterns for B&E/Films On Demand during the period under study are less conclusive. When controlling the possible skewing factors, Views remained relatively constant over the time period under research while Minutes showed a decline trend. However, after probing into raw usage data and other factors, the findings of the study yielded some important insights. Anecdotal evidence indicates that high turnover video titles could be a result of curriculum change. The evidence also indicated that alternative resources and library catalog listings could have impacted use. In order to make definitive conclusions for these observations, further research is needed.

Instead of providing conclusive answers for some of the questions regarding OSV in an academic setting, this study leads to several suggestions for future studies. For example, a study of relevant curriculum is needed to assess the curriculum change impact on OSV use. It would involve mapping of OSV subject content to courses offered; systematically matching class assignments, required course viewing/reading lists, and student group projects to OSV titles; evaluating student FTE (Full Time Equivalent) enrollment fluctuations in related subject fields during the time period under study; comparing overlapping content in various resources and analyzing a longer period of longitudinal studies. These are just some of the factors for consideration in future studies.

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### **About the author**

Hua Yi has been an academic librarian for over twenty years. The majority of her academic library career has been in the area of collection development. In the past decade, she has been concentrating her research on collection assessment with a focus on electronic resource usage. She has published in the areas of collection assessment models, electronic resource usage patterns and the impact of ebooks in academic libraries.