Digital Video Curation: Adding to a User-Centered Understanding

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Abstract. Different concepts of added value and digital video curation are examined from a user-centered approach. Findings contribute toward a user-centered understanding and construct of digital video curation and different functions of added value which can be used as a baseline for future work.

Keywords. Digital Curation, Digital Video, User-centered.

1 Introduction & Background

Curation is the long-practiced means of helping different audiences find, apply, and generate new and useful information. Digital curation is described as a set of interdisciplinary activities that address the need to create, manage, use, and add value to digital assets over time [1-2]. Digital curation is also about users and their "need to be able to find information in coherent, reasonably contextual groupings" [3].

One primary function of digital curation is added value. Digital content curation includes "adding value to a trusted body of digital information for current and future use" [2]. Additionally, curating digital collections can also involve adding value to facilitate application, learning, and understanding of topics and their significance [4-6]. These functions of added value would be relevant or applicable to digital videos and video collections, in that understanding or knowing the significance of the topics being covered (within a video) and how a video can be applied in context could be very useful [1,4-6].

While the concept of digital curation has been developed, defined, and refined over time, focus has remained on the digital object and digital collection. As progress continues in this area, it is also important to understand what digital curation and different functions of added value mean from a user-centered and contextualized (e.g. educational videos) perspective and how such concepts are related.

2 Research Objective

Based on this motivation, the overarching research objective of the current study is to formally examine different constructs of value added function and digital video curation using a user-centered approach and from an educational context.

3　Method

The current study utilized a quantitative methodology to examine factors representative of digital video curation. A web-based survey was used. The factors and variables included in the study emerged from the literature. Three composite factors were tested including users' expressed importance of:

- Value added function for using video(s) in context (USE)
- Value added function for topical learning and topical significance (LRN)
- Video collection curation (CUR)

A total of fourteen statements (i.e. variables) make up these three factors (Table 1). Participants' judgments for these observed variables (Table 1) were based on a scale of 1 (very important) to 5 (not important).

Table 1. Tested factors and the observed variables of each factor.

Value Added Function for Video Use (USE)	
USE1	Knowing how to use the video in the context of goals
USE2	Knowing how the video fits into usage plan
USE3	Knowing of supplemental materials on how to use videos as resources
USE4	Knowing how other teachers have used the video
USE5	Knowing how other teachers have rated the video
Value Added Function for Topical Learning (LRN)	
LRN1	Being able to learn more about the topic being searched
LRN2	Being able to increase knowledge about the subject area
LRN3	Obtaining an understanding about the significance (i.e. importance) of the topic
LRN4	Obtaining an understanding about the significance of a video
Digital Video Collection Curation (CUR)	
CUR1	Having videos that complement each other or can be used together for common goals
CUR2	Having videos that have been thoughtfully collected for a specific topic or subject
CUR3	Having videos that have been thoughtfully organized around a specific purpose
CUR4	Having videos with supplemental materials that are managed and updated over time
CUR5	Having a curated collection

3.1　Analysis

A factor analysis was performed to quantitatively analyze the underlying factors (or unobserved variables) for different added value functions and digital video curation. Factor analysis was followed by correlation tests between supported factors. As such, various preliminary tests were necessary to determine suitability of factor analysis.

3.2　Context and Participants

Participants were from K-12 education, which represents a domain that regularly searches for and uses digital video for applied purposes. Further, educational video collections provide access to digital content that contains added value and has enhanced organization with other interrelated materials. In total, 252 K-12 teachers

completed the survey. When asked how often they search for videos, 18.3% (n=46) participants responded "all the time," 36.5% (n=92) identified as "often," and 33.7% (n=85) stated "sometimes." Only 8.3% (n=21) reported that they "rarely" search, and 2.4% (n=6) "never" searched for video online (whose survey session was then ended).

4   Results

4.1   Suitability of Factor Analysis and Sample Adequacy

All inter-item correlations across all individual variables were statistically significant at $p < 0.01$ (26 out of 26). Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity were both performed as measures of sampling adequacy (MSA). The KMO values of the three factors were all greater than .7, and all Bartlett's Test of Sphericity values were significant at $p = .000$. Results from the anti-image correlation matrices produced diagonal coefficients above $r = .600$, with a majority over $r = .800$. Based on adequacy of the sample and significance of the inner-relationships between observed variables, the suitability for factor analysis was supported, and all observed variables were included in the analysis and interpretation.

4.2   Factor Analysis

In the initial set of (un-rotated) factor loadings, all observed variables across the examined factors (Table 1) loaded sufficiently onto the first extracted factor. Results also showed that USE extracted two factors, with eigenvalues of 2.9 and 1.1, and a 58% and 21% of variance, respectively, unrotated. When rotated, USE1-3 loaded onto the first extracted factor (eigenvalue of 2.3 and 45% of variance), and USE4 and USE5 (eigenvalue of 1.7 and 34% of variance) loaded onto the second. This finding delineated between added value for how to use or apply videos via more formal instruction (or guidance) versus informal or social insights from others. One factor was extracted for both LRN (eigenvalue of 3.0 and 74% of variance) and CUR (eigenvalue of 3.4 and 67% of variance). Factor loadings were all above .7, with the exception of USE3, which was .667 when rotated. All communalities for the individual survey items, across all three factor analyses, were above .6, with a majority over .7.

4.3   Descriptive Results and Reliability Among Factors

After extraction, descriptive statistics of each factor were measured (Table 2). Skewness and kurtosis values demonstrated appropriate distributions. Cronbach's alpha values all measured above 0.8 for the factors, supporting instrument reliability.

Table 2. Descriptive and reliability results.

Factor	N. of items	Mean	SD	Skewness	Kurtosis	Cronbach's α
USE	5	1.833	.593	.656	.731	.822
LRN	4	1.830	.630	.737	.999	.882
CUR	5	1.750	.538	.370	-.096	.874

4.4 Correlation Results between Factors

Correlations between the factors of USE, LRN, and CUR were tested in order to measure the significance of any interrelationships. Considering each of these factors contribute to digital video curation, it was warranted to examine relationships among users' perceptions. Statistically significant correlations were produced for all distinct tests, including USE and LRN at $r(211) = .564$, $p < .01$, USE and CUR at $r(210) = .554$, $p < .01$), and LRN and CUR at $r(210) = .484$, $p < .01$).

5 Implications

The significant results for the different concepts of added value and digital video curation provide implications which are informative for future research and practice. The major implication for future research includes that user-centered definitions are provided for different, yet significantly interrelated, concepts and the overall understanding of digital video curation. Certainly, other components of value added function and digital video curation appear throughout the literature, and others will emerge overtime. In which case, the current study can serve as a methodological framework for constructing and validating other factors for similar purposes.

The practical implication from the study suggests where and how collection developers and curators may start the process of adding value and organizing digital video collections based on understanding of the users' perspective. While the current study is not considered exhaustive, it remains significant nonetheless by demonstrating a baseline of a validated list of features and qualities for digital video curation. Findings confirm the importance of curated resources and value added function in this domain and are novel by contributing to a user-centered understanding of digital video curation.

6 References

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