YouTube across the Disciplines: A Review of the Literature

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Abstract

YouTube has grown to become the largest and most highly visited online video-sharing service, and interest in the educational use of YouTube has become apparent. Paralleling the rise of academic interest in YouTube is the emergence of YouTube scholarship. This article presents the results of a review of 188 peer reviewed journal articles and conference papers with "YouTube" in the title that were published between 2006 and 2009. Four questions were answered through the review of YouTube literature: (1) What is the overall distribution of publication activity for refereed journal articles and conference papers with "YouTube" in the title? (2) How are publications with "YouTube" in the title distributed across academic disciplines? (3) What have scholars written about instructional methodologies involving YouTube in a sample of literature containing "YouTube" in the title? (4) What have scholars reported about the results of studies involving YouTube in a sample of literature containing "YouTube" in the title? An analysis of the publications revealed that the literature emerged from multiple academic disciplines. The sample of literature included 39 articles and papers describing methods for teaching with YouTube. A total of 99 articles and papers containing the results of research studies were identified and categorized. This literature review is particularly relevant to those online educators who are interested in learning what scholars from their own academic disciplines are writing about YouTube. An emphasis is placed on trends in teaching and research discussed in the sampled literature.

Keywords: YouTube, online video, video-sharing, Web 2.0, publications, trends, teaching, research, discipline, content area

Introduction

Video is now a common form of media on the Web. The growth of online video is beneficial for those who teach and learn online, as access to video on a broad spectrum of topics becomes increasingly available. The exact amount of video currently hosted online is not known, but the Blinkx (http://www.blinkx.com) video search website reports having indexed 35 million hours of video.

Video is not only widely available, but also popular among Internet users. A report from Pew Internet & American Life states that 69% of U.S. internet users watch or download video online and 14% have posted videos (Purcell, 2010). Studies of worldwide Internet traffic from Cisco (2010) also suggest rising interest in video, which now accounts for 26.15% of global broadband traffic. Cisco further reports that over one third of the 50 most heavily visited websites are video sites. Internet traffic rankings from Alexa (2010) and comScore (2010) reveal that YouTube is the most highly visited video destination of them all. Since its creation in 2005, YouTube (http://www.youtube.com) has gained meteoric popularity as an online video-sharing website. At the end of its first five years of service, YouTube was receiving more than 2 billion views per day (YouTube, 2010) and users were uploading more than 35 hours of video per minute (Walk, 2010).

Although YouTube was created as a video-sharing service for the everyday user, the potential for educational use has not gone unnoticed. Over time, scores of colleges and universities have established a presence on YouTube by creating their own video-sharing webpages called *YouTube channels*. In March 2009, YouTube announced the launch of YouTube EDU (http://www.youtube.com/edu), which is an organized collection of YouTube channels produced by college and university partners. At the end of its first year, YouTube EDU had grown to include more than 300 colleges and universities and over 65,000 videos of lectures, news, and campus life were freely available for public viewing (Greenberg, 2010). These videos comprise only a portion of the content on YouTube with potential educational value.

The growth of educational video on YouTube runs concurrent with broader trends in educational video viewership, which rose from 22% to 38% between 2007 and 2009 (Purcell, 2010). Those who seek

educational video have numerous places to look for content, including websites created specifically for the purpose of disseminating educational video. It is beyond the scope of this article to delve into a detailed analysis of all of the websites offering academic video content, which has been written about elsewhere (See: Miller, 2009). However, a few examples serve to illuminate this discussion of educational video websites. The adult academic audience may enjoy video websites such as *Academic Earth* (http://academicearth.org), *Big Think* (http://bigthink.com), *Fora.tv* (http://fora.tv), and *TED* (http://www.ted.com). K-12 teachers or children may prefer educational video sites like *TeacherTube* (http://www.teachertube.com) or *WatchKnow* (http://www.watchknow.org). It should be noted that some crossover occurs between educational video websites and YouTube. For example, *Big Think*, *Fora.tv*, *TED Talks*, and *TeacherTube* each maintain YouTube channels in addition to independent educational video websites. *WatchKnow* also pulls content from YouTube and other video websites for embedding and ranking on its main website at http://www.watchknow.org.

The potential of YouTube for online education has been examined previously (Snelson, 2009) . One of the obvious benefits of using YouTube in online education is that it provides online access to vast quantities of free public video on a broad spectrum of topics. It is a simple matter to link to or embed YouTube videos in online course content or discussion forums. Content management is also a benefit. Online educators can establish YouTube channels to collect, organize, host, and distribute video. YouTube videos may be grouped into one or more "Video Playlist Lessons," which are created by collecting videos into a playlist then typing a lesson plan into the playlist description area. Playlist lessons have been created to meet learning objectives across the cognitive, affective, or psychomotor learning domains in real-world online classrooms (Snelson, 2010a). Online educators may also create interactive video games, simulations, or tutorials by linking videos together through the *Annotations* tool on YouTube (Snelson, 2010b).

Concurrent with the growing educational interest in YouTube is the emergence of YouTube scholarship appearing in peer-reviewed journals and conference proceedings. Topics discussed in the literature include, but are not limited to, uncovering the experiences of YouTube users (Lange, 2007), how YouTube is used in politics (Carlson & Strandberg, 2008; Duman & Locher, 2008), use of YouTube videos in the medical field, (Farnan, Paro, Higa, Edelson, & Arora, 2008; Gomes, 2008), methods for harvesting and using data from YouTube (Shah, 2009), and possibilities for teaching with YouTube (Burke & Snyder, 2008; Snelson, 2009; Tamim, Shaikh, & Bethel, 2007).

The question is, however, to what extent has scholarly literature on the topic of YouTube evolved and within which academic disciplines are the publications emerging? Furthermore, does the literature inform educational practice and illuminate strategies for conducting research within the online video-sharing environment? These questions have relevance to scholars and researchers who are interested in exploring YouTube as a teaching tool or focus of study. This topic is particularly relevant to online educators who are interested in learning what scholars from their own academic disciplines are writing about YouTube with respect to instructional methodologies and discipline-specific research.

This article presents the results of a comprehensive review of the literature that was conducted to identify and categorize a sample of academic articles and papers that were clearly identified as having a focus on YouTube by having the word "YouTube" in the title. The literature sample was further restricted to include only journal articles and conference papers, which have undergone academic peer review.

The following questions were answered during this review of peer-reviewed literature with "YouTube" in the title:

1. What is the overall distribution of publication activity for refereed journal articles and conference papers with "YouTube" in the title?

2. How are publications with "YouTube" in the title distributed across academic disciplines?

3. What have scholars written about instructional methodologies involving YouTube in a sample of literature containing "YouTube" in the title?

4. What have scholars reported about the results of studies involving YouTube in a sample of literature containing "YouTube" in the title?

Method

The initial task when conducting this literature review was to identify the parameters that would delimit the boundaries of the literature sample. First, the scope was restricted to peer-reviewed journal articles and conference papers published from the creation of YouTube in 2005 through the 2009 when the literature

review was being conducted. The desired outcome was to conclude the review with a quality literature sample from refereed academic sources. Second, the articles and papers were included only when "YouTube" was in the title, because this was indicative of a central focus on the topic of YouTube. Third, the title search for "YouTube," without any other search terms, kept the search simple and consistent when searching multiple databases. Fourth, the literature was drawn from a broad array of databases to yield a comprehensive collection of scholarly literature on the topic of YouTube.

The next step after defining the parameters of the literature was to identify suitable databases to search. A collection of 256 research databases, indexes, and topic-specific online resources, available through the author's university library, was reviewed to generate a list that (1) offered access to peer-reviewed journal articles or conference papers, (2) included filters to restrict search to peer-reviewed articles, and (3) permitted title searches. A total of 86 databases were identified as viable for the specific search parameters defined for the literature review. The complete list of databases searched for this literature review is available online at https://sites.google.com/site/literaturereview188/databases-searched

The 86 databases were searched three times in 2009 during the months of January, September, and December. Only 62 of the databases yielded usable articles or papers and the remaining 24 databases did not yield any results within the parameters established for the literature review. Strangelove's (2009) YouTube bibliography was also reviewed to identify articles or papers that were not found in the database searches. One of the primary differences between the existing Strangelove bibliography and the present literature review is the scope of content included. Strangelove's bibliography includes a wider spectrum of information related to YouTube including books, articles, blogs, videos, and papers that are not always peer-reviewed, may or may not include "YouTube" in the title, or discuss YouTube as a subset of a larger topic such as the broader field of online video-sharing. These items fell outside of the parameters defined for the present literature review, which was designed to examine only peer-reviewed publications that were clearly identified through the title as having a focus on YouTube. However, some usable articles and papers were found in the Strangelove YouTube bibliography and these items extended the sample beyond those publications obtained through the database searches.

An initial bibliography was created with 299 articles and papers. An online search for each item in the bibliography was conducted to verify that only peer-reviewed literature was included, which reduced the final bibliography to 188 articles and papers. The complete alphabetized bibliography of the final sample of 188 peer-reviewed articles and papers with "YouTube" in the title may be viewed at https://sites.google.com/site/literaturereview188/alphabetized-bibliography

Full-text copies of every article and paper in the bibliography were obtained so that they could be read and categorized by (1) discipline area as defined by the National Center for Education Statistics (2000), (2) instructional methods for teaching with YouTube, and (3) results of YouTube research.

Results

The results are presented to correspond with the order of the research questions. Each question is restated and data from the sample of YouTube literature is provided to answer each question.

Overall Distribution of Publications

The first question was: *What is the overall distribution of publication activity for refereed journal articles and conference papers with "YouTube" in the title?*

The sample of literature included 96 journal articles and 92 conference papers written by 315 authors for a total of 188 publications. The distribution of articles and papers by year from 2006 through 2009 is shown in Figure 1. The frequencies of conference papers are shown in the left column for each year and frequencies of journal articles are shown in the right column for each year. The literature sample contained no conference papers for 2006.

Publication Distribution across the Disciplines

The second question was: *How are publications with "YouTube" in the title distributed across academic disciplines?*

The sample of articles and papers in this literature review revealed that YouTube has been researched and written about in multiple discipline areas. The literature was categorized into subject areas (disciplines) based on the central field of study discussed in the paper. Discipline area designations were based on definitions from the National Center for Education Statistics (NCES) (2000) *Classification of Instructional Programs (CIP 2000)* database. Table 1 contains a list of academic disciplines represented

in the sample of articles and papers together with the corresponding definition from the NCES database. As a point of clarification, note that the *Research (Strategies)* discipline area was used to categorize articles that presented research techniques. Other articles that presented the results of research were categorized by primary discipline area. A categorized bibliography showing how articles and papers in the literature sample were grouped by academic discipline is available at https://sites.google.com/site/literaturereview188/categorized-bibliography.z

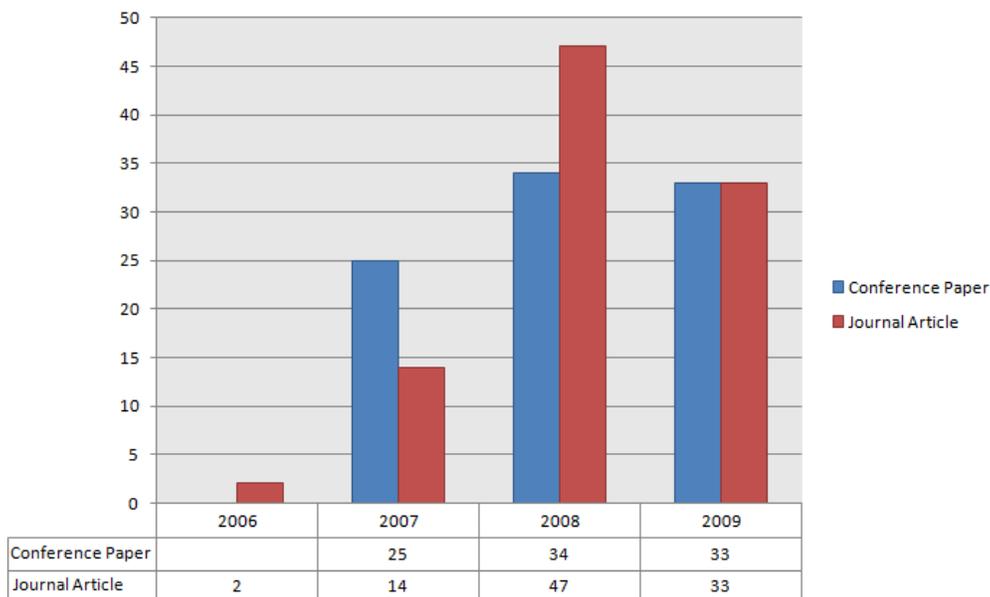|	2006	2007	2008	2009
Conference Paper		25	34	33
Journal Article	2	14	47	33

Figure 1. *Publication Distribution of YouTube Conference Papers and Journal Articles*

Publication activity for each academic discipline is shown in ranked order in Table 2. Total number of articles and papers are shown for each year (last row) and discipline area (last column on the right). The discipline areas of *Communication, Journalism, and Media Studies*, tied for first place along with *Education*, and *Health/Medicine*. The fields of *Political Science* and *Information Technology* were a close second in terms of publication activity.

Instructional Methodologies for YouTube

The third question was: *What have scholars written about instructional methodologies involving YouTube in a sample of literature containing "YouTube" in the title?*

Table 3 contains a rank-ordered list of academic disciplines and frequencies of articles and papers where teaching strategies or educational uses are discussed. A total of 39 (20.7%) of the 188 articles and papers (21 journal articles and 18 conference papers) included discussions of teaching methodologies for YouTube videos. Articles and papers from the field of *Education* took the lead in terms of instructional methodologies for YouTube, although seven other discipline areas included teaching-related articles or paper, most notably *Health/Medical*.

Table 4 contains a rank-ordered list of instructional methodology categories discussed in the 39 articles and papers emphasizing educational applications of YouTube. Links to examples of full-text articles or abstracts are provided if available. The complete collection of 39 articles and papers from the literature sample can be found in the categorized bibliography where each is marked with a "T" for teaching. See https://sites.google.com/site/literaturereview188/categorized-bibliography.

As illustrated in Table 4, the largest category of articles and papers is *Tips for Teaching*, which included publications that presented lists of general techniques or guidelines for using YouTube in the classroom. *Video Production* was the second largest group, covering both student and teacher video production. *Supplementary Content* fell in third place, with articles and papers that discussed both general and discipline-specific strategies for using YouTube videos as supplementary instructional content. These top three categories comprise 82% of the 39 articles and papers discussing educational applications of YouTube.

Table 1. *Academic Disciplines Represented in the Sample of Articles and Papers*

Title	Definition from Classification of Instructional Programs
Agriculture	**Agriculture, Agricultural Operations, and Related Sciences.** Instructional programs that focus on agriculture and related sciences and that prepare individuals to apply specific knowledge, methods, and techniques to the management and performance of agricultural operations.
Business and Marketing	**Business, Management, Marketing, and Related Support Services, Other.** Any instructional program in business, management, marketing and related support services.
Communication, Journalism, and Media Studies	**Communication, Journalism, and Related Programs.** Instructional programs that focus on how messages in various media are produced, used, and interpreted within and across different contexts, channels, and cultures, and that prepare individuals to apply communication knowledge and skills professionally.
Information Technology	**Information Technology.** A program that focuses on the design of technological information systems, including computing systems, as solutions to business and research data and communications support needs. Includes instruction in the principles of computer hardware and software components, algorithms, databases, telecommunications, user tactics, application testing, and human interface design.
Education	**Education, General.** A program that focuses on the general theory and practice of learning and teaching; the basic principles of educational psychology; the art of teaching; the planning and administration of educational activities; school safety and health issues; and the social foundations of education.
Forensics	**Forensic Science and Technology.** A program that focuses on the application of the physical, biomedical, and social sciences to the analysis and evaluation of physical evidence, human testimony and criminal suspects. Includes instruction in forensic medicine, forensic dentistry, anthropology, psychology, pathology, forensic laboratory technology, crime scene analysis, fingerprint technology, document analysis, pattern analysis, examination procedures, applicable law and regulations, and professional standards and ethics.
History	**History, Other.** Any instructional program in history.
Legal	**Legal Studies, General.** A general program that focuses on **law** and legal issues from the perspective of the social sciences and humanities.
Library and Museum	**Library Science, Other.** Any instructional program in library science.
Health/Medical	**Health/Medical Preparatory Programs, Other.** Any instructional program in **health** and medical first-professional preparation.
Performing Arts	**Visual and Performing Arts, General.** A general, undifferentiated program that focuses on the visual and performing arts and that may prepare individuals in any of the visual artistic media or performing disciplines.
Political Science	**Political Science and Government, General.** A general program that focuses on the systematic study of political institutions and behavior. Includes instruction in political philosophy, political theory, comparative government and politics, political parties and interest groups, public opinion, political research methods, studies of the government and politics of specific countries, and studies 0f specific political institutions and processes.
Research (Strategies)	**Educational Assessment, Evaluation, and Research, Other.** Any instructional program in educational evaluation, research and statistics.
Science	**History and Philosophy of Science and Technology.** A program that focuses on the historical evolution of scientific theories and science applications and technologies, as well as the philosophy of science and its historical socio-economic context. Includes instruction in the concepts And methods of philosophical inquiry, historiography of science, and research methods in the history of the scientific and engineering disciplines, including mathematics.

Table 2. *Frequency of Journal Articles and Papers by Academic Discipline: 2006-2009*

Academic Discipline	Journal Articles				Conference Papers				Total
	2006	2007	2008	2009	2006	2007	2008	2009	
Communication, Journalism, and Media Studies	0	2	4	12	0	4	5	3	**30**
Education	0	2	5	6	0	4	7	6	**30**
Health/Medical	1	5	18	3	0	1	0	2	**30**
Political Science	1	1	7	5	0	2	3	10	**29**
Information Technology	0	0	0	0	0	8	11	9	**28**
Library and Museum	0	0	2	1	0	2	4	0	**9**
Legal	0	2	3	0	0	2	1	0	**8**
Business and Marketing	0	1	2	2	0	1	1	0	**7**
Performing Arts	0	1	2	1	0	0	2	0	**6**
Forensics	0	0	1	1	0	0	0	1	**3**
Research (Strategies)	0	0	1	2	0	0	0	0	**3**
Agriculture	0	0	0	0	0	0	0	2	**2**
History	0	0	2	0	0	0	0	0	**2**
Science	0	0	0	0	0	1	0	0	**1**
Total	**2**	**14**	**47**	**33**	**0**	**25**	**34**	**33**	**188**

Table 3. *Frequency of Journal Articles and Papers with Instructional Methodologies: 2006-2009*

Academic Discipline	Journal Articles				Conference Papers				Total
	2006	2007	2008	2009	2006	2007	2008	2009	
Education	0	2	3	6	0	3	5	4	**23**
Health/Medical	0	1	4	1	0	1	0	0	**7**
Library and Museum	0	0	1	0	0	1	1	0	**3**
Performing Arts	0	1	0	0	0	0	1	0	**2**
Agriculture	0	0	0	0	0	0	0	1	**1**
Business and Marketing	0	0	0	0	0	0	1	0	**1**
Legal	0	0	1	0	0	0	0	0	**1**
Research (Strategies)	0	0	1	0	0	0	0	0	**1**
Total	**0**	**4**	**10**	**7**	**0**	**5**	**8**	**5**	**39**

Research Studies about YouTube

The fourth question was: *What have scholars reported about the results of studies involving YouTube in a sample of literature containing "YouTube" in the title?*

More than half of the articles and papers included the results of a research study that involved YouTube in some way (i.e., primarily studies of YouTube technologies, users, or content). Table 5 shows the distribution by discipline area, type of publication, and year. A total of 99 (52.7%) papers (36 journal articles and 63 conference papers) presented the results of research studies involving YouTube. The field of *Information Technology* had the highest frequency of research publications. *Political Science* rose to second place, which may be due in part to increased YouTube usage by political candidates during the United States 2008 presidential elections.

Table 4.*Summary of Instructional Methodologies with Links to Examples from the Literature*

Frequency	Category	Instructional Methodologies
13	Tips for Teaching	Instructional Strategies general techniques for using video clips in the classroom search tips for videos and instructional playlists YouTube videos in nursing and health education
10	Video Production	Student video production including : public service videos to promote public transportation videos used as a source of inspiration for documentaries videos created by students to demonstrate knowledge Teacher-education student projects literature and digital storytelling techniques custom videos to teach about library facilities performance videos for self, peer, and professional critique Teacher video production including videos created by an instructor for an online course teachers learning to create YouTube videos
9	Supplementary Content	The use of YouTube videos to supplement instruction including: podcasts to supplement or replace classroom lectures using YouTube videos to illustrate theories of learning using YouTube videos in physics lectures application of "mosh-pit pedagogy" to illustrate readings YouTube videos included in student presentations YouTube videos as psychiatric case studies use of short video clips for teaching medical procedures YouTube as a source of musical performances Instruction in qualitative research techniques
3	English as a Foreign Language (EFL)	YouTube videos used in the EFL classroom to provide examples of native English speakers as supplementary materials as a resource to help develop authentic writing skills
2	Instructional Design	Instructional design considerations and techniques including: micro-level design with Bloom's affective taxonomy designing videos for visual and information literacy
1	Historical Uses of Video in Education	Representational properties of video that have been used for instruction throughout the history of educational film.
1	Hosting and Distribution	Video clips of ultrasound cases hosted on YouTube for easy online distribution and embedding in web pages

Note. A more detailed version of this table with citations from the bibliography is available at
https://sites.google.com/site/literaturereview188/instructional-methodologies

Space limitations prohibit detailed analysis of the research studies identified in the literature sample. Instead, they were categorized to illustrate trends in the types of YouTube research conducted. This process involved grouping articles and papers according to the categories found in the *Publication Manual of the American Psychological Association, 6th Edition* (American Psychological Association, 2010, pp. 9-11), which are (1) empirical studies, (2) literature reviews, (3) theoretical articles, (4) methodological articles, (5) case studies, and (6) other types of articles. The 188 articles and papers in this literature review were categorized using the definitions for each type of article provided in the APA 6th Edition manual. A total of 89 articles were classified within the literature review, theoretical article, or other article categories. The three categories most closely associated with research studies (empirical studies, methodological articles, case studies,) were used to group the remaining 99 research articles and extract the list of categories shown in Table 6. The empirical studies group was the largest with 62 articles and papers containing reports of research studies with methods, data, and results presented. The second

group, methodological articles, includes 19 articles and papers presenting studies that focus on methodological approaches and methods for research on or about YouTube. The 18 articles and papers in the case studies group presented findings related to real-world use of YouTube within groups, communities, or organizations.

Table 5. *Frequency of Journal Articles and Papers Presenting Results of Research: 2006-2009*

Academic Discipline	Journal Articles				Conference Papers				
	2006	2007	2008	2009	2006	2007	2008	2009	**Total**
Information Technology	0	0	0	0	0	5	10	9	**24**
Political Science	0	0	3	1	0	2	3	8	**17**
Education	0	0	1	2	0	2	4	4	**13**
Health/Medical	0	2	6	2	0	1	0	2	**13**
Communication, Journalism, and Media Studies	0	2	2	4	0	1	1	2	**12**
Library and Museum	0	0	2	0	0	1	3	0	**6**
Business and Marketing	0	0	0	1	0	1	1	0	**3**
Cultural and Gender Studies	0	0	1	1	0	0	1	0	**3**
Research (Strategies)	0	0	1	2	0	0	0	0	**3**
Forensics	0	0	0	1	0	0	0	1	**2**
Agriculture	0	0	0	0	0	0	0	1	**1**
History	0	0	1	0	0	0	0	0	**1**
Performing Arts	0	0	1	0	0	0	0	0	**1**
Total	**0**	**4**	**18**	**14**	**0**	**13**	**23**	**27**	**99**

The list of research categories shown in Table 6 are shown in rank order based on publication count within each of the three groups. Links to examples of full-text articles or abstracts are provided if available. References to research studies conducted within each of the identified discipline areas may be located on the categorized bibliography at https://sites.google.com/site/literaturereview188/categorized-bibliography. Each study is marked with "R" for research.

A thorough analysis of the research is beyond the scope of this article, however, it is worthy to note one prominent trend. Nearly one third of the research studies employed a simple content analysis approach during analysis of YouTube content. In all, there were 30 studies that used a procedure involving search, review, observation, and analysis of YouTube content including video and/or user comments. For example, Ache and Wallace (2008) used this approach when studying the quality of Human Papillomavirus vaccination information found in YouTube videos. Similarly, Poulin (2008) studied YouTube videos to characterize how librarians were represented.

Discussion

The sample of 188 peer-reviewed journal articles and papers provides evidence of an emerging body of scholarly literature focused on the topic of YouTube. Furthermore, this literature spans multiple disciplines, indicating interest among scholars from diverse academic backgrounds. What is not known is how or why scholars become interested in YouTube or what their future goals might be. Some authors had a single publication, while others published multiple articles or papers. Future literature reviews could be conducted to reveal longitudinal trends, or the extent to which YouTube remains a focus of scholarly interest. Survey research might also be used to uncover the reasons underlying interest among scholars who have published or presented on the topic of YouTube.

Interest in YouTube for education has also surfaced in the literature. Some articles and papers presented lists of general teaching techniques, while others described content-specific applications of YouTube in the classroom. Despite the fact that YouTube is an online video-sharing website, very little of the literature emphasize online education specifically. It could be argued that many of the instructional methodologies described in Table 4 would work equally well in face-to-face, hybrid, or online learning environments. For

example, the use of YouTube videos as supplementary content is likely to apply to many content areas and learning environments. Regardless, the absence of studies in online education reveals a potential gap in the research literature where more work is needed.

Table 6. *Research Categories with Links to Examples from the Literature**

Group 1: Empirical Studies (62 Articles and Papers)		
Frequency	Research Topic	Description and Examples
15	Politics	the role or impact of YouTube in politics
9	Information Quality	quality of information in YouTube videos
9	User Behavior and Characteristics	YouTube user behavior and/or characteristics
8	Technical Attributes	quality and characteristics of technologies
5	Teaching and Learning	usage patterns, attitudes, instructional impact
4	People and Places	how people or places are represented
4	Video Messages/Viral Video	studies of the impact of video messages
3	Human Behavior or Conditions	analysis of human behavior or conditions in video
3	Motivation	Motivational factors of YouTube video viewing
1	Test Theoretical Model	YouTube alignment to theoretical model
Group 2: Methodological Articles (19 Articles and Papers)		
Frequency	Research Topic	Description and Examples
9	Video Search and Categorization	methods for locating and categorizing video
4	User Experience	improve or characterize the user experience
2	Research Methodologies	investigations of research strategies for YouTube
2	Servers and Networks	development and testing of system technologies
2	Video Forensics	Strategy for identification of video source
Group 3: Case Studies (18 Articles and Papers)		
Frequency	Research Topic	Description and Examples
6	Classroom Integration	using YouTube in the classroom
3	Marketing and Promotion	outreach and marketing through YouTube
2	Library	library facilities education
2	Teacher Education	teacher education projects
1	Curriculum	instructional materials developed and evaluated
1	Medical Use	using YouTube videos to calm patients
1	Social Discourse	students on YouTube during a faculty strike
1	Student Engagement	YouTube as a student distraction
1	Video Log	video blog (vlog) communication

Note. A more detailed version of this table with citations from the bibliography is available at
https://sites.google.com/site/literaturereview188/research-studies

Given that the content on YouTube can be uploaded by anyone, future work could be devoted toward information literacy and evaluation of YouTube video content. For example, videos containing mistakes might be identified and used to teach important evaluation and critical thinking skills.

One of the instructional methodologies described in the literature was video production. With the continual growth of online education, it might become increasingly important to attain video production skills, yet more research is needed to identify the qualities of good educational video clips. Many educational videos are short productions of less than 15 minutes. Research on optimal methods of chunking content for video clips may be a valuable and timely area of study.

Research that has been conducted on YouTube is somewhat varied and tends to be closely related to problems and issues inherent to the related discipline area. For example, the information technology studies delve into attributes of the YouTube technologies or user data that is harvested from the site. However, several studies from multiple discipline areas investigated attributes of video content, comments about videos, or a combination of both. There were 30 studies that used a basic content-analysis strategy involving a search for videos having the characteristic of interest, review of content (watch videos, read comments), recording of observations, and final analysis where conclusions were drawn. This may be an indication that research methodologies for online video-sharing sites are not yet well defined or have not reached a level of sophistication that would permit more advanced approaches to video content analysis research. Future work developing tools and methodologies for online video analysis, and related data (comments, user demographics, etc.) could lead to more advanced research paradigms and deeper understanding of online video-sharing environments. Some work along these lines can be seen in some of the information technology studies reviewed for this article. However, additional work on educational evaluation of YouTube videos and the tools provided by the video-sharing service (e.g. captioning, interactive video) may be fruitful lines of inquiry.

The invention of YouTube sparked an escalation in online video viewing and production that spread into education and scholarship. In some respects it is remarkable that a single website has gained the level of use and attention that YouTube has enjoyed. The body of YouTube-related literature described in this article indicates scholarly interest in the topic of online video sharing and online video content specific to YouTube. How that interest will evolve is unknown, but there is potential for future research and exploration of educational possibilities for YouTube.

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