

A Comment on Learning: Media Literacy Practices in YouTube

Eric M. Meyers

Abstract—This paper introduces workshop participants to a research project focused on a niche segment of YouTube's vast database, namely informational video that may be used by secondary and post-secondary students to support their academic needs. We pose the questions: how are students engaging with YouTube for school-focused tasks, and what role does media literacy play in this experience? We analyze user-generated comments using computer-mediated discourse analysis to understand the nature of students' learning in this space, particularly focused on evidence of meaning making, concept negotiation, and information sharing, seeking and use practices. Our findings reveal insights about the nature of instructional video as well as the ways it fits with students' academic information practices.

Index Terms—YouTube, media literacy, video, homework, cute!!!, funny, lol.

INTRODUCTION

YouTube is one of the largest publicly accessible databases in the world, providing informative and entertaining videos to viewers across the globe. It is the second only to Facebook among the most-viewed websites in 2011 (Google Analytics, 2011). Everyday, 8 years of video content are uploaded, and users, 70% of whom reside outside the United States, view 3 billion videos (YouTube, 2011). While originally known as a clearinghouse for amateur video of cute cats, pratfalls, and anime mash-ups, YouTube has emerged as a premium content provider, having brokered deals with Disney, Pixar, and Dreamworks, among others, to provide original programming and feature films via the web and mobile devices. In the process of becoming an entertainment powerhouse, YouTube has also, perhaps less noticeably, become an important means of supplementing face-to-face education taking place in schools and classrooms. Although teachers have shown videos in school settings for decades, viewing self-selected videos from YouTube in informal, out-of-school contexts and interacting with both the content and other users is a new phenomena associated with the rise of digital media and new literacy practices. YouTube videos may challenge traditional instructional resources and styles, yet it also reflects a burgeoning medium in which educators are reaching out to their students and soliciting feedback, generating dialogue, and contributing to media literacy practices in an online social context. This domain opens up new possibilities for students to engage with their academic experience, and to interact as students around their learning.

This paper introduces work that colleagues and I are doing in this area and asks: how are students engaging with YouTube for school-focused tasks, and what role does media literacy play in this experience? This research project is interested in a niche segment of YouTube's vast database, namely informational video that may be used by middle and high school students to support their academic needs. In this

project, we are focusing on young peoples as consumers of these videos, but also in their roles as contributors to the conversation around learning content. We have found that a great number of users contribute comments and create dialogue posted on either an uploader's channel or on a specific video. These comments provide unique insights, often expressed in the moment of information need, regarding students' learning and use of video resources. Our project analyzes these comments to understand the nature of this discourse, focusing in particular on evidence of meaning making, concept negotiation, and information sharing, seeking and use practices. This project differs from existing work on YouTube user comments, which has focused on the positive or negative reviews of a video as a numerical ranking of a video's reception or utility (e.g. Lo, 2010; Nakamura, 2006; Siersdorfer et al, 2010) or the helpfulness of the comments in relation to the uploader's development as a videographer (e.g. Snelson, 2008). Our research is focused on end-user learning practices, and asks questions such as: are users more likely to make contentious statements in this environment due to its anonymity? Do viewers offer unsolicited opinions or solutions to other users? Do viewers express confusion or disagreement with video content? How do users express appreciation or describe their contexts of use? The answers to these questions will inform the work of researchers and practitioners concerning how students use social media to supplement their learning activities, as well as how students make sense of their information needs in a world where user-generated content is exploding both in availability and relevance.

YOUTUBE AND MEDIA LITERACY

Literacy researchers have observed that the Internet, Web 2.0 specifically, is changing the nature of literacy practices in significant ways. Furthermore, research in adolescents' information literacy is shifting from print contexts to digital, online environments. In the field of Information Science, this research has focuses primarily on information seeking and access on the Internet (e.g., Chung & Neumann, 2007; Coiro & Dobler, 2007; Dresang, 2005; Henry, 2006; Lawless, Rowlands & Nicholas, 2008). We argue that a more expansive definition of information literacy focuses not just on finding information, but *how* it is used as well as the contexts of use (Buckingham, 2006). This includes the manner in which young people make decisions about and with information: how they select or reject resources based on their understanding of the document's (or video's) relevance to their information need, how they perceive the credibility and authority of the author, and how they make sense of the media and its message individually and socially. In this more expansive view, finding and accessing information is simply the first step: using video effectively further entails understanding the practices that go into framing and creating video as a means of communication and expression. In contrast to traditional print sources, social media such as YouTube enable expanded opportunities for youth agency (Burgess & Green, 2009). However, this expansion of user capabilities comes at the price of authority and credibility of information, an excess of low-quality and irrelevant

material, and the dismantling of traditional roles and responsibilities in learning contexts. Thus, it is critical that decision-making in online environments be an essential component of an overarching focus on information literacy for young people. The discursive elements of online information use (engagement with other users around information artefacts, either synchronously or asynchronously) are also important components of this framework. We situate our work at a key intersection of formal information needs (those proscribed in academic contexts) and informal information practices (information decision making in non-school contexts). In addition to media literacy, several complementary bodies of literature inform our interdisciplinary approach, including information sharing (Talja & Hansen, 2006), help seeking (Karabenick, 1998), and dialogic inquiry (c.f. Wells, 1999; Foster, 2009).

OUR APPROACH

This project has developed over the course of 18 months, and thus far involves: 1) surveying the characteristics of user-generated instructional videos within a variety of academic disciplines; 2) developing a system for analyzing viewer feedback; and 3) applying that system with computer-mediated discourse analysis to understand the relationship among users, academic problems, and video content. Computer-mediated discourse analysis (Herring, 2001) is a technique for coding online conversations. This method has been applied to bulletin board systems, email and chat threads, Second Life transcripts, and other bodies of user generated text in online environments. The unit of analysis selected for this project is the individual user comment, although special attention was paid to dialogue pairs, where they occurred. Thus we see each comment as an opportunity to engage with the uploader (the person who created and made available the video), individual viewers and their comments, or with the broader viewing community.

Our team initially surveyed the growing number of instructional video channels, both professional and amateur productions, which address content consistent with the secondary curriculum standards for the Province of British Columbia. Searching, sifting, and selecting videos to be analyzed in this research involved a variety of methods and search keywords. Ongoing consultation with Integrated Resource Packages provided by British Columbia's Ministry of Education helped in gaining a sense of what topics are being studied by youth at different grade levels, and to find keywords which could be applied to our search process when looking through YouTube itself. From this survey, we selected a sample of user-generated educational videos from ten channels in four core content areas (mathematics, science, language arts, and social studies). From this initial corpus of 819 user comments, we developed a coding scheme to understand the nature of user discourse around these videos. We used several criteria for video selection, particularly: 1) an uploader who functions as an instructor, who is either visually or aurally present in the videos; 2) video content with the potential to enhance a young person's academic needs; 3)

a base level of viewership (at least 200 views in the last 18 months); 4) a base level of user-generated response (at least 50 comments). Our follow-up work, currently in progress, involves applying this coding scheme to a selection of video comments drawn from the Khan Academy corpus of over 2,700 instructional videos. We selected four playlists representing different knowledge domains (Algebra, Astronomy, Biology, and History), and extracted comments from twelve videos per playlist using the same criteria as our code development corpus. A total of 6442 comments comprise this second corpus.

The five-level coding scheme developed and applied to the comment sample covers the following:

- 1) The direction and perceived audience of the user comments (the uploader, another commenter, or any user of the site);
- 2) The nature of the comment and its relationship to the video content;
- 3) Any context of use supplied by the commenter;
- 4) Expressions of satisfaction or dissatisfaction with the video;
- 5) Negotiation of meaning, either with the video content, uploader, or other users.

Each comment can be coded along several of these dimensions. Comments are scraped from the YouTube pages in XML and uploaded to PCAT®, an open-source, cloud-based coding application.

WHAT WE ARE FINDING IN THE YOUTUBE CORPUS

While the coding of the larger corpus is still ongoing, our preliminary work on this project indicates findings in two areas: 1) the nature of user-generated instructional video online; 2) the nature of user comments on those videos. Below I highlight some of the themes emerging in our research. Note that the points below are not an exhaustive analysis of the entire corpus, but our initial impressions based on the early coding work as well as six months of research and video selection in the YouTube corpus broadly. Once coding is complete, we intend to move to a qualitative phase using group interviews with high school students to clarify and triangulate the findings of the content analysis phase.

Our survey work indicates that there are disciplinary distinctions with regard to the availability and use of videos intended for student learning. Specifically, we found that mathematics and science topics comprise the lion's share of user-generated instructional video aimed at the student audience. Math in particular, perhaps based in the procedural nature of mathematics pedagogy, appears to afford broadcast instruction (one to many) via video. There are noticeably fewer YouTube subscribers uploading lectures in the areas of literature, social studies, and language arts, although these channels do exist. Literature is a

content area where we found more student-generated videos than instructor-generated videos; in particular videos related to specific authors and literary works in the form of book trailers, plot summaries, and character analyses. Thus, we see that in some curriculum domains, notably literary studies, video is used primarily as a student-created deliverable, while in others, especially mathematics, video is used as a means of delivering instruction to a student audience. Video as student performance versus video as a lecture or textbook surrogate illustrates two markedly different ways of thinking about the role of students and their agentive capacity in the learning process.

The Khan Academy corpus itself is emblematic of this disparity between math, the sciences, and humanities topics. Only in the last two years has this channel broadened its video selection to include topics in history and finance; meanwhile, there are nearly two thousand videos in the Khan Academy channel on algebra, geometry, calculus, statistics, biology, physics, and chemistry. While there appears to be demand for video in humanities topics, the reason why there is uneven coverage among curriculum domains is less clear. One can speculate as to whether these differences in content density can be attributed to the nature of the curriculum, instructor/uploader differences, or end-user demand, but this initial finding deserves greater study and clarification.

In our analysis of user comments, we were looking for evidence of meaning-making practices, and exchanges between and among users that would expose how making sense of videos was an important aspect of YouTube as a discursive space. We did find evidence that viewers offer solutions and assist other viewers and users in negotiating their understanding of the video content. Dialogue among commenters (directed to other viewers, rather than the uploader exclusively) regarding the content of the video, as well as the broader topic area, was found throughout the corpus. Users also pose questions to the uploader of the video and to other users in the site, using the broadcast platform as a question-answering service on the topic. The discourse in these exchanges most closely resembles help-seeking interactions among peers. Users tend to address the uploader as helpful and wise, as one would correspond with a tutor or mentor, except where the content of the video appears to contradict the viewer's worldview or epistemic frame. In those instances, comments can be spurious and ad hominem. Other users will come to the defense of the uploader when a viewer's comment is perceived as unfair. Exchanges of this nature can take the comment thread off the video topic.

Our initial coding of comments from video in different content domains led us to see distinctions in the nature of user comments along disciplinary lines. Users appeared to contest and debate content in hu-

manities and social science videos with greater frequency than in mathematics or science. We hypothesized that the “factual” nature of math and science content may make these materials “beyond dispute” in the perception of users, or they may be using these videos very differently than students use videos in the social sciences and humanities. To follow-up on this idea, we specifically selected videos for our second corpus that might rebut this theme. Several videos in the biology and astronomy channels were selected for their potentially controversial content. By controversial, we mean content that may be more contestable by users based on religious, cultural or ideological differences, such as human origins or the nature of the cosmos. These videos did indeed produce more user discourse, both serious and spurious. Thus, it was not strictly the content domain that prompts user reactions, or lack thereof, but whether the topic is seen as contestable on a personal basis. The process by which one factors polynomials is not particularly contestable to the majority of users, while the explanatory power of evolutionary theory is a topic that generates personal, and even visceral, reactions.

These findings suggest that the discursive practices of YouTube, even when the content is generated by teachers and used by students, contain both similar and different qualities than traditional classroom discourse. YouTube creates a unique space where students can develop learning content, find multiple representations of academic material, and make comments on the quality, authority, and usefulness of that content with regard to their information needs. Many users, however, do not appear to take full advantage of the affordances of the participatory medium, and much of the dialogue in the user comments does not yet illustrate the rich, meaning-making practices that optimistic scholars forecast.

SCHOLARLY SIGNIFICANCE

YouTube is an enabling technology, potentially expanding the agency of both teachers and learners to participate in new knowledge building practices (Burgess & Green, 2009). Our preliminary findings suggest disciplinary distinctions, both in terms of the content available, and how users interact with and negotiate meaning of video content. We also see the conceptual components of Buckingham’s (2003) new media framework in action, through the comments that show users grappling with issues of representation, language, and audience. YouTube differs from formal learning environments such as the classroom or textbook, and this unique social context invites different interactions from young viewers. In developing a method for revealing the media literacy processes by which youth interact with YouTube information resources, we hope to contribute to an understanding of how literacy plays out in this rapidly growing context. This paper is intended to foster discussion among scholars in education and information studies with the goal of understanding how these online environments function as a natural extension of students’ literacy and information work, and how professionals may mediate interactions with informal

sources of academic content.

ACKNOWLEDGMENTS

The author wishes to acknowledge his colleagues at the University of British Columbia who have contributed to this research, including Marlene Asselin and Teresa Dobson, as well as the UBC Hampton Fund for Humanities and Social Science Research.

REFERENCES

- Buckingham, D. (2003). *Media education: Literacy, learning, and contemporary culture*. Cambridge, UK: Polity.
- Buckingham, D. (2006). *Beyond technology: Children's learning in the age of digital culture*. Cambridge, UK: Polity.
- Burgess, J. & Green, J. (2009). *YouTube: Online video and participatory culture*. Cambridge, UK: Polity.
- Chung, J.S., & Neumann, D. (2007). High school students' information seeking and use for class projects. *Journal of the American Society for Information Science and Technology*, 58(10), 1503-1517.
- Coiro, J., & Dobler, E. (2007). Exploring the online reading comprehension strategies used by sixth-grade skilled readers to search for and locate information on the internet. *Reading Research Quarterly*, 42(2), 214-257.
- Dresang, E.T. (2005). The information seeking behavior of youth in a digital environment. *Library Trends*, 54(2), 178-196.
- Foster, J. (2009). Understanding interaction in information seeking and use as a discourse: A dialogic approach. *Journal of Documentation*, 65(1): 83-105.
- Herring, S. (2001). Computer-mediated discourse. In D. Tannen, D. Schiffrin, and H. Hamilton, (Eds.) *Handbook of discourse analysis* (pp. 612-634). Oxford, UK: Blackwell.
- Lo, A. S., Esser, M. J., & Gordon, K. E. (2010). YouTube: A gauge of public perception and awareness surrounding epilepsy. *Epilepsy & Behavior*, 17(4), 541-545. doi:10.1016/j.yebeh.2010.02.004
- Kinzer, C. K. & Leu, D. J., Jr. (1997). The challenge of change: Exploring literacy and learning in electronic environments. *Language Arts*, 74(2), 126-136.
- Karabenick, S. (1998). *Strategic help seeking: Implications for learning and teaching*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Lange, P. (2007). Commenting on comments: Investigating responses to antagonism on YouTube. Paper presented at the Society for Applied Anthropology Conference, Tampa, Florida, March 31, 2007. Retrieved from <http://anthropology.usf.edu/cma/Lange-SfAA-Paper-2007.pdf>
- Lankshear, C., & Knobel, M. (2006). *New literacies: Everyday practices and classroom learning* (2nd ed.). Philadelphia: Open University Press.
- Leu, D.J., Kinzer, C.K., Coiro, J., & Cammack, D. (2004). Toward a theory of new literacies emerging from the internet and other information and communication technologies. In R. B. Ruddell & N. Unrau (Eds.), *Theoretical models and processes of reading* (5th ed.) (pp. 1568-1611). Newark, DE: International Reading Association.
- Nakamura, S., Shimizu, M., & Tanaka, K. (2008). Can social annotation support users in evaluating the trustworthiness of video clips? *Proceeding of the 2nd ACM workshop on Information credibility on the web* (pp. 59-62). Napa Valley, California, USA: ACM. Doi:10.1145/1458527.1458542
- Rowlands, I., & Nicholas, D. (2008). *Information behaviour of the researcher of the future. A CIBER Briefing Paper*. Commissioned by British Library & Joint Information Systems Committee. Centre for Information Behaviour & the Evaluation of Research (CIBER), University College London. Retrieved from <http://www.bl.uk/news/pdf/googlegen.pdf>
- Siersdorfer, S., Chelaru, S., Nejdil, W., & Pedro, J. S. (2010). How useful are your comments? Analyzing and predicting YouTube comments and comment ratings. *Proceedings of the 19th International Conference on World Wide Web* (pp. 891-900). Raleigh, North Carolina, USA: ACM.
- Snelson, C. (2008). YouTube and beyond: Integrating web-based video into online education. In K. McFerrin et al. (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2008* (pp. 732-737). Chesapeake, VA: AACE.

Talja, S., & Hansen, P. (2006) Information sharing. In A. Spink and C. Cole(Eds.), *New directions in human information behavior*. Information Science and Knowledge Management Series, Volume 8, Section 3 (pp.113-134). Dordrecht, Netherlands: Springer.

Wells, G. (1999). *Dialogic inquiry: Toward a sociocultural practice and theory of education*. New York: Cambridge University Press.

Eric M. Meyers is an Assistant Professor at the School of Library, Archival and Information Studies (SLAIS) at the University of British Columbia, where he teaches and conducts research on the information practices of young people in academic and everyday contexts. Eric's research interests lie at the intersection of information science, the learning sciences, and new media studies, with a focus on collaborative information use and meaning making in social situations. His dissertation on information problem solving in the middle school science classroom won the 2012 ALISE/ Eugene Garfield Dissertation Prize. He earned a Bachelor of Arts in History and Master of Science in Information from the University of Michigan, a Master of Arts in Education from Stanford University, and a Doctor of Philosophy in Information Science from the University of Washington.