

Teacher Made Videos: A Comparative Analysis of Two Approaches to the Creation and Use of Self-made Teacher Videos in the Secondary Classroom

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Abstract

The challenges of the 2020 global COVID-19 pandemic have thrust K-12 teachers into the world of online and hybrid learning. As a result, many teachers are looking for new and innovative ways to provide learning opportunities to students through online videos. The popular social media video streaming site YouTube provides a convenient resource for teachers to share video content as well as for researchers to observe teaching. This study provides an exploratory analysis of two differing approaches to creating and using teacher self-made videos in secondary classrooms. The study compares videos that were filmed in class, which document specific problem solving, with those made out of class to deliver direct instruction. Descriptive statistics provide insight into key comparisons of video length, number of views, and identify areas of interest; Distractions, Advertisements, Technology Troubles, Video Issues, and Audio Issues that were all found to influence delivery of instruction through online videos.

Key Words: Teacher Self-made Videos, K-12 Teacher Videos, YouTube, Secondary Education, Online Learning

Introduction

The COVID-19 pandemic has catapulted learning technology into the forefront of education (Bonafini & Lee, 2021; Fackler & Sexton, 2020; Smith & Colton, 2020). Teachers have been compelled through circumstances to adopt technology-based learning approaches that many were reluctant to accept and implement prior to the pandemic (Francom et al., 2021). Teachers are quickly moving to create rich learning opportunities to address the needs of their students and provide support to parents as at-home learning facilitators (Archambault & Borup, 2020). This includes the use of videos in both synchronous and asynchronous settings. Lowenthal and Covey (2021) observe that video is an effective instructional tool that is also well suited for conducting education research. The purpose of this study is to provide an objective review of these teacher-made videos to better understand the varied approaches to both creating videos and how they are used to deliver or support instruction in the K-12 secondary classroom.

Literature Review

Anecdotal observations of instructional videos used in the classroom prior to the pandemic were primarily limited to those produced for educational use by outside organizations. Videos used in the classroom were selected based on their relevance to the topic being taught and sometimes lessons were formed to fit around the video. As more teachers move to online and

hybrid models of learning, it has become more difficult to utilize existing videos to meet the needs of all students. Innovative teachers have turned to creating their own instructional videos to deliver content to their students, which may be attributable to the extensive use of video in teacher preparation programs (Hollingsworth & Clarke, 2017). Lowenthal and Carvey (2021) observed that “despite the increased use of video in teacher education, questions remain about effective ways to use video in online video-based instructional modules” (p.225).

The Challenge of Rapid Transition

The sudden shutdown of schools and the government imposed at-home quarantines which necessitated the abrupt jump to distance learning revealed how unprepared many educators are to provide technology-based learning (An et al., 2021; Francom et al., 2021; Hodges et al., 2020). Despite the prevalence of technology in society and the classroom, many teachers and administrators continue to rely upon traditional models of instruction that are dependent upon location and presence (Smith & Colton, 2020). While online learning can offer many affordances, the transition from theory to practice can present unique challenges in normal times and even more so during a global pandemic (Hodges et al., 2020; Johnson et al., 2019; Tawfik, 2021). An et al. (2021) observed that “many schools and teachers were not well prepared for the sudden move to online teaching due to the pandemic” (para. 2). Using videos can help teachers draw students into the learning environment regardless of their physical location to facilitate learning (Di Paolo et al., 2020).

The use of videos in the K-12 classroom has been a common practice for decades (Aranya, 2020). Today more teachers are leaving textbooks behind in favor of digital resources that include high quality videos (Blomgren, 2018). Indeed, many teacher education programs now actively incorporate the use of videos in a variety of ways to prepare teachers for the classroom (De Voto & Thomas, 2020). The shutdown of schools due to the COVID-19 pandemic can be seen as “an unprecedented crisis and differs from other major school emergencies, such as school shootings and bomb threats” (An et al., 2021, para. 2). Hodges et al. (2020) noted that “well-planned online learning experiences are meaningfully different from courses offered online in response to a crisis or disaster” (para. 1).

YouTube: Working in a Familiar Space

YouTube is a global social media website where users share original videos. According to the YouTube website, “millions of people come to YouTube to be informed, inspired, or just plain delighted” (YouTube, n.d.). While YouTube is a popular media platform, Di Paolo et al. (2020) state that “technology alone does not motivate students to learn; however, instructors can use technology purposefully, effectively and efficiently to enhance learning (p.452). Lowenthal and Covey (2021) also identify video as a powerful media format that “can show things in ways that previously were not possible” (p.233). Teaching under what are considered normal conditions can be a complex process (Cuenca & Zaker, 2019). Because of the social restrictions created by the COVID-19 pandemic, both parents and education leaders have increased their demands on teachers to provide and promote effective technology-based learning opportunities

(Bonafini & Lee, 2021). Fackler and Sexton (2020) observe that the current climate creates a “complex nature of teaching in these uncertain times” (p. 11).

Lingering Questions Remain

Questions remain around what constitutes a good video and why teachers choose to use existing videos or make their own videos for their classrooms (Wijnker et al., 2019). More information is needed to help educators understand “details on how video is recorded and selected when developing video-based instructional interventions” (Lowenthal & Cavey, 2021, p.226). Di Paolo et al. (2020) identified four significant areas of consideration as “planning, development, delivery and reflection” in the meaningful use of online videos for distance education (p.459). Circumstances for learning and educational technology are continually changing and evolving, therefore repeated evaluation of ongoing efforts are needed to ensure that students continue to receive the education they both need and deserve.

Methodology

Purpose and Participants

The purpose of this study is to add to the understanding of how teachers are using self-made videos to teach students as a result of the COVID-19 pandemic’s influence on education. Specifically, the study compares publicly available videos on YouTube from two secondary teachers with differing approaches to classroom video creation and use. This study utilizes a nonrandom, purposive sample of teacher self-made videos from two teachers who demonstrate differing approaches to creating and using video-based instruction in the classroom. Both teachers began posting videos regularly on YouTube in August 2020. This study reviews videos posted over the fall semester from August 2020 through December 2020.

Teacher 1 is a secondary math teacher from a rural school district with approximately 2,000 students. Teacher 1’s primary approach to creating videos is through in-class recordings that are uploaded for students to review after class or at home asynchronously. Teacher 1’s first YouTube video was a virtual open house that posted August 19, 2019 and was not part of the study. The next video posted by Teacher 1 was on August 19, 2020, when Teacher 1 began posting videos regularly that corresponded with work done in the classroom.

Teacher 2 is a secondary biology teacher in a district of approximately 5,000 students. Teacher 2’s primary approach to creating videos is through prerecorded lectures that are uploaded for students to view before, during, and after class, or asynchronously for at-home students. Teacher 2’s first YouTube video posted on September 14, 2020, followed by subsequent videos that were reviewed as part to the study.

Materials, Data Collection, and Procedures

This study utilized commercially available internet enabled computers with internet browsers to view online YouTube videos. Data was collected from both teachers on videos that were posted between August 2020 and December 2020. Videos were selected from each teachers YouTube channel by selecting the videos tab and then sorting the videos from oldest to newest.

Videos were watched in the order they were posted. Each video that was posted during the time frame of the study was selected and viewed from start to finish. The video play back speed for most videos was set between 1.5 to 2.0 to facilitate efficient review. Where clarification was needed, the video speed was adjusted to normal. Collected data was stored in a spread sheet and backed up on a portable storage drive. Built in formulas within the spreadsheet software were used to calculate descriptive statistics.

Results

Over the course of the study, both teachers posted videos regularly on YouTube. Teacher 1 posted more frequently, with 152 total videos, than Teacher 2, with 32 total videos. The total length of combined videos for Teacher 1 was 20 hours and 9 minutes. While Teacher 2 recorded and posted a total of 7 hours and 47 minutes. The average video length for Teacher 1 was 7.95 minutes and for teacher two it was 14.49 minutes (see Table 1).

Table 1

	Total Videos	Total Time of Videos	Average Video Length
Teacher 1	152	20 hours 9 minutes	7.95 minutes
Teacher 2	32	7 hours 47 minutes	14.49 minutes

The key difference to the creation of videos between Teacher 1 and Teacher 2 was whether the videos were made in class or out of class. In class videos are videos made with students present, and out of class videos are videos made without students present. Teacher 1 made 82.24% of videos in class and 17.76% of videos out of class. Teacher 2 made 6.25% of videos in class and 93.75% of videos out of class (see Table 2). There were also significant differences between the number of views each teacher received for their videos. Table 2 shows that Teacher 1 received 1,336 total views for an average of 8.78 per video while Teacher 2 received 5,719 total views for an average of 178.71 views per video.

Table 2

	In Class	Out of Class	Total View	Average Views
Teacher 1	82.24%	17.76%	1336	8.78
Teacher 2	6.25%	93.75%	5719	178.71

During the viewing of videos several important areas of interest emerged, specifically Distractions, Advertisements, Technology Troubles, Video Issues, and Audio Issues. Distractions were identified as anything that took away from the lesson or teaching being presented. Advertisements were separate from the video content and part of the YouTube streaming platform. Technology Troubles were any issues associated with technology devices not working correctly on camera. Video Issues were typically glitches in recording that could not be attributed to user error. Similarly, Audio issues were issues with audio feed that could not be attributed to user error. Table 3 shows the percentage of videos for each teacher according to these categories.

Table 3

	Distractions	Advertisements	Technology Troubles	Video Issues	Audio Issues
Teacher 1	26.32%	0.00%	37.50%	31.58%	36.84%
Teacher 2	21.88%	46.88%	3.13%	31.25%	31.25%

Discussion

An initial overview of the data collected for both teacher's reveals a large difference between the total number of videos posted by each. Teacher 1 posted nearly five times more videos than Teacher 2. This is explained through data collected from the videos and provides insight into why each teacher may have chosen their particular approach to creating videos. Teacher 1 created and posted videos for at least two classes and possibly a third. Because the videos were posted to YouTube and then linked to assignments in Google Classroom, it is not readily clear which videos went with which classes however, it is clear that Teacher 1 created videos for a Fundamentals of Math and a Geometry class. Teacher 2 created videos for a high school biology class, and as observed in the videos often recorded during the teacher conference period. Having one lesson to prepare is quite different than having two lessons to prepare which may explain why Teacher 2 chose to create videos prior to class and Teacher 1 out of necessity and a lack of time created videos in class. This may also help to explain why Teacher 1's videos were on average only about half as long as Teacher 2's videos. Whereas Teacher 1 focused on delivering direct examples of how to work problems, Teacher 2 used the video for direct instruction.

Considering the circumstances of each teacher also helps to explain the percentages of videos that were made in class vs out of class. Noticeably, Teacher 1's out of class videos were made while the teacher self-reported to be under personal quarantine or while the school was physically closed, and students participated in at-home remote learning. No clear explanation emerges for why Teacher 2 chose to create some videos in class with students present, though it should be noted that some of the out of class videos were made from home while the school was also closed, and students were switched to remote learning. Notably both schools, from different school districts, experienced physical closures and forced distance learning due to the COVID-19 pandemic during the study period.

When looking at the average number of views per video there is a dramatic difference between Teacher 1 and Teacher 2. Teacher 2 had nearly twenty times more average views than Teacher 1. This perhaps due to the way the videos were used in class, however without access to specific viewer data it cannot be clearly stated why Teacher 2 had so many more average views than Teacher 1. However, it is reasonable to conclude that their approaches to using the videos contributed to more views for Teacher 2. Teacher 2 used the videos as lectures for students, and also included comments to non-students, which may be partly why the general nature of the informational videos may have attracted a larger audience. Teacher 1, who used the videos to document working specific problems in class may have received fewer views because of the specific nature of the content as well as the redundancy for students that had already seen the problems worked in class.

The information gathered in Table 3 provides perhaps the greatest insight into a comparison of the two approaches to classroom video creation. Distractions ranged from classroom announcements during both teacher videos, to off task students, and the teacher engaging in sidebar conversations. Noticeably, the percentage of videos with distractions was closely similar with both teachers. Teacher 1 had no advertisements before, after, or during the posted videos so it came as somewhat of a surprise when almost half of Teacher 2's videos had at least one and often multiple advertisements associated with them. Further review revealed that Teacher 1's account was marked by YouTube as child related so comments were disabled and a link for YouTube kids was at the bottom of the page. Teacher 2's account was not marked for children, so the content was not limited. The presence of advertisements on required videos creates ethical questions and an opportunity for further research and discussion. Technology troubles were observed as both teachers struggled with their own issues. The increased number of Technology Troubles experienced by Teacher 1 is partially attributed to the fact that the videos were created during live class sessions and presented little opportunity for error. A simple glitch for Teacher 1 affected both the recordings and the real-time student instruction. Recording outside of class time may explain why Teacher 2 had significantly fewer Technology Troubles. Quality of the recording equipment became a factor for both teachers, as both experienced a similar percentage of issues. Video issues for Teacher 1 were related to incorrect orientation, failure to stop and start when intended, and video skips that created gaps in instruction. Video Issues for Teacher 2 were related to the quality of the camera and the lighting. Teacher 2 often lectured in front of a smartboard that created back lighting and shadows as well as issues of keeping the content on the smartboard in frame and clearly visible to students. Audio Issues for Teacher 1 were related to the difficulty of recording all of the audio in a classroom with a single microphone. Videos posted by Teacher 1 were filled with one sided conversations because most of the student's comments and questions could not be understood. This finding seems to support Ferdig and Kosko (2020) observation that the physical proximity to the camera can provide an advantage to those who are closer and a disadvantage to those who are further away. Audio Issues for Teacher 2 were attributed to movement by the teacher while lecturing as the audio would fade in and out as the teacher faced the board and then turned to face the camera.

Considerations for the Future and Conclusions

Understanding how these videos are created and used in a way that is both efficient for the teacher and effective for the student is critical. Additional research has concluded that teacher made videos may offer help in “understanding the complexity of classroom teaching but also builds spaces for reflective thinking and learning through practice” (Wetzel et al., 2017, p.535). As required changes begin to ease, it will fall more to education leaders to set a tone for the continued use of tools deemed essential during the pandemic (De Voto & Thomas, 2020). Farmer and West (2019) conclude that “as new online programs emerge and existing programs continue to develop, policies and practices at an organizational level should be established only after careful consideration of their impact on teachers” (p.116). The COVID-19 pandemic has forced the rapid creation of technology-based learning content. Helping teachers understand the pros and cons of various approaches to media creation will help them make more informed decisions about how to best serve their students. “Teacher educators must find real-world

opportunities to develop technology-based instructional experiences for teachers to develop technology competencies” (Smith & Colton, 2020, p.454).

This study has sought to provide both current and future teachers with a better understanding of issues associated with two approaches to creating videos for classroom use. Teachers who create videos for classroom use must decide when and how they will create the video and how the video will be used to support learning. The shutdown and subsequent measured reopening of schools has forced teachers to consider new ways of educating students. As more teachers turn to creating their own video content consideration is naturally given to how these videos will be made and what purpose the videos will serve in the classroom. Lowenthal and Cavey (2021) observed that “as it becomes easier and easier to create, edit, and share video, educators, instructional designers and curriculum developers, and researchers will continue to experiment with ways to intentionally use video to improve teaching and learning” (p.233). Recording videos in a live classroom setting provides relevant examples for students to draw upon as they recall the experience. However live classroom recordings are also subject to disturbances and distractions that teachers may not have time to edit out. Recordings that are made ahead of time offer teachers a more thought-out opportunity to deliver direct teaching, yet it can be time consuming to prepare, create, and then post a video. Videos made prior to class however do offer greater flexibility when considering how they will be used. Teacher made videos offer more specific instruction to students from a relevant and reliable resource. One question that remains is whether technology practices that were implemented due to the extreme circumstances of the global pandemic will continue as part of the new normal or fade away into old habits (Tawfik, 2021).

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