



Does Time Matter? Identifying Levels of Community College Student Engagement Based on Length of Instructor-Created Videos in Online Classes

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ABSTRACT

With the rising popularity of online classes in higher education, keeping students engaged and developing effective methods of delivering content has become more challenging. One of the most used teaching and learning tools in online education is instructor-created videos. Various studies show that the majority of students favorably view the integration of instructor-created video content in online courses. Speculation continues to remain about how to effectively design video lessons to maximize their efficiency and increase the level of student engagement and overall academic performance. The current study examines students' perceptions of instructor-created videos, with an emphasis on the preferred length of the videos. Google survey forms were created and distributed among students who are enrolled in Behavioral Science courses. The survey was completed by a diverse group of 159 online students. Participants were asked to identify academic engagement in their own words and share their personal experience with online classes, as well as answer more specific questions such as if instructor-created videos were used in the course, how long they were, and if the length of the videos determined whether students watched them or not. Findings indicated that while students prefer shorter videos, they would watch longer video lectures as long as they were required for the grade. The majority of responders found the use of instructor-created videos in the course helpful. These findings will allow researchers to offer the faculty a recommendation for the future effective use of instructor-created videos in online courses.

INTRODUCTION

The evidence of the increasing popularity of online classes in higher education is not new. Between Fall 2002 and Fall 2010, the number of students taking at least one online course grew from 1.6 to 6.1 million (Allen, Seaman, 2011). More recent statistics demonstrate that demand for distance learning is still increasing (The National Center for Education Statistics, 2019). With the advancement in technology, online education gives students the luxury of convenience and flexibility that is not always achievable in a traditional classroom, especially for those who have to balance studies and other commitments, such as family and work.

Despite its undeniable advantages, the lack of live communication between the instructor and a student can have a potential impact on students' academic engagement and, as a result, their achievement. Integrating instructor-created videos into the course is one of the most widely accepted ways to improve online learners' learning experiences and increase overall academic

engagement in online courses (Ou et al., 2019; Kuznekoff, 2020). Various research has been conducted to investigate different factors that affect the quality of the instructor-created videos used in online courses and help maximize their efficiency. This current research investigates a community college students' perceptions of instructor-created videos in the online classroom, with a focus on practical factors that influence video integration, such as the time required to engage with online videos, i.e., the length of the videos (Valenti et al., 2019).

This study's objective was to answer the following question: Does the length of the videos determine whether or not students watch them in full? Based on existing research, it was hypothesized that students would prefer shorter videos rather than longer lecture-based videos.

LITERATURE REVIEW

The National Center of Education Statistics reports that, in fall 2019, there were 7,313,623 students enrolled in any distance education courses at degree-granting postsecondary institutions. Of those, 3,863,498 students took at least one, but not all, online courses, while 3,450,125 students were enrolled in exclusively distance education courses (U.S. Department of Education, 2020). With a growing demand for online classes, instructor-created videos remain one of the most widely used ways to deliver content to students. Unlike "how to" or tutorial videos, instructor-created video lectures typically focus on explaining concepts or ideas and usually serve as a supplement to the main course readings (Kuznekoff, 2020). The overall perception of instructor-generated videos among students is positive. In a small exploratory study, Rose (2009) discovered that almost 100% of surveyed online students said these videos helped them feel like they knew their instructor better. Survey results among face-to-face students were similar (Rose, 2009). While the use of instructor-recorded video lectures has been considered an irreplaceable teaching and learning tool in online education, there is still a lot of speculation in research about its effectiveness and how videos affect overall student engagement. Our research will specifically focus on the length of instructor-made videos.

Literature shows the main disadvantage of instructor-created video-lectures is the length of the videos. Standard instructor-recorded online lectures are usually 40 minutes or longer (Pan et al., 2012). Guo, Kim, and Rubin (2014) studied student's engagement with Massive Open Online Courses (MOOC) from providers such as Coursera, edX and Udacity by measuring how long student are watching the video and if the actually finish it and attempt to answer post-video assessments and quizzes. Guo, Kim, and Rubin (2014) used two proxies to measure students' engagement: engagement time and post-video problem-solving attempt. Although engagement time is a standard metric used to measure the overall engagement, it is still not an ideal way since it does not give an opportunity to observe and question students in order to make sure they are actively watching the video and aren't just playing it in the background (Guo et al, 2014). After analyzing 6.9 million video watching sessions Guo, Kim, and Rubin (2014) came to conclusion that students usually don't watch the full video. Their data shows that "students often make it less than halfway through videos longer than 9 minutes" and that "median engagement time (i.e., how long students watch the video) is at most 6 minutes, regardless of total video length" (Guo et al, 2014). This study also shows that less students do assessment problems that follow longer videos (Guo et al., 2014).

Even though MOOC classes are not equivalent to traditional learning, some studies show that college students' viewing behaviors and their opinions about the ideal length of the instructor-created videos are similar. In his research, Kuznekoff (2020) analyzed 1,630 views of 33 videos that were used in two online college classes—Advanced Interpersonal Communication and an Introduction to Health Communication. All instructor-created videos were uploaded on *YouTube*, thus allowing the instructor to have access to viewing statistics for each video, such as total watch time, average view duration, and total number of views (Kuznekoff, 2020). Collected data indicated that the median video length of all 33 videos was 6:09, while the median view time was 4:07. The average length of the videos was 10:42, and the average view was 5:18 (Kuznekoff, 2020). Kuznekoff states that "the average student viewed less than 60% of the length of each video used in their actual online classes (2020)."

Some literature offers practical recommendations that help design effective instructor-created video content. In earlier research, Fiorella and Mayer (2018) suggested that one of the techniques that seem to have a positive impact on learning outcomes with instructional videos is so-called segmenting, which means breaking the videos into multiple short parts and allowing students to control the pace of the continuous multimedia. As stated above, most lecture-based instructional videos are 40 minutes or longer (Pan et al., 2012). Continuous videos can create essential overload, which means that students might not have sufficient time to process the information while it continues to be presented (Mayer, Pilegard, 2014; Fiorella, Mayer, 2018). Litton (2021) confirms this hypothesis by stating that watching longer than 15 minutes videos can be counterproductive, assuming that students will be less likely to fully watch them. If the material is complex, fast-paced, or unfamiliar to the learner, they might not have the knowledge to know when to pause the video manually (Fiorella, Meyer, 2018). Therefore, according to Fiorella and Mayer, breaking up the video into pre-determined, meaningful segments will be a helpful solution that will provide students with the necessary time to process each part without having to determine where exactly to pause the lecture (2018). Although this study is somewhat limited and does not measure long-term and/or meaningful learning outcomes (Fiorella and Mayer, 2018), it still provides useful advice on how to make better use of instructor-created video lectures.

While most research focuses on longer lecture-type instructor-created videos, some studies suggest that short videos for weekly announcements and assignment feedback can also be an effective technique in higher education online courses. Bialowas and Steimel's (2019) research focused specifically on short (approximately 3 minutes) and non-lecture format videos that instructors can use to increase the teachers' immediacy and presence and, as a result, boost students' engagement in online courses. Short video announcements and video feedback on announcements were incorporated into two undergraduate online communication courses: Mass Media and Society and Communication Theory. Following the completion of the semester-long workshop surveys were completed (35 completed in the Mass Media and Society course and 26 completed in the Communication and Theory course), and the students' attitudes and preferences for course announcements and feedback videos were analyzed (Bialowas, Steimel, 2019). The majority of students preferred shorter video lengths: 27% preferred between 3 and 3 1/2 minutes, 27% preferred between 2 1/2 and 3 minutes, and the remaining responders preferred even shorter time (Bialowas, Steimel, 2019). The take-away from Bialowas and Steimel's (2019) study is that short (roughly 3 minute) recaps of main themes and assignments

can help enhance instructors' social presence and immediacy in an online course setting, thus increasing overall student engagement.

While most researchers agree that the overall majority of students favor shorter instructor-made videos, there is evidence in the literature that different perspectives can be offered when determining student engagement with online videos. Hildebrand and Ahn (2018) studied how students' viewing behaviors in a sophomore, online Mechanics of Materials course affected their engagement and grades. They took a different approach and created two types of videos: lectures that taught the main concepts of course material; and examples that provided instructions on how to solve problems similar to those shown in homework or on tests (Hildebrand, Ahn, 2018). The 18 students who participated in the study were given the choice to watch 36 lecture videos and 57 example recordings that ranged between 2 and 20 minutes in length (Hildebrand, Ahn, 2018). Hildebrand and Ahn (2018) analyzed the engagement of each video and the total number of views of each recording. An experiment showed that engagement levels were steadily high for lecture videos and slightly decreased for example videos; the total number of views showed a steady increase for both types of videos (Hildebrand, Ahn, 2018). Hildebrand and Ahn (2018) say that an increase in engagement with lecture videos "could be due to the information density of the videos themselves... and students saw continual value whether they were 3- or 20-min long." The suggestion that "students often use examples to solve a step in a problem, not the entire problem," explains why shorter example videos have a lower engagement level among students (Hildebrand, Ahn, 2018).

The conclusion that can be drawn from multiple studies is that while an overall number of students prefer shorter instructor-created videos, it is also important to remember that the content of the videos is just as important as their effective length. It is safe to say that students will be more willing to watch longer lecture-type instructor-created videos as long as they see value and importance in them.

While compiling data from various academic studies, we discovered that there is little to no information about students' opinions and preferences regarding instructor-created videos in online community college courses. This is a gap we intend to fill with our research.

METHODOLOGY

To investigate students' perceptions of instructor-created videos, online Google survey forms were created and distributed to students enrolled in online behavioral science courses (BEH). A mixed-method approach was taken: the survey combined both qualitative and quantitative questioning styles for collecting data. The main goal of the survey was to examine students' perceptions and opinions about instructor-created videos and gain insight into their personal experiences with online classes. The researchers did not have control over the use or implementation of instructor-created videos in the courses that were surveyed. The online Google survey form consisted of 13 close-ended questions, 4 open-ended questions, and 18 questions that were measured on a 5-point Likert scale.

In November, after obtaining IRB approval, a letter explaining the purpose of the research was sent via email to faculty teaching behavioral science courses. The behavioral science courses were targeted for this research as they are a part of every major at the Community College, thus it allowed researchers to achieve the necessary diversity and not be limited. Behavioral science

course professors were asked for assistance with distributing the survey link among students who were enrolled in the online BEH courses in both the Fall and Winter 2021 semesters. Additionally, the link to the survey forms were shared with participants through discussion posts on Blackboard and students' course group chats.

Of the 818 currently enrolled BEH students, 24% started the survey and researchers used the 19% of completed surveys for this study. The majority of respondents were under 25 years old; most students are the first in their immediate family to attend college. The survey was administered anonymously and voluntary; names and identifying information were not collected. It was brought to the participants' attention that they would receive no direct benefits from participating in this research study. The completion of the Google survey took approximately 10-15 minutes, but participants could exit the survey at any time without any penalty.

After completion, responses were sent to a link in the Google Docs database, where the data was stored in a password protected electronic format. The data was later exported and converted into PDF documents and Excel spreadsheets. Researchers were able to extract summaries of all responses as well as each individual response. The data was organized into graphs, tables, and pie charts to allow researchers to effectively analyze and draw conclusions from it.

RESULTS

Mixed method survey data was analyzed to see if instructor-created videos influenced students' viewing habits and overall engagement during the Fall and Winter 2021 semesters. The survey was completed by 159 students from various behavioral science courses: sociology, psychology, education, humanities, criminal justice, and anthropology. Some questions had lower response rates than others, but they are included in the analysis, nevertheless.

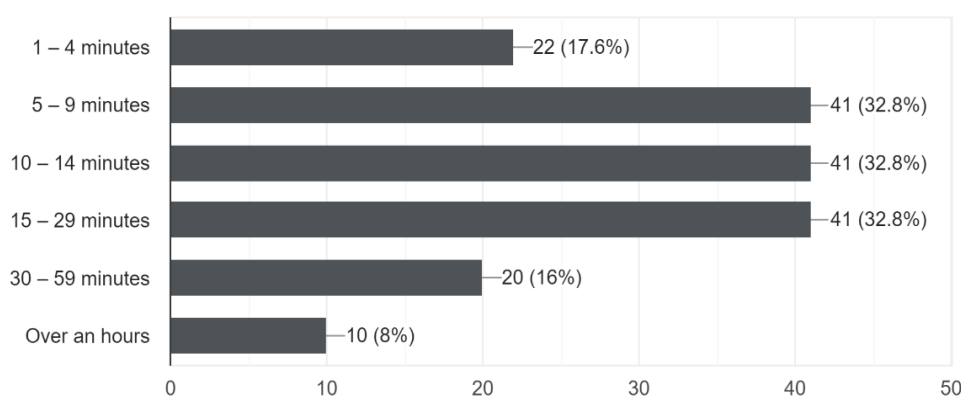
Most responders had taken online classes, with 57.5% (91 students) completing the survey for asynchronous classes and 39.2% (62 students) completing it for synchronous classes. Three participants took hybrid classes. Three responders did not meet the study criteria, as they took in-person classes. One respondent did not indicate the class they were completing the survey for.

The present study focused on the use of instructor-created videos and the length of the content shared within these videos. To ensure the validity of the research, one of the initial questions was whether instructor-created videos were used in the current course the participant was enrolled in. More than 76% of the students stated that video content was used in the course they completed the survey for. When asked how often videos were posted, 79% out of 128 students who completed this question stated that multimedia content was posted weekly. Watching instructor-created videos was not always required for credit or grade. Of the responders, 45% indicated that videos were mandatory to watch in order to get a grade, while 37% said that watching videos was optional. However, the majority of participants, or 86% of respondents answered positively when asked if watching the videos was beneficial for completing particular assignments and if it was helpful in general during the duration of the course.

Comments from the open-ended question that asked students to explain why or why not they found videos helpful suggest that a majority of participants saw the value in the use of instructor-created videos. Out of 97 respondents, 7% admitted that they did not watch videos or that they did not consider them beneficial. Similar trends were shown when students' viewing habits were measured on the Likert scale. When asked to describe on the Likert scale how well the statement "reviewing instructor created videos that are required" applies to them, 77% of participants indicated that they agree or strongly agree with it. The statement "reviewing the instructor-created videos that are recommended but not required" received a similar number of positive responses, with 65% of students agreeing or strongly agreeing with it.

In order to see if there was a correlation between the length of the instructor-created videos and viewing habits, students were asked to indicate how long the assigned and recommended videos were. Survey results suggest that the majority of instructor-created videos were between five and twenty-five minutes long. This question was answered by 125 participants. Of these, 32% of students said the videos were between 5 and 9 minutes long, 32% said they were between 9 and 14 minutes long, and 32% of participants said they were between 15 and 29 minutes long (See chart A).

Chart A



While the survey did not specifically ask if participants finished all the assigned and recommended videos, students were asked if the length of the videos determined whether they watched them in full. Forty-five percent of responders indicated that the length did not matter; 31% admitted that the length did matter; and the remaining 22% of participants said that only sometimes the length of the video made a difference.

The findings of this study also indicated that a large number of students viewed the use of the instructor-created videos as one of the aspects of overall academic engagement. Students' feedback about parts of the class that were most engaging during the duration of the course exemplifies this finding. For example, one student wrote: "Watching the videos and applying them to my career as a paraprofessional." Similarly, another student stated: "The videos shared by the professor allowed me to understand the kindergarten classroom and the learning style of children, which is very effective for me to understand the way of early childhood education."

DISCUSSION AND RECOMMENDATIONS

As the demand for online classes grows, so do faculty concerns about the effectiveness of remote learning (Kuznekoff, 2020). Teaching online synchronous or asynchronous courses can be challenging and failing to deliver the educational content effectively can impact student engagement and, as a result, their academic achievement. The purpose of this study was to evaluate one community college students' opinions about the use of instructor-created videos in both types of online classes. Furthermore, the researchers' goal was to supplement previous research with an analysis of community college students' viewing habits. Students' feedback will help researchers evaluate which length of the instructor-created and assigned videos is ideal to keep students engaged throughout the semester.

Based on the existing research, it was hypothesized that the majority of students would prefer shorter videos because students are more likely to watch them fully without fast-forwarding or getting distracted (Litton, 2021; Guo et al., 2014; Kuznekoff, 2020).

The analysis of the current survey results supports the theory that students positively view the integration of the instructor-created videos into the online courses. It particularly applies to asynchronous courses where, unlike in the traditional face-to-face classroom, live interaction between the students and the instructor is very limited or sometimes even non-existent. Even though videos were very often not required for the grade, the overwhelming majority of respondents still found them helpful. This finding is supported by students' responses to open-ended questions. "... Thanks to the professor for taking the time to record the lecture each week topic throughout the pandemic," for example, "Because of the pandemic, we can't be in class, but a shout-out to the professor for finding a way to have lectures for students. I enjoyed the recorded lecture," or "Videos give more in-depth visuals with explanation." Similarly, responses evaluated on the 5-point Likert scale indicated that significant number of students will watch recommended videos even they are not required for the grade. Based on the survey answers, students also consider instructor-created content an important aspect of the overall engagement, which substantiates the theory that multimedia integrated into the online course effectively enhances and supplements both synchronous and asynchronous classes.

While most videos were under 15 minutes long, a notable number of students indicated that the content that they were assigned or recommended to watch was over 15 minutes, which is considered lengthy. Although students' overall impressions of instructor-created videos were positive, a slightly higher proportion of respondents admitted that length always or sometimes determined whether they watched it in full. This finding supports the hypothesis that students indeed prefer shorter videos. But, considering that half of the participants said that the length of the videos did not matter, the results also support the notion that students are willing to watch longer videos if they see informational and educational value in them (Hildebrand, Ahn, 2018).

One significant limitation of this study was not having an opportunity to conduct a physical live experiment in order to investigate whether students actually watched the videos fully and how long they were. Therefore, the Google survey was the only method for the study. Another limitation was the small sample size. Out of 818 students enrolled in the BEH course at the

Community College, 159 students agreed to participate in the study. Of the 159 participants, not everyone completed the survey by answering every question.

Researchers did not explore the correlation between the students' viewing habits and their academic achievement, i.e., grades. Further research into the relationship between instructor-created videos and student grades could potentially be conducted.

Findings from the current research allow researchers to offer the faculty of the Community College a practical recommendation on how to maximize the efficiency of instructor-created videos in synchronous and asynchronous online courses. It is highly recommended that instructors make sure that assigned and recommended videos are directly related to the topic of the class and, at the same time, provide some supplemental information that will deepen the existing knowledge. Based on the study results, researchers suggest prioritizing shorter multimedia content, unless watching longer videos is necessary for full understanding of the main educational concepts.

CONCLUSION

The popularity of online classes in higher education challenges the faculty to constantly look for ways to improve and maximize the efficiency of delivering material to their students and achieve the same level of academic results as in face-to-face classes. One of the most popular ways of sharing material in an online educational setting is to integrate multimedia content, particularly instructor-created videos, into the course. The aim of this study was to investigate Community College students' viewing habits in order to give the faculty a practical recommendation on how to increase the level of engagement in the online courses. The results demonstrated that while students view the use of instructor-created content positively and consider it an important part of the overall academic engagement, they give preference to and are more likely to fully watch shorter videos.

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