

ABSTRACT

Developing high-quality, interactive, and engaging content videos for online courses is time consuming and expensive. While many publishing companies have textbook resources that include videos, best practices indicate students want YOU to be in the video.

Is it worth your time (in terms of student learning) to make interactive and engaging videos?

The FIRST question is whether the students are watching the videos.

The SECOND question is whether the students who watch the videos are learning more (as evidenced by exam scores).

The THIRD question is the marginal effect of the quality of the video on the exam performance.

This work can answer questions ONE and TWO. Not all students are watching. Those who are watching the content videos perform better on exams.

Take-aways:

- (1) You NEED to have content videos in your online courses.
- (2) The videos need to be of YOU talking, not the textbook author.
- (3) You don't need to spend large amounts of time to edit the videos into masterpieces. The students will still watch and improve their learning.

CONTACT

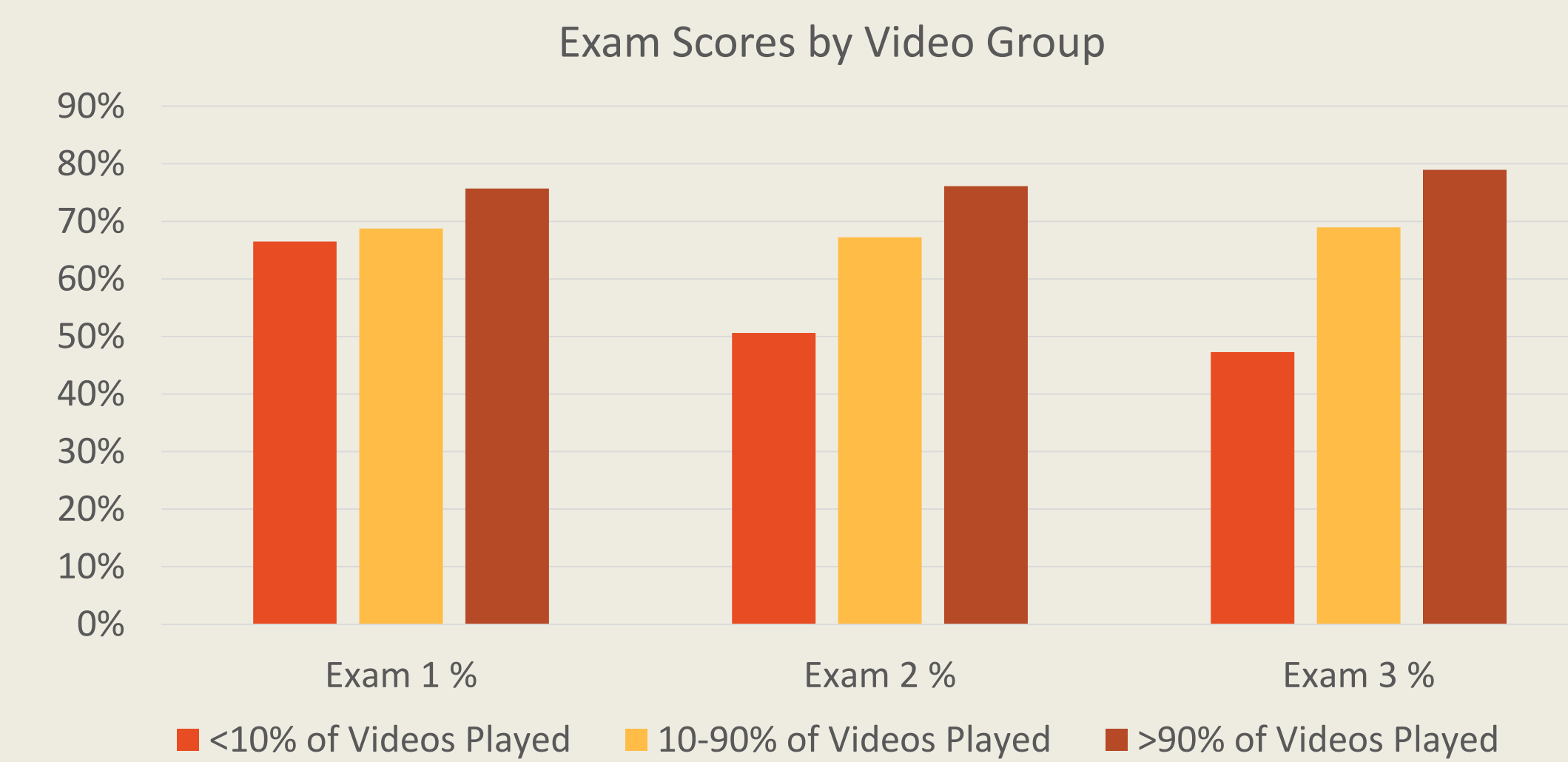
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INTRODUCTION

In the literature on best practices in online course design, there is significant evidence on the benefits of videos to present content. The best practices suggest that videos of the "talking head" variety are the least effective. Videos should include some active component, quiz element, multiple presenters, or graphics demonstrating concepts. Of course, each video type is only effective if students watch the videos. As an economist, the extra development costs of making videos other than 'talking heads' videos may not be worthwhile if the students' marginal benefit is not sufficient.

The research project presented here aims to answer one of the first questions related to the decision about video development by faculty for online courses. Namely, the project aims to quantify the impact of talking heads videos on student exam performance. What is the marginal impact of watching a 'talking head' video on the students' exam score, holding constant the other observable factors that influence exam performance?

Chart 1. Student Performance



The mean exam scores are higher for the students who played more of the content videos. This first pass of the data is what motivated the study into the impact of videos watching on student performance.

PREVIOUS STUDY

Students enrolled in online Money and Banking who usually take their classes on campus were less satisfied, less motivated, and had lower course performance than fully online students or students attending a live course.

Motivation: If watching the videos impacts exam scores and on-campus students in online sections are less likely to watch the videos, then filling an online section with on-campus students sets them up to fail.



Which would you watch?

Talking Head Video

Action-Drama Movie



The course involved in the study is a junior-level course in Monday and Banking. The course is one of the approved electives for business students to complete their third economics course requirement. As such, most students view it as a required business course.

The asynchronous online courses were taught in spring 2018, spring 2019, and fall 2019 with enrollments between 40-45. On-campus students can enroll in the online section. I was the only instructor and the videos remained the same.

The course videos were produced in Panopto and posted for each subsection of each chapter. The software collects individual student data on minutes played for each video. While I cannot gauge if a student played a video and didn't watch, I want to believe the likelihood is small. Students do not know I can track their minutes played.

For each exam, there were approximately 13 content videos. The mean was 63% of the videos watched before the exam. There were students who watched none and students who watched all of the videos multiple times.

DESCRIPTIVE STATISTICS

	Mean	Std. Dev.
Discussion (participation)	0.89	0.18
Homework before exam 1	0.79	0.16
Homework before exam 2	0.75	0.23
Homework before exam 3	0.73	0.24
Bonus (motivation)	0.60	0.24
Exam 1 score	0.71	0.17
Exam 2 score	0.68	0.20
Exam 3 score	0.67	0.22
Final Course Score	0.78	0.17
Percentage Exam 1 Videos Watched	0.68	0.33
Percentage Exam 2 Videos Watched	0.63	0.39
Percentage Exam 3 Videos Watched	0.57	0.39
Watched zero exam 1 videos, count	5	
Watched zero exam 2 videos, count	4	
Watched zero exam 3 videos, count	9	
N	125	

RESULTS

Watching the content videos improves exam performance. Using a standard OLS regression, the coefficient on exam videos watched is statistically significant. As expected, homework score was the largest predictor of exam success.

Interpretation: There were 13-15 videos per exam each approximately 20 minutes. Spending one more hour watching videos (20% more videos), would lead to an improvement in exam score of 2-3%. While the statistically significant impact is appreciated, it still begs the question if spending time on higher quality videos would be worth it.

Table 1: OLS Regression

	Exam 1	Exam 2	Exam 3
Year	0.061***	0.035*	-0.066*
Discussion	0.045	0.341***	0.340**
Homework	0.452***	0.291***	0.403***
Bonus	0.049	0.045	-0.035
Videos watched %	0.117***	0.085**	0.146***
Constant	0.147**	0.043	0.104
F statistic	F(5,119)	F(5,119)	F(5,78)
Adjusted R ²	0.3863	0.4961	0.5129
Number of Observations	125	125	84
	* p<0.10	** p<0.05	*** p<0.01

CONCLUSION

The goal of this project was the first step to address whether the benefits to students of high-quality videos are sufficient to justify the high cost of instructor time.

Some students do not watch any videos so this will not impact them. That disparity is greater as the course goes on. For the students who watched the content videos, the impact on exam scores is statistically significant but not large.

Talking-head videos improve learning. If faculty are considering where to spend valuable time in course development, efficiency gains are larger in other areas than producing high-quality, interactive, and engaging content videos.

Take away: Make videos of YOU talking about the concepts. Don't fuss with editing and crack a few jokes.