



Introduction

- Prior to COVID, but accelerated further by COVID, asynchronous video lectures increased in prominence in medical education.
- According to the 2021 Y2Q survey, approximately 70% of students utilize asynchronous video resources to supplement their education (Figure 1 and 2)^{2,3}
- With increasing medical knowledge students must acquire to be successful, students may feel inclined to increase video-playback speed to improve efficiency of learning.
- Prior studies have found conflicting findings on whether increasing video playback speed results in deleterious effects on information retention.¹
- This research will clarify provide further evidence toward existing body of knowledge on this topic and overcome the shortcomings of existing research.
- This research will help to inform both students and administrators on best practices in learning medical school material for in-school exams and STEP.

Figure 1:

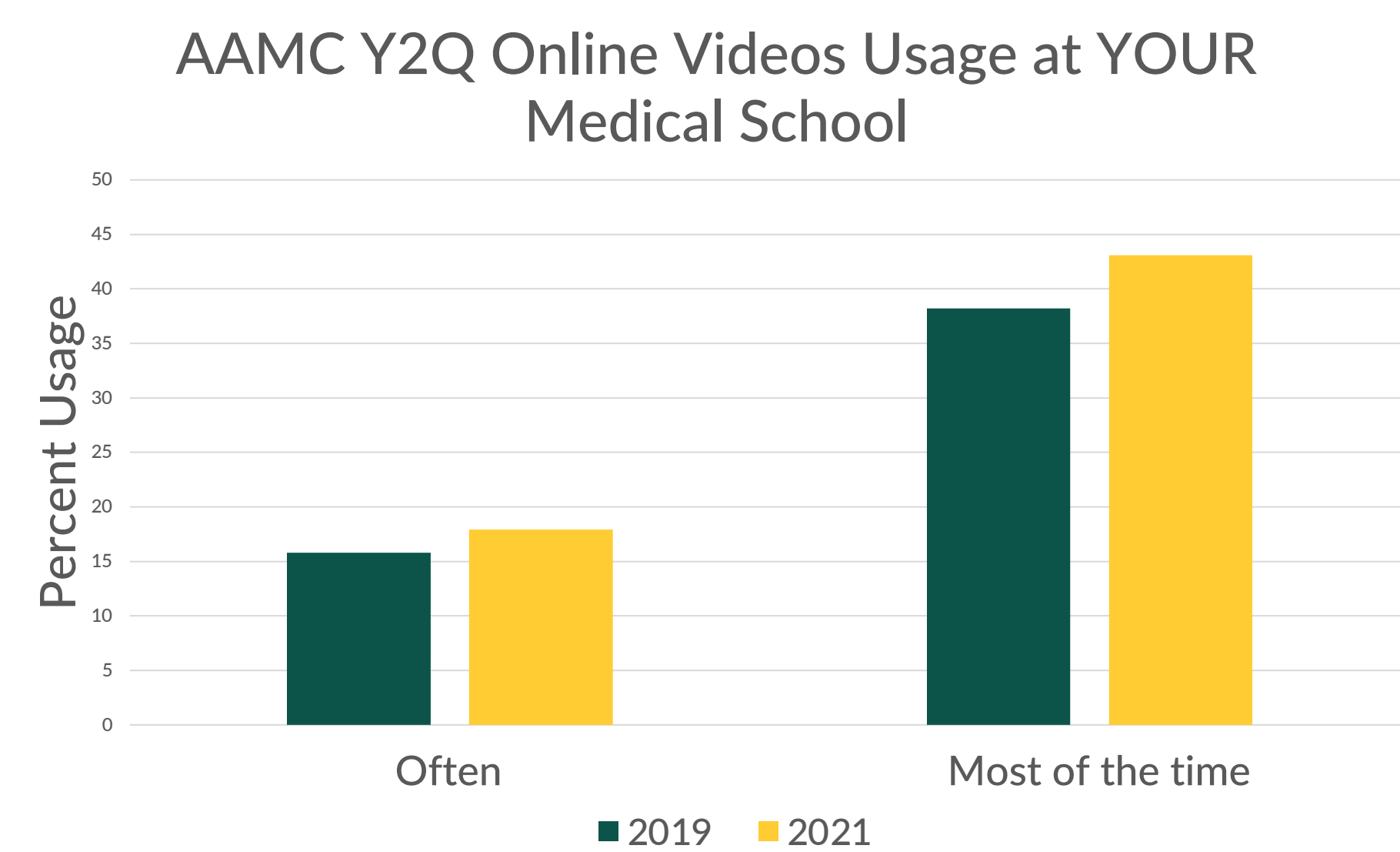
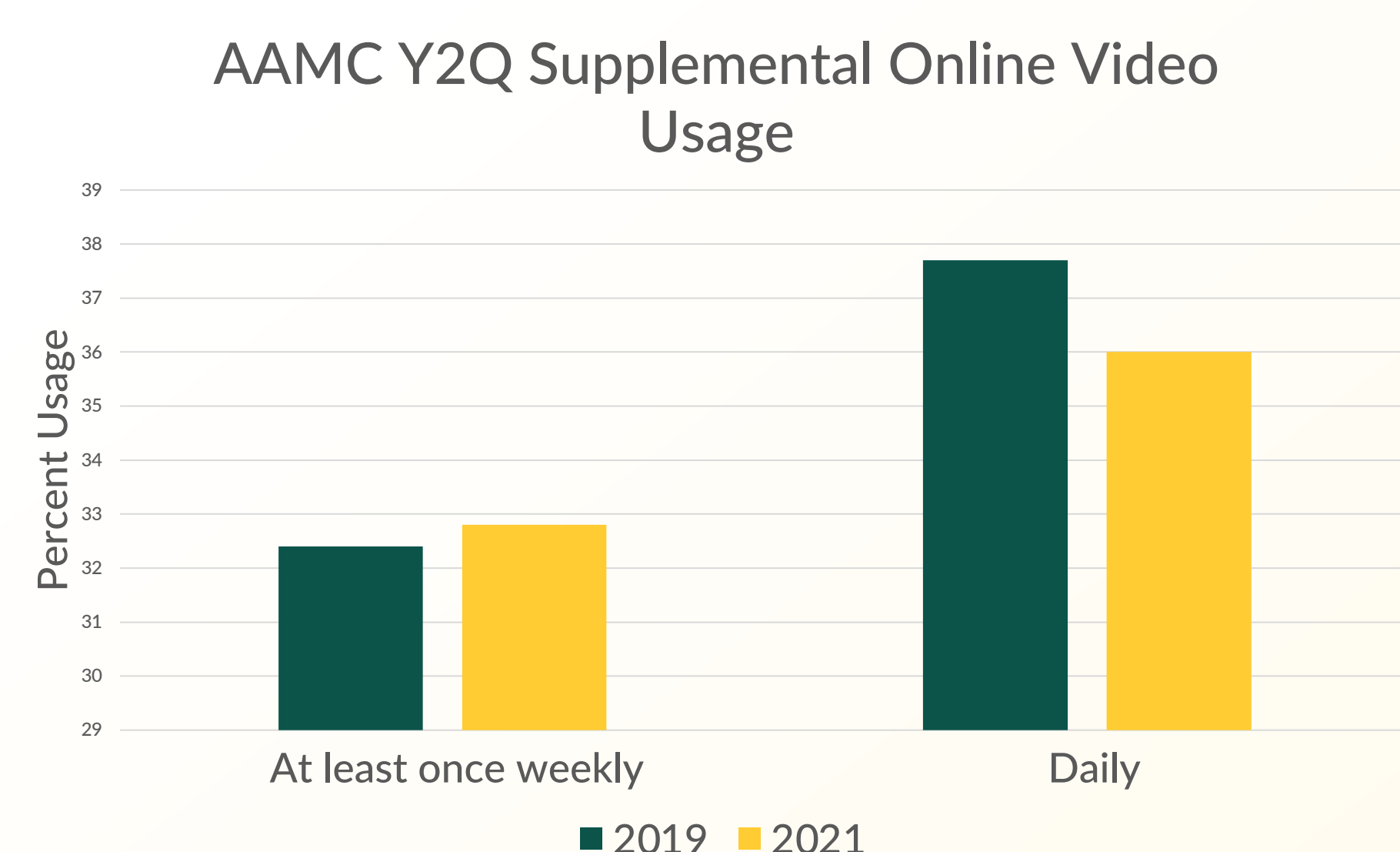


Figure 2:



Methods

- First, creation of a high-quality, 10-15 minute lecture was created on a topic unfamiliar to first-year medical students.
- The video was recorded with the natural, English-speaking cadence of 150 words per minute to best standardize the video creation.
- A corresponding 10-item quiz was also created which tests different levels of understanding (rote-recall vs application style questions).
- Following IRB approval, students will be recruited for the study. Within this, a pre-survey for eligibility will be conducted to remove students with prior, extensive knowledge of the topic of the video lecture.
- Remaining students will be randomly assigned to either the control group (1x video speed) or the experimental group (2x video speed) and their data will be anonymized
- Students in each group will watch the video at the designated speed without the ability to pause or replay the video or take notes on the videos content.
- Students will finally be administered the same 10-item, multiple choice quiz via Qualtrics and their percent correct will be recorded.

Expected Results

- Data collected will be analyzed in SPSS utilizing a 2-sample T-test with a predetermined $p < 0.05$ for significance
- Based on previous literature, improvements, no statistically significant changes, and declines in performance have been seen
- Previous literature most suggests either no statistically significant differences or declines in test performance with accelerated video playback speed.
- Further analyses will be conducted pending results of the experiment.

Conclusion/Next Steps

- Any result, excluding deleterious effects with increased video playback speed, will be seen as positive for students as it will suggest that increased video playback speed does not significantly harm their learning.
- Pending the results of this research, further research will be done to either identify the highest video playback speed above or below 2x speed, which does not result in deleterious effects.
- In addition, further research analyzing long term effects of initial viewing conditions utilizing this research's design may be beneficial in better emulating medical student learning habits.
- This will help to provide more tools to medical schools and students on how to best consume novel medical knowledge.
- This research may help guide future curricular choices on the amount of content included within medical education to best maximize the knowledge provided to future physicians in their preparation for standardized exams, like STEP 1 and 2.

References

- Lang, D., Chen, G., Mirzaei, K., & Paepcke, A. (2020, March). Is faster better? A study of video playback speed. In Proceedings of the tenth international conference on learning analytics & knowledge (pp. 260-269).
- Year Two Questionnaire (Y2Q). (2021). AAMC; AAMC. www.aamc.org/data-reports/students-residents/report/year-two-questionnaire-y2q
- Year Two Questionnaire (Y2Q). (2019). AAMC; AAMC. www.aamc.org/data-reports/students-residents/report/year-two-questionnaire-y2q