HYPOTHESIS
Graduate students who are provided access to a commercial online histology (COH) course will perform better than students given traditional preparatory resources in a histology course run on a flipped classroom curriculum.

Background
- Histology, the study of tissues, is an important component to professional and graduate education.
- Histology contact hours have reduced significantly in professional health sciences curricula and adjacent online resources are becoming increasingly important.
- Active learning approach such as flipped classroom has shown benefits.
- Educational value of COH videos to be helpful or enhance students' learning in histology.

STUDY DESIGN
- In 2020, in addition to textbook reading assignments and the learning objectives, COH (DaVinci Academy, LLC) was provided to graduate students as preparatory resource in a graduate flipped histology curriculum.
- In a retrospective study, learning outcomes from 2020 were compared to those from 2019, the control cohort (figure 2).
- Surveys were conducted at 2020 midterm and end of course on perception of the COH.

Materials & Methods

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RESULTS

Learning Outcomes
- There was no significant increase in test scores in the experimental cohort compared to the control cohort (figure 3).
- There was no significant increase in quiz scores in the experimental cohort compared to the control cohort (figure 4).

Survey Analytics
- Majority of students perceived COH videos to be helpful or enhance their learning (figure 5).
- Few students preferred traditional didactic lectures (figure 5).
- Preference for textbook increased over time (figure 5).
- Students rated quality of COH videos highly (figure 6).
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CONCLUSIONS & DISCUSSION
- DaVinci COH course can be helpful for histology curriculum an active learning pedagogy emphasizing self-directed learning.
- COH is perceived to be highly effective for learning content and pattern recognition skills in histology.
- Thematic analysis showed students especially enjoyed the incorporation of histological slides in the COH videos.
- Thematic analysis revealed students have preference for COH videos to be delivered by same instructor as course.
- COH courses can prepare students for flipped class active learning exercises.
- Potential confounds: course lectures delivered in a partial virtual format due to pandemic, small cohort size.

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