## **Accepted Manuscript**

American Journal of Surgery

Implementation of a flipped classroom approach to promote active learning in the third-year surgery clerkship

Catherine E. Lewis, David C. Chen, Anju Relan



PII: S0002-9610(17)30687-6

DOI: 10.1016/j.amjsurg.2017.08.050

Reference: AJS 12603

To appear in: The American Journal of Surgery

Received Date: 8 May 2017
Revised Date: 12 June 2017
Accepted Date: 22 August 2017

Please cite this article as: Lewis CE, Chen DC, Relan A, Implementation of a flipped classroom approach to promote active learning in the third-year surgery clerkship, *The American Journal of Surgery* (2017), doi: 10.1016/j.amisurg.2017.08.050.

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#### **ABSTRACT**

Background: Constructivist student-centered instructional models such as the flipped classroom (FC) have been shown to improve learning.

Methods: A FC approach was implemented for the surgery clerkship. Data was collected in phase 1 to evaluate student learning and attitudes. Based on these results, questions for the phase 2 open-ended survey were developed to improve understanding of learner attitudes, and ascertain how well the FC aligns with constructivist principles.

Results: There was no significant difference in shelf exam performance between the control and intervention groups. A majority of students agreed that they preferred the FC over lectures, and that their learning improved. Open-ended survey analysis demonstrated that the FC fostered self-directed, active learning, and that the in-class sessions facilitated application of concepts and deeper learning. Areas identified for improvement included better alignment with learning preferences through greater variety of pre-class learning options, improvement of podcast technical quality, and utilization of smaller in-class discussion groups.

Conclusions: Students had a positive perception of the FC. The FC supports self-directed and more active and deeper in-class learning.

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