

# Combined Flipped And Traditional Classroom Learning Experience For GI Radiology Education

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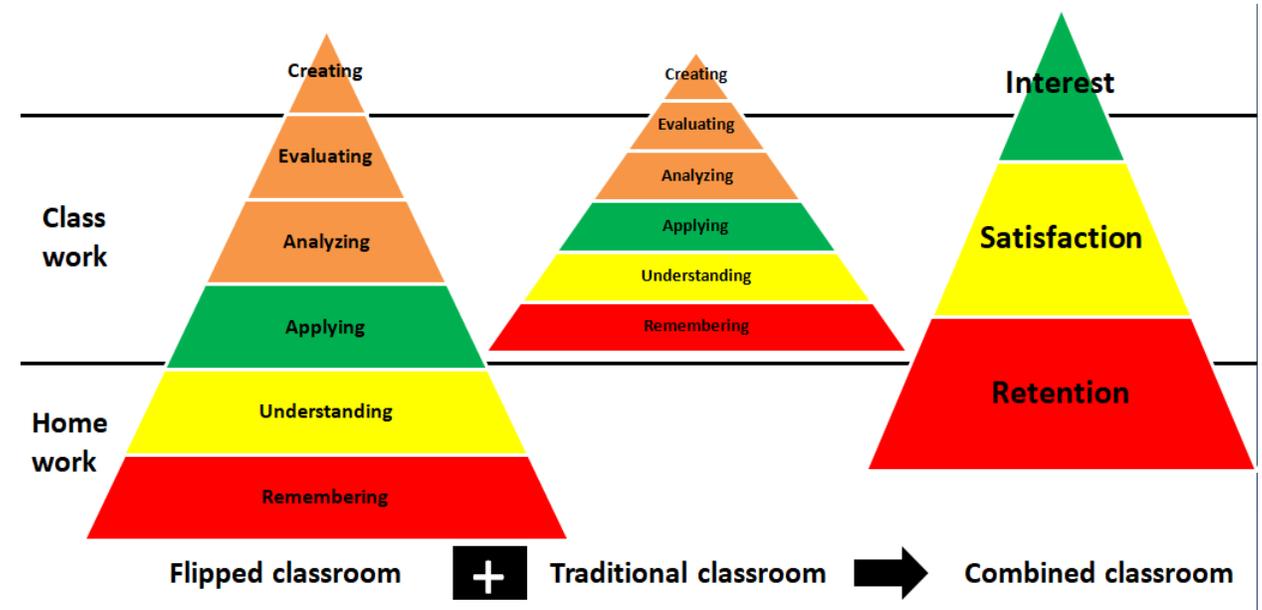
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# Background

- Flipped classroom learning is an approach to education in which students are assigned didactic material which is normally covered in lectures to be learned independently followed by classroom time which is dedicated to the application and critical thinking of the knowledge learned.
- We are studying a combination model that incorporates flipped classroom and traditional classroom teaching methods with eLearning technology.
- Training comes from both the teacher and the online learning modules which work together compatibly.



# Purpose

- We studied radiology resident's feedback of this model of reversed (flipped) teaching combined with traditional classroom settings for a GI colloquium during the COVID 19 pandemic in 2020.
- We hypothesized that this method of teaching would combine both resident's internal motivation and ability to self-direct their learning with reinforcement of the learning material in class by case-based exercises, overall leading to higher retention of material presented.

# Methods

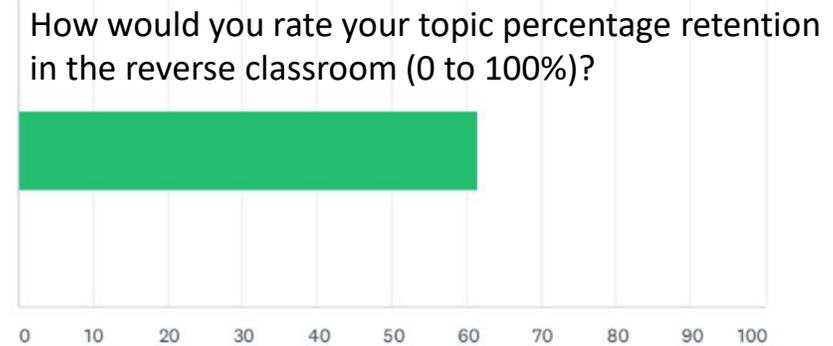
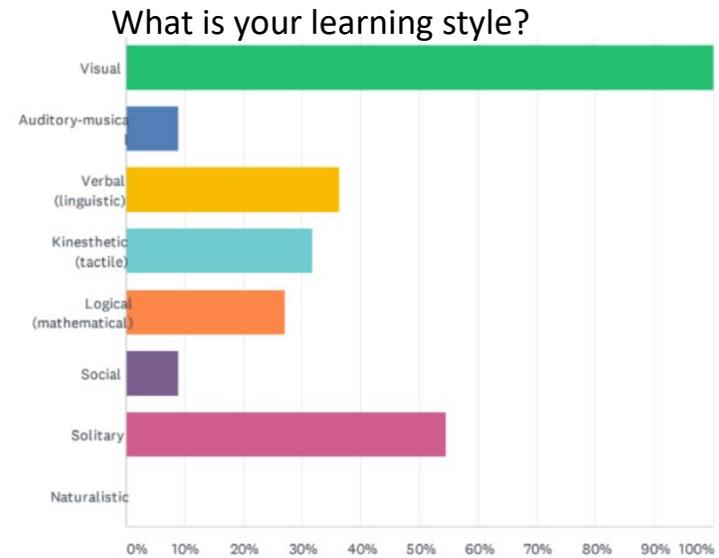
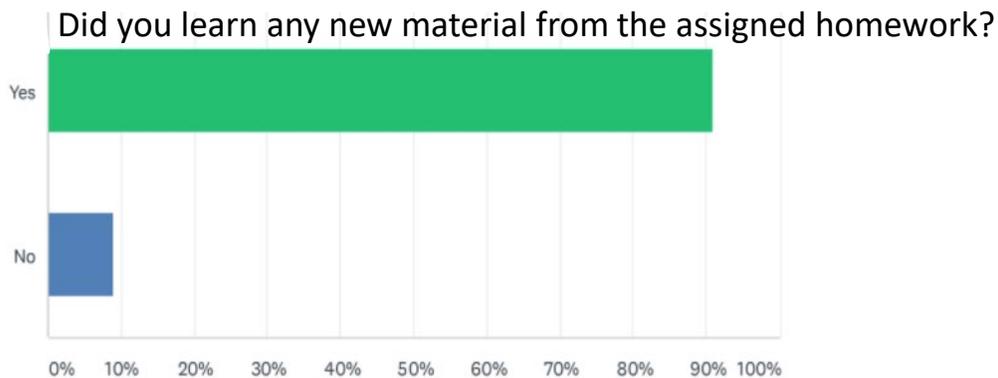
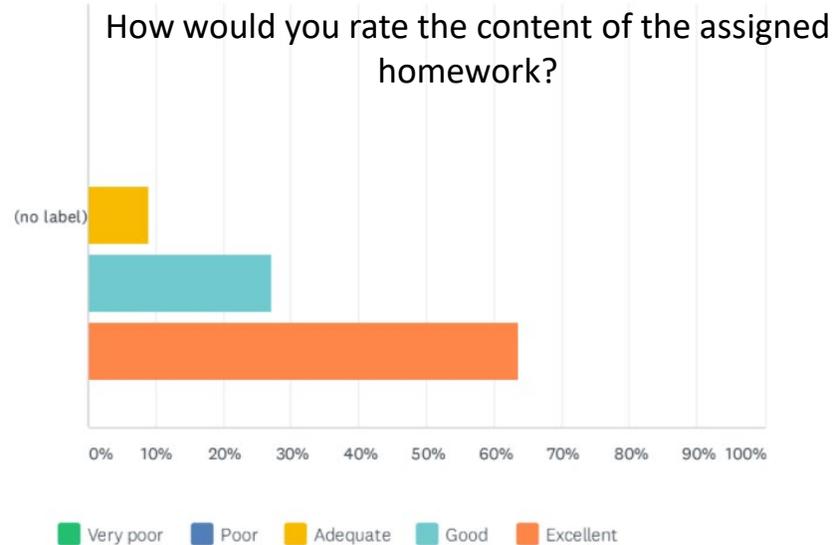
- 22 radiology residents
- 1 month of lectures covering GI topics
  - Independent learning through the assignment of GI Videos library from the Society of Abdominal Radiology: <https://abdominalradiology.org/sar-subpages/lecture-series/>.
  - GI conference by residency faculty via ZOOM with traditional teaching to enforce information learned independently as well as information assimilation via collective peer problem solving through cases.
- Residents completed surveys about their learning experience at the conclusion of the month.
  - Semi-anonymized evaluation (registration of PGY level only) using the Likert scale.
  - The survey included questions on forms of learning, learning satisfaction, and retention of material.

# Results

- 100% of the residents selected visual learner as well as 50% selected solitary learner.
- 63% residents rated the content of the independent learning materials as excellent and 36% as good or adequate. No resident rated the content as poor.
- Residents felt like completing the assigned homework was convenient with more than half (67%) rating it as good or excellent and 33% rating it as poor.
- Percentage of subjective material retention overall was 62%, with R1's scoring 55% and R4's scoring 68%.
- 100% of R1's learned new material from the assigned homework whereas 25% of the R4's did not learn anything new.
- 86% of residents recommended flipped classroom learning, including 100% of R1s.

# Results

Answered: 22 Skipped: 0



# Conclusion

- There is a high preference for the combined classroom over just didactic lectures by radiology residents with increased overall subjective retention of material.
  - This project was introduced during the COVID- 19 period of learning but is now being applied to future learning
- Benefits and limitations
  - Combined classroom optimizes the use of in-classroom learning with an online environment
  - Learner engagement is increased and educators guide students as they learn to apply concepts
  - Increased flexibility and personalization in creating course content but can take considerable time and technological knowledge to reach learning objectives
  - Relies heavily on student preparation, but not as much as flipped classroom alone
- In the future we hope to obtain more objective data on the efficacy of active learning using the combined model via standardized testing and other assessment models.

# Thank you!

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