



# Flipping Histology Classes: Suggestions for Making It a Dependable Bet

Dinesh V. Kumar<sup>1</sup>

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Dear editor:

I read your recent publication by *Michelle McLean* [1] about flipping histology in undergraduate curriculum. The article outlined the evolution of histology curriculum, and the creative analogy of comparing the histology learning with building of a house was really laudable. Upon reading the dissenting voices, I wish to share a few suggestions, which I had tried while flipping histology classes in our institute.

The tipping point for determining the success in flipped classrooms is the ability of students to integrate the information provided through pre-reading materials with their pre-requisite knowledge. Applying Kolb's learning theory, students who can assimilate the information from the reading material have an advantage over the "convergers" who learn better by analysing the slides [2]. The role of faculty, conducting flipped histology classes, is thus made more challenging, as students differ in their level of baseline knowledge. In-class activities, such as group discussion and collaborative learning, work out only if the learners having different learning styles are equally distributed. I recommend that stratification of students according to the learning styles and distributing them optimally would ensure efficient knowledge sharing.

To ensure the equity in knowledge sharing and to feed the multifaceted cognition in histology learning, I asked the students to construct their own concept maps. Concept

maps are graphical representations of assimilated knowledge which defines concepts related to a particular topic and demonstrates the relationships between concepts through the use of linking words [3]. For example, one of the key objectives of the histology class on lymphatic system is enabling the student to differentiate between various lymphoid organs. Ability to construct a concept map mandates him to fit the pieces of knowledge gained through various sources and thereby reinforcing the wholesome mental imagery. A feasible but time consuming alternative is "drawing-along" technique, which helps in longer retention of knowledge.

As the author described and my own experience supports, there are many benefits of flipping histology classes. The barriers for implementation differ from institute to institute. However, multiple reinforcing of the content and application of adult learning theories makes the methodology a dependable bet, irrespective of the indigenous roadblocks. A curious teacher should be able to assess the dynamics of the learning environment prevailing in his/her institute before flipping the classes, and this would ensure a win-win situation for both sides.

## Compliance with Ethical Standards

**Conflict of Interest** The author declares that there is no conflict of interest.

## References

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This is a letter to the editor in response to the monograph entitled McLean M. "Flipping Histology in an Undergraduate Problem-Based Learning Medical Curriculum: a Blended Learning Approach." *Med Sci Educ.* 2018; 28: 429. <https://doi.org/10.1007/s40670-018-0543-4>.

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✉ Dinesh V. Kumar  
dinesh.88560@gmail.com

<sup>1</sup> Department of Anatomy, Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry, India