

# Using Videos to Increase Teaching Assistants' Pedagogical Content Knowledge and Preparedness



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## Flipping the class for teaching assistants

Much like using videos to flip the classroom for students(1), flipping the training for teaching assistants can have similar benefits. With little more than a smart phone and free or inexpensive video editing software, a repository of subject-matter expert content can be created to provide teaching assistants a resource that will enable them to offer undergraduates a high quality educational experience.

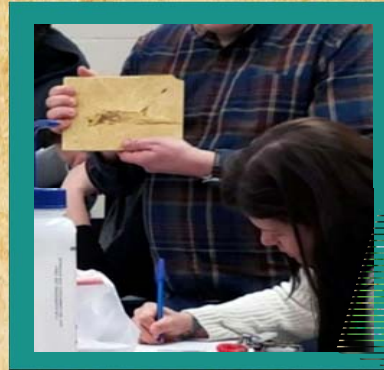
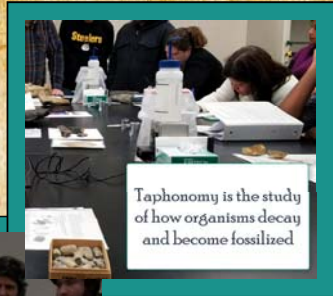
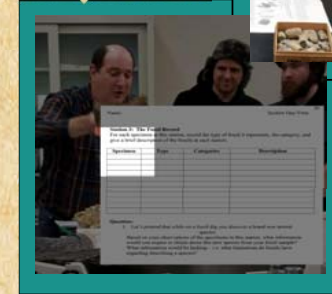


Figure 2. Subject-matter expert is filmed as he explains the lab information to teaching assistants.



Taphonomy is the study of how organisms decay and become fossilized



Figures 4/5. Additional editing is done to highlight pertinent definitions and activity instructions.

Sample Lab



Figure 1. The Evidence for Evolution lab\* investigates five different lines of evidence.

## Pedagogical content

Both the fossil record and the vertebrate morphology sections of the lab are based on, and encompass, an extensive range of background information which supports the lab activity. In most cases, a teaching assistant hasn't yet acquired the volume of knowledge necessary for a comprehensive presentation to introductory biology lab students.

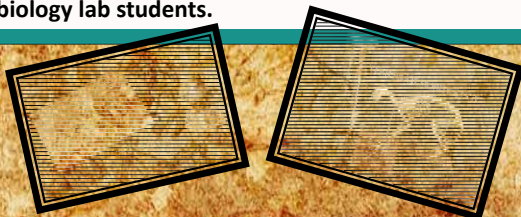


Figure 3. The video is edited (2) to include lab specific supplementary information.

## Video access/benefits

The videos are made available via the university's learning management system. The teaching assistants are encouraged to view the video while actively investigating the actual materials in the lab setting. The videos may be viewed at the teaching assistants' convenience and as many times as necessary to gain a complete understanding of the information in order to comprehensively both instruct and guide the introductory biology students during the laboratory activity.

### References

- Heyborne, W., & Perrett, J. (2016). To Flip or Not to Flip? Analysis of a Flipped Classroom Pedagogy in a General Biology Course. *Journal of College Science Teaching*, 045(04). doi:10.2505/4/jcst16\_045\_04\_31
- TechSmith Corporation (2017) *Camtasia Studio* (Version 9) [Computer Program]. Available at <https://www.techsmith.com>

### Acknowledgments

- \*The lab was adapted in part from Brian White, UMass Boston, Biology 112 Lab Manual
- A special thank you to Dr. Brady Porter for his expertise and to the instructors and teaching assistants who participated in the filming of the video