



Scientific publishing has traditionally been dominated by text-only journal articles. Yet it is often difficult to capture key details of scientific methods using text alone. To clearly visualize techniques and their nuances, many researchers turn to video. Four case studies illustrate how video is effective as a medium for scientific knowledge transfer.




## Case Study 1: Bringing a complex technique to life

### Where: *The Butcher Lab at Cornell University*

The Butcher Lab initially published a protocol for live ex ovo imaging of a chick embryo in the form of a text article.

-  Their work was highly-cited, but some researchers were still having difficulties implementing the complex technique in their own labs.
-  The researchers published a JoVE video to clarify the nuances of their protocol.

Since the publication of the JoVE video:



-  **There has been a large decrease in the number of inquiries about the technique.**
-  **The JoVE video has received over 17,000 views.**
-  **The video article has been cited over 65 times.**

**“The video format conveys complicated methods significantly better than text alone and helps to validate our novel results.”**  
 — Dr. Jonathan Butcher, Professor, College of Engineering, Cornell University

## Case Study 2: Saving time & money<sup>1</sup>

### Where: *The Calos Lab at Stanford University*

Researchers at the Calos lab at Stanford University needed to learn a new technique involving the intra-arterial injection of stem cells in mice.

-  They considered bringing in an expert from Europe to show them the technique in person, but they needed a less expensive training method that wouldn't slow down research.
-  The exact protocol was available as a peer-reviewed JoVE video: a cheaper and more efficient tool to visualize the same technique.

After using the JoVE video to learn the method, and with the help of an internal collaborator:

-  **The Calos lab advanced their research by an estimated 6 months.**
-  **Their research generated preliminary results that supported a grant application.**
-  **They saved on the costs associated with bringing in an expert from Europe.**

**“Methods are complex and can only partially be described in words. Seeing the method performed immediately provides a wealth of information to the viewer.”**  
 — Dr. Michele Calos, Professor, Department of Genetics, Stanford University



## Case Study 3: Sharing novel research with the world

### Where: The Lötvall Lab at the University of Gothenburg

Researchers at the Lötvall Lab published a text-only article detailing a groundbreaking protocol for isolating functional RNA from exosomes.



Their research was highly-cited, but they received many questions from researchers trying to implement the method in their own labs.



To help other scientists visualize all the details of their method, they published their protocol as a JoVE video.

**“When you develop a method, you work hard to perfect it as much as possible. But then when you discover something slightly different for further improvement, it is very important that you actually tell that to the rest of the world.”**

— Dr. Jan Lötvall, Professor/Chief Physician, Department of Internal Medicine and Clinical Nutrition, University of Gothenburg

After the publication of the JoVE video:



The video has been viewed over 84,000 times and cited 426 times.



It has helped to disseminate the lab’s novel research on extracellular vesicles, igniting interest from scientists around the world.

## Case Study 4: Streamlining lab training & improving outreach<sup>2</sup>

### Where: The Vale Lab at the University of Edinburgh

When researchers at the Vale Lab began working with *Drosophila melanogaster*, they had to learn an array of new techniques.



Text-only publications lacked the level of detail required to master the protocol quickly and troubleshoot problems.



To learn new methods efficiently, researchers at the lab began referring to JoVE videos and their associated text protocols. They also published JoVE video articles of their own.

**“What I think is positive about it [publishing] is that it’s not just a scientific contribution...it kind of fulfills different roles, and that’s always a positive thing. It’s not just another publication — it’s also a way of teaching and public outreach.”**



— Dr. Pedro Vale, Lecturer in Evolutionary Ecology, University of Edinburgh

The use of JoVE videos had the following benefits:



JoVE videos cut the training time for a protocol by as much as 50 percent, according to the lab’s primary investigator Dr. Pedro Vale.



The process of recruiting and training undergraduate students for lab projects was streamlined by providing project summaries with links to JoVE videos.



Publishing JoVE articles helped to effectively disseminate the lab’s in-house techniques to the scientific community.

Filmed at the world’s top scientific institutions, JoVE videos bring to life the intricate details of cutting-edge experiments enabling efficient learning and replication of new research methods and technologies. Producing thousands of new videos every year, JoVE is a must-have resource for scientists in academia and industry. The JoVE Advantage series discusses the effectiveness and benefits of JoVE videos in science research and education.

<sup>1</sup>JoVE. (2018, March 30). Injection Video Saves Stanford Lab Six Months Of Research Time. [Blog post]. Retrieved from <https://www.jove.com/blog/scientist-blog/success-in-your-research/injection-video-saves-standford-lab-six-months-of-research-time/>

<sup>2</sup>JoVE. (2018, July 13). Case Study: Video Reduces Research Lab’s Time To Learn Fly Protocols. [Blog post]. Retrieved from <https://www.jove.com/blog/scientist-blog/success-in-your-research/case-study-video-reduces-research-labs-time-to-learn-fly-protocols/>