**What is being learned? What mathematics is the focus of the activity/technology? Is relational or instrumental understanding emphasized?**

The Calculus Phobe videos focus on a variety of topics from early in the calculus curriculum related to limits and the short-cut rules for finding derivatives. They largely support instrumental learning, showing examples for how to do different techniques, though there are a few early in each “chapter” that are more relational in nature.

**How does learning take place? What are the underlying assumptions (explicit or implicit) about the nature of learning?**

It is assumed that listening to and watching explanations and examples will help students understand the techniques they need to learn. Animation is used to improve on the standard lecture, though it doesn’t change the underlying method of instruction.

**What role does technology play? What advantages or disadvantages does the technology hold for this role? What unique contribution does the technology make in facilitating learning?**

The technology largely offers access to information, though it also presents mathematical ideas in ways that a teacher giving a lecture cannot, using animations. Many students could get this information from their classroom teacher, but the videos do provide a way for students to refresh themselves and hear it explained in a slightly different manner than what their teacher offers. Students who don’t have teachers that post their own videos now have a way to hear the lecture again at home.

**How does it fit within existing school curriculum? (e.g., is it intended to supplement or supplant existing curriculum? Is it intended to enhance the learning of something already central to the curriculum or some new set of understandings or competencies?)**

The Calculus Phobe videos supplement the current calculus curriculum, if they are used as refresher videos for students. They could also be used to flip the classroom, providing lectures for students to watch in the evening so teachers can spend time in the classroom helping students to solve problems.

**How does the technology fit or interact with the social context of learning? (e.g., Are computers used by individuals or groups? Does the technology/activity support collaboration or individual work? What sorts of interaction does the technology facilitate or hinder?)**

While the videos could be watched by multiple students at a time, who can then discuss what they’ve watched, the technology itself does not support social learning. It promotes a passive reception of the information. Mr. Kelley (the narrator) often asks questions, then immediately answers them, without given students time to consider what he asked.

**How are important differences among learners taken into account?**

The videos are great for students who are visual and auditory learners and those who prefer to learn by observing first. There is no support for students who prefer to learn by doing and asking their own questions.

**What do teachers and learners need to know? What demands are placed on teachers and other "users"? What knowledge is needed? What knowledge supports does the innovation provide (e.g., skills in using particular kinds of technology)?**

There is little prerequisite technological knowledge needed, just using a browser to visit websites and clicking on links. Mathematically, students need to be familiar with functions and algebraic techniques, as they would for taking any calculus course.