

HOW TO CREATE AN INTERACTIVE VIDEO VIGNETTE (IVV)

An IVV should not take more than 10 minutes to complete or students will lose concentration!

Critical elements include:

1. Choose a phenomenon that a typical student who is not in a lab or on-site will have difficulty understanding unless it can be:

- viewed directly or in a video; and/or
- viewed in a slow motion video; and/or
- analyzed on screen by direct viewing, ruler measurements or video analysis

2. Start the IVV by having the student enter his/her name and then describe the physical phenomenon and/or show a real time video of it.

3. PRETEST: Ask the student to predict or explain an aspect phenomenon she has just observed by selecting what seems to be the “right answer” from a list of several questions you have posed. The possible answers should include the right answer and two or three "distractors" that exemplify common student conceptions about the phenomenon. If possible, use distractors that have been confirmed by validated PER outcomes.


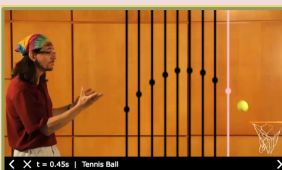

NOTE: In cases where research isn't available, the Vignette creator should consider conducting informal research by giving essay questions to students or interviewing individual students about what they think will follow from the observed phenomenon.

4. Show the student user the video of the phenomenon again, but this time with additional visual information (e.g. a synchronized graph or additional video) that lets the student deduce which answer to questions posed in the pretest is correct.

5. POST-TEST: Ask the student user to draw a conclusion by hopefully selecting the correct answer to the multiple choice PRE-TEST Questions.

6. Next, have the instructor do a wrap up using some combination of a voice-over with visuals and a straight “talking head” explanation.

7. Finally, to get “completion credit”, we suggest that each student be required to type in his or her name and either: (a) print out and hand in a “completion certificate” or (b) forward a screenshot of the certificate to the instructor’s dropbox or email address.

<p>An instructor describes and demonstrates the phenomenon (in this case, a ball toss).</p> 	<p>Question 1: Does the horizontal speed of the ball change as it moves?</p> <p><input type="checkbox"/> Yes, it speeds up <input type="checkbox"/> No, it remains the same <input type="checkbox"/> Yes, it slows down <input type="checkbox"/> Yes, it slows down at first, then speeds up</p> <p>The user makes predictions about the horizontal and then the vertical motion of the ball.</p>	<p>The user replays the video, locates the ball on each frame to create a graphical depiction of the ball's horizontal motion and then it's vertical motion.</p> 	<p>When asked whether the horizontal speed of the ball changes as it moves, you picked the answer, "Yes, it slows down."</p> <p>You may want to take a closer look at the line spacing!</p> <p>The user's prediction is shown with an invitation to reconsider.</p>	<p>The instructor summarizes the results and draws conclusions.</p> 
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