Activity

5

# YouTube Test Corrections

**Educator:** Clarke Wellman, Adjunct Professor of Physics, Astronomy, and Computer Science
**Context:** Out-of-class; Engineering Physics
**Keywords:** exam wrapper, social media
**Student Activity Time:** 50 minute class period

*In the engineering physics course, students create a video of themselves solving, and talking through their entire exam.*

## Introducing the Reflection Activity

Oftentimes, students' test performance prompts instructors to offer a corrective measure, and allow students a second chance to demonstrate mastery of the material. After an exam in physics mechanics, the educator gave students an opportunity to earn back some of their missed points. Students were given four days to complete a YouTube video of themselves completing and explaining their way through exam questions. The purpose of this activity was to implement a think-aloud strategy to exam corrections in a physics course.

After an exam, the educator posted exam solutions on the course management tool for students to review their solutions on the exam. Students were offered the opportunity to re-do the problems that were missed on the exam. The educator points students to reflect on their exams and consider what the source of their errors was. Students are to re-do the problem and record a YouTube video of their revised solution, explaining each step toward solving the problem. The students returned the written solution and shared the video link with the educator. The educator re-grades the students' submissions, and awards a fraction of the possible points to the students.

Students experienced a range of outcomes including improved understanding of physics concepts and verbalized their procedure for solving physics problems. The activity prepared to students to use a think-aloud protocol when doing homework problems, or using the framework during regular exams.

## Recreating the Reflection Activity

DIGITAL LIBRARY CONTENT

5.1 Video Library

| | Description |
|---|---|
| **1** | Administer and grade exam; if the average is low, allow students to do YouTube Test Corrections. |
| **2** | Assign YouTube Test Corrections opportunity with a 4-day due date. Tell students the possible fraction of their points back. |
| **3** | Give students advice about technology, and any examples. |
| **4** | Have students return their YouTube video link and written work by the due date. |
| **5** | Grade the video and written work, and return to students. |
| **6** | Save the video to a library of student solutions for future classes. |

*Point students to the right technology.* I recommend that students use Screencast-o-Matic which is a video recording shareware for PCs or Macs. They can only record 15 minutes at a time, which is more than enough for this task. Also students need to have a good microphone for the activity to work out well. When students use camcorders for this task, the audio quality is not as good. We are looking forward to having a library of tablets for students to borrow that have adequate technology to do the activity. Making sure that they have access to the right kinds of technology makes this easier for students to do.

*Help students realize that learning is a process.* Students are very hard on themselves and don't realize that everyone makes mistakes and that mistakes can contribute to their learning process. The entire process of recording a test correction helps them remember what they learned. I really want them to become conscientious students. They take the time to set up the recording, they go over the question, and often record it a couple of times; that process helps them communicate clearly what they are doing to solve a problem. In the process of them teaching, they are learning. Recording it on their own is less intimidating than getting up to do it in front of me or the class. I'm often surprised by the high-quality of videos that students produce. Sometimes they use special effects, and music and I think all of that helps them remember what they have learned.

*What was the inspiration for the reflection activity?* The reason I started doing the YouTube videos is that I was really disappointed with the written corrections I used to get back from students. Students would just look at the solutions and write in the answers for the written test corrections. I actually wanted them take the time to correct what they got wrong, and even though it was motivated by getting some extra points back, what they turned in didn't show any evidence that they have improved their understanding. The best way to get them to explain their reasoning would be to sit down with them to get them to explain it to me, but there just isn't logistically enough time to meet with that many students. The cool thing about the YouTube videos is that they get to do it by themselves, without having me or anybody else as the authority figure to mess up their thinking or make them uncomfortable. Plus they get the opportunity to watch them, so they get it a few times.