Learning Through Teaching – An Online Setting

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ABSTRACT

A powerful way for students to master a subject is to engage them in teaching it to someone. This is especially true for mastering concepts in mathematics. In a traditional classroom we can give markers to students and send them to the whiteboard to solve problems. In an online course the electronic whiteboard is not quite as friendly. Though recent innovations make it possible to “write mathematics” on the electronic whiteboard, the process is quite time-consuming.

In our online pre-calculus course we supply a student with a PDF file containing the solution to a problem and ask the student to create a YouTube video in which they play the role of instructor. They are required to explain the steps involved in solving the problem and why each particular step “makes sense.” We then provide a critique of their video and if needed require them to supply a revised video. Select revised videos are made available online for the entire class.

We present three of the student videos, feedback on one of the videos, and the corresponding revised video.