Title: Using Runestone to enable the flipping of analytically engaging math and programming lessons.

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Synopsis:

Media-Propelled Computational Thinking (iMPaCT) is a strategy for simultaneously engaging students in the exploration of programming and mathematical problem solving. iMPaCT utilizes an unusual pedagogy that has been problematic for instructors to replicate.

To facilitate replication, iMPaCT's learning activities were converted into alternating sequences of short videos and activities assigned as homework prior to discussion during class. Technical challenges limited the effectiveness of these "flipped" lessons. The lessons required the use of multiple programs which were awkward to install and use, and did not include interlocks to prevent students from looking ahead for solutions rather engaging in analytic problem solving.

We are in the process of adapting iMPaCT's lessons and pedagogy for the Runestone learning management system. Runestone was selected because it implements the programming features required for iMPaCT lessons and is compatible with web browsers provided by both conventional and mobile computing platforms.

This presentation will include an overview of the process of embedding a programming activity within runestone, a short demonstration of the interface provided to students, and a discussion of strategies being considered for adapting iMPaCT lessons to this format.