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Enabling and integrating online formative assessment in a flipped calculus course.

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Summary: The increased use of videos in mathematics courses means that direct instruction, traditionally part of class lectures, now often occurs outside of the classroom. Although students come to class with some baseline level of understanding, instructors lose opportunities to assess students' understanding of content as it is seen for the first time. This action-based research study embedded formative assessments into videos used in an inverted Calculus I course. In this article, we describe how a web-based media player, Transformative Anchored Collaboration Environment (TrACE), was integrated into the course and how feedback on students' understanding of the videos' content was used to alter instruction.

Classification: U55 D65 D45 I15

Keywords: formative assessment; calculus; technology; flipped pedagogy

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