Using the Classroom Flip to Teach Engineering Classes

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Research supports that student learning increases as instruction shifts from passive methods to active, constructive, or interactive methods.
Chi (2009) differentiates between different types of instructional activities.

Active activities require the students to physically do something.

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**Constructive activities** require the students to produce new outputs, that go beyond presented information in class.

Image from http://www.flickr.com/photos/pennstatelive/4948754945
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Interactive activities require the students to dialogue with one another and integrate contributes from all members.
Some instructors resist using more active forms of instruction in their class for a variety of reasons.
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Students are required to prepare for class by watching recorded lectures and completing a short quiz to ensure preparation.
What advantages does the classroom flip have for students and for instructors?
The classroom flip technique provides several advantages for students and instructors.

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6. Students receive help from you as a guide during critical periods of learning

Image from: http://www2.summitcds.org/summit-stories/faculty/Eric-Towers.cfm
Instructors need to make several decisions before flipping their course.

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2. What will students do outside of class?
3. How will you ensure students will be prepared?
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1. What lesson or unit do you want to “flip?”
2. What will students do outside of class?
3. How will you ensure students will be prepared?
4. What will students do in class?