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What Should We Flip?

Dr. Jerrid Kruse, Editor

Educational fads are nothing new. Renaming or repackaging of old ideas are also not new. Indeed, anyone who has been in education for more than a few years will recognize how the pendulum of educational reform swings back and forth. Unfortunately, although things “change,” the change is not typically accompanied by “improvement” on a grand scale. One current trend is the notion of “flipping” or the “flipped classroom”.

In its most basic form, the flipped classroom uses video capture to record lectures. Students watch lectures at home instead of being lectured to in class. Then, students work on what was traditionally assigned as homework during class time. The perceived benefit here is that teachers can immediately help students who are struggling with their “homework.” Unfortunately, in this most basic form very little (if anything) about instruction has changed. If such an approach were taken in a traditional classroom, students are still getting lectured to (but at home) and are still completing practice problems aimed at teaching students the procedures to solve problems rather than help students understand fundamental science concepts.

In a more nuanced version of the “flipped classroom,” class time is freed up by take-home video lectures for guided practice, inquiry-based investigations, and student questions. This version makes for a nice scaffold for teachers to improve their practice. That is, teachers can hold onto the crutch of lecturing, but start to explore more effective ways of teaching. Yet, emphasis could easily remain on rote learning via lecture depending upon how students are assessed and to what extent emphasis is placed on the in-class activities.

The most robust (but least common) explanations I've heard for the “flipped classroom” claim that video lectures are not at all emphasized and that learning is “student led” and students spend time in class exploring nature, testing claims, and creating ideas to explain phenomena. This approach is excellent, but seems to just be a new label (“flipped classroom”) put on ideas that are decades old. That is, science educators have promoted such approaches for over a century.

While I do not mean to dismiss those educators working toward this last model of the “flipped classroom”, I do wonder: 1) to what extent is the label “flipped classroom” useful if there are so many varieties?; and 2) why do educators try to reduce the complexities of effective teaching to a simple label? We undermine our profession when we reduce the complex teaching process to simple terms or simple strategies. Despite these questions, the notion of flipping is not completely without merit. Upon further reflection, I came to realize there are many things in traditional science teaching that are backward to what we know about effective science teaching. So consider the following “flips” as you work to improve your own practice:

- Rather than explain and then explore, have kids explore first so that the explanation better addresses their thinking
- Rather than explain a concept and then having students try a problem, have students try a problem first to see what they can do and to shed light on their thinking
- Rather than abstract ideas preceding concrete examples, instruction should start with concrete representations
- Rather than demonstrating procedures to students, encourage them to create their own procedures
- Rather than asking questions to confirm student understanding, ask questions to guide student learning
- Rather than letting curricula decide how we teach, use student interest to meet curricular expectations
- Rather than letting politicians decide the direction of education, education professionals should be setting the course
- Rather than using assessment to judge students, use assessment to better meet students' needs

Of course, actually doing these things is much more difficult than simply switching where/when kids listen to a lecture and when they do practice problems. Real educational change requires us to flip so much more than what students do in class and at home.