



Opinion

# Flip My Class! A faculty development demonstration of a flipped-classroom

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## Abstract

This article describes a unique model for a faculty development program focused on sensitizing clinical pharmacy practice (CPP) faculty to the “flipped-classroom” approach to teaching. The developers of this program assigned pre-program homework to the faculty, which required them to watch a YouTube origami video on “How to make a paper crane?” and a Prezi presentation on flipped-classroom concept. Faculty were instructed to watch the crane video, construct their own crane, and send in a picture of it to the faculty facilitators by the deadline. The in-class program activities included a quiz on the homework; evaluation and feedback of the cranes submitted; a discussion on how to utilize class time for higher order complex assignments via a flipped-classroom approach; and individual, small-, and large-group reflection. Twenty of 34 (59%) CPP faculty completed the paper crane homework. Twenty-three faculty (68%) attended the “in-class” workshop. Overall, 84% of the faculty stated that the faculty development workshop and homework very strongly or strongly increased their understanding of a flipped-classroom and 88% of the faculty stated that they would consider flipping one of their classes next year. This well-received faculty development model successfully sensitized faculty to the flipped-classroom concept by having them take on the role of the student. This faculty development program is a model for other schools/colleges to expose faculty to alternative teaching techniques which may help them “think outside the box” when teaching student pharmacists.

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The Accreditation Council for Pharmacy Education (ACPE) requires that pharmacy faculty possess a commitment to be effective teachers, utilize educational technologies and techniques to enhance student learning, and have contemporary knowledge and abilities in current educational philosophies.<sup>1</sup> Colleges and schools must have or provide support for programs and activities for faculty and preceptor continuing professional development to achieve this standard. Specifically, the guideline states that programs for faculty should “provide orientation and ongoing training to faculty to help them become proficient in the use of the program’s technology and educational methodologies.”<sup>1</sup>

Many schools address this mandate by charging faculty development committees with creating innovative programs on teaching pedagogy. This article describes a model for a faculty development program focused on sensitizing faculty to the “flipped-classroom” approach to teaching. The developers of this program chose an approach to flip the classroom on the clinical pharmacy practice (CPP) department faculty, allowing them to experience this teaching method from a student’s perspective.

The concept of a flipped-classroom entails moving traditional lecture and content outside the classroom and freeing up classroom time for active learning, including application of content in the form of case studies, discussions, or simulation experiences.<sup>2</sup> While the original definition of a flipped-classroom included techniques used to deliver content outside class using technologies such as YouTube videos, lecture capture, or podcasts, it does not

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necessarily have to involve technology.<sup>3</sup> The flipped-classroom model of teaching focuses on moving content that fits in the lower levels of Bloom's Taxonomy (understanding and remembering) outside class, reserving in-class time for the higher order levels (creating, evaluating, analyzing, and applying).<sup>4</sup> In a flipped-classroom, the professor operates as a facilitator and works side by side with the students rather than performing as a "Sage on the Stage."<sup>5</sup>

The flipped-classroom concept has been gaining attention in Colleges of Pharmacy with positive outcomes. Pharmacy colleagues have used a variety of out-of-classroom assignments including vodcasts, pre-recorded lectures, pre-readings, and study guides in order to reserve classroom time for patient case discussions, group discussions, think-pair share activities, short quizzes, mini-lectures, and student presentations.<sup>6–8</sup> Most pharmacy research that involves flipped-classrooms use pre- and post-surveys to assess student perceptions of this pedagogy. Overall, 96% of students in a renal pharmacotherapy course felt that viewing vodcasts prior to class prepared them for the in-class activity, while 90% felt that the instructor made meaningful connections between homework and the in-class activity. Final exam test scores slightly improved from the pre-redesigned course in 2011 ( $77.7 \pm 4.7$ , range: 43–100) to the post-redesign in 2012 ( $81.6 \pm 4.4$ , range: 43–100).<sup>6</sup> Students taking a redesigned self-care and community Intermediate Pharmacy Practice Experiences (IPPE) course reported that the flipped-classroom model improved their verbal communication skills, provided opportunities to tackle and resolve unfamiliar problems, to work as part of a team, and to understand and be able to work effectively with culturally diverse individuals. The final grades over the course of a two-year course redesign improved with the number of "A" grades increasing from 21 prior to the redesign, to 32 and 52 after year one and two of the flipped-classroom methodology, respectively.<sup>7</sup> Flipped-classrooms are not only restricted to pharmacy practice

courses. Students responded positively to a pharmaceuticals course where traditional lectures were pre-recorded on video and posted to the University course management system again, preserving class time for active learning exercises.<sup>8</sup>

## Design

The objective of this voluntary faculty development program was to teach the faculty participants the concept of a flipped-classroom. The authors utilized several pedagogy tools and techniques during this one-hour faculty development including Prezi, audience response systems, individual reflection, and small- and large-group discussion. An outline for the program can be found in the [Table](#). The faculty were given two homework assignments that required them to watch a YouTube origami video on "How to make a paper crane" and a Prezi presentation on the concept of flipped-classrooms. All faculty were required to watch the crane video, construct their own crane, and send in a picture of it to the faculty facilitators by the deadline. The authors organized the faculty development in-class presentation using Prezi and an audience response system. The in-class component of the faculty development workshop began with a one-question quiz, "What is the name of the difficult fold in the YouTube video homework?" Once completed, the class viewed all of the paper cranes submitted and the faculty facilitators gave feedback on their design, esthetics and creativity. To increase "student" engagement, the class voted on the best paper crane and a prize was given to the winner ([Fig.](#)).

The next component of the in-class activity was to demonstrate how the homework could lay the groundwork for higher order learning during in-class activities. As an illustration of what would occur in a real flipped-classroom, the authors provided the faculty participants with a picture of a complex origami dragon and asked them to construct it using the basic skills and folds learned from the paper crane homework. This was for illustration purposes only. The

Table  
Timeline and script for flipped-class faculty development program

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### 1 Week prior to flipped-class faculty development program

E-mail sent to faculty providing pre-session homework: background videos and homework assignments (create origami paper crane)

### 1 Day prior to flipped-class faculty development program

Deadline for submission of origami paper crane

### Flipped-class faculty development program (1 hour)

Homework assessment—origami question

Review of submitted homework: evaluation, feedback, and voting for "Best Crane" prize

Review of model of advanced dragon crane and discussion of implications of flipped-classroom on providing for in-class application of knowledge

Discussion of flipped-classroom approach, advantages/disadvantages, and examples of flipped-classrooms

Individual reflection regarding potential use of flipped-classroom pedagogy

Small- and large-group discussion

Evaluation of faculty development program

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Fig. Origami crane homework finalists.

faculty participants did not actually construct the advanced origami dragon. This activity would allow the “teacher” to provide individual support to students or students to collaborate and help each other. Furthermore, this would also allow room to address more complicated concepts. The authors then discussed the main points of the homework (Prezi presentation) identifying key concepts of a flipped-classroom. Faculty discussed the time involved with the homework assignment and the advantages and disadvantages of the out-of-class homework. The authors gave examples of other methods of flipping including the use of study guides and guided questions.

The last portion of the faculty development class involved individual reflection, small-group discussions, and large-group discussions. All faculty were asked to take five minutes to answer the following question: “Think of a class you teach in now. If you were to flip this class, how would you do it?” They were then asked to break down into small groups and share ideas. Afterwards, each small group shared their ideas with the entire class. Faculty feedback of the faculty development session was assessed by asking faculty to rate the statement “This program increased my understanding of flipped-classes.” using a 5-point Likert scale (very strong, strong, somewhat strong, weak, and very weak). A second question was asked, “Based on what you learned today, do you intend to Flip My Class in the next academic year?” Responses included yes, no, or maybe.

## Results

Twenty of 34 (59%) CPP faculty completed the paper crane homework. Three of 20 (15%) submitted their homework after the deadline. Twenty-three faculty (68%) attended the “in-class” workshop. Overall, 78% of the

faculty correctly answered the quiz question: “What is the name of the difficult fold in the “How to Make A Paper Crane” video?” This question was included as a method of assessing knowledge gained from the homework assignment. At the conclusion of the program, 84% of the faculty stated that the faculty development workshop and homework very strongly or strongly increased their understanding of a flipped-classroom. Eighty-eight percent of the faculty stated that they would consider flipping one of their classes next year.

## Discussion

The goal of this faculty development model was to introduce and simulate a flipped-classroom using a “teach-the-teacher” type of training. Although the concept of a flipped-classroom is a popular concept in education, many faculty have likely not experienced it for themselves in their own educational training. The faculty facilitators themselves almost fell into the trap of a more passive learning strategy when designing this faculty development program. The original design of this faculty development program began with the idea of showing a TED talk video on the Khan Academy for 20 minutes, followed by a review of the literature on flipped-classrooms, showing examples of best practices and then conducting break out groups for discussion. As the faculty facilitators discussed this model, they realized that they would not have time for the group discussions and by showing videos and lecturing in class on content, they were achieving the opposite of the concept of a flipped-class. The authors almost fell victim to the very thing that derails most lectures, which is what they define as “content creep.” Content creep is the tendency to include

too much information and content into allotted lecture time with the intention of covering all the material.

The paper crane homework assignment was a sample activity that required faculty to watch a video and make their own crane. The authors chose the origami paper crane assignment because of the likely lack of familiarity with it by many of the faculty. The authors felt this lack of familiarity would mimic the experience many students have when they are learning new material within their coursework. In the class discussion, the faculty indicated that they liked the ability to pause the video and choose when and where they wanted to learn the content. This ability to accommodate different learning styles and preferences is a key advantage of the flipped-classroom. The paper crane activity was aimed at teaching the faculty basic skills (folds) that they would be able to apply to a more complex activity during class. The Prezi presentation on flipped-classrooms strictly covered content that provided the student with background before coming to class. Teachers should expect that class time in a flipped model may be noisy and chaotic. This is a sign of student engagement and discussion that is encouraged but requires the teacher to be an effective facilitator. The faculty development “class” was lively and fostered excellent discussion and debate on the merits and obstacles of a flipped-class. It also provided dedicated time for the “class” to reflect on their own courses and share ideas with colleagues on how they could flip one of their classes.

Flipped-classroom can be particularly attractive to today’s student learners, often referred to as “Millennials,” “Gen Ys,” or the “Net Generation” because the ability to access content anywhere satisfies their preferences for immediate, portable access to information.<sup>9</sup> In addition, Gen Ys tend to be experiential learners, preferring to be “doing” an activity rather than sitting through a lecture.<sup>9</sup> They also desire to learn and work in environments where students are allowed to help each other. The flipped-classroom model allows for increased classroom interaction that can include peer-to-peer activities.

A successful flipped-classroom model requires planning and accountability. A flipped-class can help to avoid “content creep” and promote student application of learned activities. Homework assignments need to be linked to some kind of assessment to increase chances of students completing the assignments. This may include in-class quizzes on the homework assignment, study guides that are graded for points, study questions that students must complete to hand in during class, extra points on the exam, etc. Flipped-classrooms do not necessarily need to include video-taped lectures. Flipping a class is just a tool to enhance a faculty member’s lecture. The teacher determines content and pedagogy and acts as a facilitator during class rather performing as the “Sage on the Stage.”<sup>5</sup> Flipped-classrooms are NOT necessarily suitable for all classes/courses; however, it can be a valuable pedagogical tool when used in the appropriate setting. Some challenges include increased student responsibility for their own

learning, increased faculty preparation and organization, faculty and student discomfort with technology, and lack of access to technology.

The flipped-classroom concept is being used in all areas of education including higher education. This teaching technique targets the higher levels of Bloom’s Taxonomy. ACPE has provided standards and guidance to colleges and schools of pharmacy on the importance of faculty engagement with innovative teaching methodologies. This faculty development program is a model to expose faculty to alternative teaching techniques which may help them “think outside the box” when teaching student pharmacists.

## Conclusion

Moving content outside of class time enabled the authors to achieve their goal of simulating a flipped-classroom. In the one-hour time frame, the authors were able to provide feedback on the homework, describe a more complex in-class assignment, discuss best practices, and facilitate individual and group discussions. This well-received faculty development model successfully sensitized faculty to the concept of a flipped-classroom by having them take on the role of the student.

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