Flipping the graduate classroom: Getting started lesson from the field

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ABSTRACT

This article describes the use of the flipped classroom pedagogical model in a graduate classroom at a small, private university. The purpose of the article is to share how and why the flipped model was implemented, and how its use might benefit faculty and faculty program administrators of graduate programs in which skills acquisition and skills-based components are a part of the curriculum. Acquiring skills requires real-world practice, increased instructional time and supportive facilitation; the flipped model is an enabling mechanism toward this instructional outcome.

Keywords: Flipped classroom, Pedagogy, Bloom's Taxonomy, Project-based learning, Formative Assessment

INTRODUCTION

The flipped classroom pedagogical model has gained traction in K-12 education as numerous reports and citations are available relative to its use. In December 2013, a Google search for "flipped classroom in K-12" yielded 8,010,000 entries and a Google Scholar search of same yielded 2,740 entries. At the postsecondary level, however, particularly at the graduate level, flipped teaching is not as prevalent, though it is growing in popularity. "The flipped classroom model is becoming increasingly popular in higher education institutions because of how it rearranges face-to-face instruction for professors and students, creating a more efficient and enriching use of class time" (NCM Horizon Report, 2014, p. 36).

Flipped teaching, flipped classroom and inverted classroom are synonymous terms referring to the teaching model that reverses or "flips" the traditional classroom flow. In flipped teaching, traditional lectures are viewed, read or consumed outside of the classroom, leaving in-class instructional time open for focused activities such as practice and hands-on work. In a flipped class, the goodly portion of the instructor's lecture that would normally occur in class moves to an outside of class activity and the out of class work or "homework" that is typically given to reinforce the lecture is done in class when students are with the professor and can learn from one another.

In 2007, the flipped classroom model was popularized by high school chemistry teachers Jonathan Bergmann and Aaron Sams. Bergmann and Sams had a specific concern about students who were involved in extracurricular activities and developed the method "as a response to having to re-teach when students were absent from class" (Tucker, 2012).

ABOUT THE PROGRAM AND COURSE

The graduate program in which the flipped model was implemented, is one that addresses the knowledge bases of leadership development, adult learning, and select leadership skills sets. The program is also project-based and underpinned by project-based learning (PBL). PBL is "a systematic teaching method that engages students in learning knowledge and skills through an extended inquiry process structured around complex, authentic questions and carefully designed products and tasks" (Markham, Larmer & Ravitz 2003, p.4) . By virtue of PBL, active classrooms, with real-world relevance orientations and cooperative learning elements were pillars of the program's content delivery prior to instituting the flipped model. The specific class that prompted the use of the flipped model, however, was much more skills based than other courses in the curriculum, with its content centering on areas such as coaching, mentoring, giving and receiving feedback, and listening behaviors. As such, more face-to-face class time was needed to devote to skills acquisition. "For the things we have to learn before we can do them, we learn by doing them" (Aristotle, Book 2, Ch.1). With this philosophy as a guide, an additional instructional strategy was needed to work in tandem with PBL that would also maximize instructional time to devote to learning by doing. The flipped model was the perfect mechanism for doing so.

Further, with both the knowledge bases of leadership and learning undergirding the program, the instructor found it ideal to run the classroom as a laboratory. As a result, employing the flipped approach had an added value for the students. Not only were they able to learn by way of the flipped pedagogical model as the teaching method, they were also able to learn about

the flipped approach as a real-world leadership tool for providing professional development and training in their workplaces.

GETTING STARTED WITH THE FLIP

To implement flipped teaching, a plan of action to determine which content to flip was needed. The first step of the action plan was answering some of the" key questions you should ask before you flip your class" (Bergmann, 2013). These questions are ones that flipped teaching originator Jonathan Bergmann poses to his audiences when he provides training for the flipped model. Some of Bergmann's questions follow:

- What is the best use of your face-to-face class time?
- What is one lesson you teach that is perfect for flipping?
- In a flip, what will you do in your class now that you are not lecturing?
- Will you need additional resources since you will now have more time to do in-class higher order thinking and problem solving as result of the extra time?
- Will you completely flip your class or just selected lessons?

Bergmann's questions with the author's answers to the questions can be found in Chart 1 (Appendix).

The second step of the action plan was looking at the course goals and objectives of individual class sessions within the framework of Bloom's Taxonomy of Learning Objectives.

BLOOM'S TAXONOMY AND THE FLIPPED MODEL

"Bloom's Taxonomy of Learning Objectives is used to define how well a skill or concept is learned or mastered" (McNeill, n.d.). "Benjamin Bloom's Taxonomy of Educational Objectives, Cognitive Domain was created in 1965 and categorizes cognitive learning into six major divisions; each upper division subsumes the previous lower ones. The divisions are knowledge, comprehension, application, analysis, synthesis and evaluation" (Ornstein & Hunkins, 2004, p. 285). Bloom's Taxonomy (Bloom's) is often represented in a pyramid and was revised in the 1990's into the following categories: remembering, understanding, applying, analyzing, evaluating and creating as illustrated in Figure 1 (Appendix). Bloom's is an excellent framework for making decisions regarding the specific course content to flip. An explicit goal of Bloom's is moving class conversation and work beyond the remembering and understanding levels of the pyramid to the higher levels of applying, analyzing, evaluating, and creating. In course planning, the instructor recognized that addressing content at the applying and higher levels of Bloom's was vital for skills acquisition, however, doing so would be given short shrift without some type of intentional intervention because addressing course content at the lower levels of Bloom's (remembering and understanding) would consume valuable face-to-face classroom time. By looking at objectives of individual class sessions through the lens of the Bloom's framework, it became easy to classify the objectives according to the various levels of the taxonomy and therefore target the specific content to be flipped. As an example, when teaching the employee coaching skills unit, content that centered on definition(s) of coaching, its history, various models, and comparison and contrast of coaching to mentoring and counseling were moved outside of class. This content was indeed important, but could be classified at the remembering and understanding levels of Bloom's, and as a result was flipped. With the extra

class time available due to this content being moved outside of class, more face-to-face class time was available to devote to actual coaching practice between and among students with the instructor present. The instructor could see what students were doing, how they approached the assignments (e.g. during role plays and simulations), what they were doing correctly, what misconceptions they might have had, and could, in turn, provide instruction and just-in-time feedback in real-time while they were learning and unpacking the material. The flipped model truly moves the instructor from "sage on the stage" to "guide on the side." Flipped teaching certainly makes for a noisy and busy classroom, however, the active nature of a flipped class speaks to student engagement and the increased likelihood that the learning is "sticky."

FORMATIVE ASSESSMENT OF FLIPPED CONTENT

A quiz, as a formative assessment, is essential to ensuring a successful flipped class, because it is imperative to check for understanding of the "lecture" content moved outside of class. Employing the flipped model is of no positive consequence if students do not grasp the flipped content. An assessment mechanism that is accessible on a mobile device (e.g. on Socrative or I-Mobile) is preferred by the author. However, a classroom response system (clickers), the testing/quiz feature of a learning management system (LMS) such as Blackboard, a Scantron quiz (if results can be scored instantly), or even a paper and pencil quiz that can be scored quickly will work well for assessing learning of material that has been flipped outside of class. If quiz results are not at an adequate level and therefore indicate the need, a portion of class time should be redirected and devoted to making sure foundational elements of the outside of class lecture content are understood.

It is a common misconception that lectures do not exist in the flipped classroom. Lectures are sometimes warranted in a flipped class, however, when lectures occur, they are focused, explanatory and connected to content at the application or higher levels of Bloom's and not at the understanding and remembering levels. If, after flipping, it is found that there is still a goodly portion of class time devoted to lectures at the remembering and understanding levels of Bloom's, it suggests that the quiz for understanding might need to be revised and/or the content of the "flipped" portion of the class might need to be reconsidered. The goal is to have more class time to devote to working at the application or higher levels of Bloom's, while ensuring that content at the remembering and understanding level is addressed and internalized by the learners.

Sample quiz questions from the coaching unit

Quiz questions relative to the flipped content for the coaching unit were multiple choice and short answer. Sample questions follow:

- What is the difference between a workplace coach and a workplace mentor?
- What are the qualifications for coaching versus the qualifications for counseling?
- Define coaching.
- Compare and contrast, coaching and mentoring and counseling.

Note that each quiz question centers on content at the remembering and understanding levels of Bloom's, and each is important and essential content knowledge for graduate level students in the discipline. For example, a student who is unable to distinguish the differences

between the need for coaching versus the need for counseling can do great harm in the workplace. The flipped content is still vital, but it can be covered outside of class and assessed with a quiz to check for understanding. After understanding is established through requisite quiz results, classroom unpacking of material at the application and higher levels of Bloom's can commence.

Technology for the flip

Many voices in the flipped literature focus heavily on producing and selecting videos for the flipped content. This author submits that flipped teaching is not about the technology, or simply videotaping all lectures and moving those lectures outside of class. Instead, flipped teaching is about carefully determining and selecting which content to flip (targeting the remembering and understanding levels of Bloom's) and which content to cover in class (at the applying, analyzing, evaluating and creating levels of Bloom's). PowerPoint slides, with or without voice over, videotaped lecture and reading materials, can all be used as methods for moving the remembering and understanding "lecture" content to an outside of class consumable. This material can then, in turn, be reviewed by students on their own when needed. This on-going, as needed access to material further reinforces the iterative and reflective nature of learning. The aim is preserving precious face-to-face class time for working with course material at the application and higher levels of Bloom's Taxonomy.

CONCLUSION

The educational landscape is changing. Traditional content delivery methods such as lecture have competition now as other pedagogical approaches are available for use. Flipped teaching is a pedagogical model that is emerging in higher education, as "many universities and colleges have embraced this approach, enabling students to spend valuable class time immersed in hands-on activities that often demonstrate the real-world applications of the subject they are learning" (NCM Horizon Report, 2013, p. 36). Implementing flipped teaching requires deliberate up front work that includes determining whether to flip the whole class or selected lessons, reviewing class content through a Bloom's Taxonomy lens, incorporating formative assessment methods to check for understanding of flipped content, and using in class time for active engagement with course material. While flipped teaching has taken off in K-12 education, it is important to recognize that its tenets are also in concert with adult learning principles relative to hands-on, real-world, and relevant learning experiences. As such, this powerful pedagogical approach is worthy of consideration for content delivery in graduate programs.

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APPENDIX

Chart 1 Bergmann's questions with author's answers

1. What is the best use of your face-to-face class time?

   Guiding students individually and in groups as they "practice" and learn hands-on with the course material.

2. What is the one lesson you teach this is perfect for flipping?

Workplace coaching, listening behaviors, and giving and receiving feedback (skills-based content).

3. In a flip, what will you do in your class now that you are not lecturing?

   Guide students individually and in groups as they "practice" and learn hands-on with the material.

4. Will you need additional resources since you will now have more time to do in-class higher order thinking and problem-solving as result of the extra time?

   Yes. Will need more role-play scenarios and simulations. Will need time to confer with

   stakeholders for real-world situations.

5. Will you completely flip your class or just selected lessons?

Select lessons in the beginning.

Figure 1: Bloom's Taxonomy (revised)