

Chapter 14

Student Rates of Outside Preparation before Class Discussion of New Course Topics: A Case Study of a Flipped Classroom

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ABSTRACT

The case study in this chapter explores the author's experience in flipping introduction of new course topics from in-class lectures to students' coverage outside the classroom. The author shares related techniques and an analysis of student access rates to materials on new course topics. The case takes an initial step to answer one question often posed by instructors concerned about the flipped classroom approach: Is it reasonable to expect students to access course content on new topics before an instructor-led introduction lecture? The materials reviewed were online narrated PowerPoint slides accessed prior to the initial class discussion on new topics. Data reviewed by the author shows an average access rate of 91% for 149 students in a junior-level business course. Limitations of the analysis and future instructional plans are discussed.

INTRODUCTION

The term flipped classroom refers to students working with new course concepts outside the classroom prior to in-class learning with an instructor. The students share responsibility with

the instructor to initiate the learning process. The instructor provides introduction materials and related learning tasks. Students are responsible to read the materials and complete tasks on their own time. Thus, initial exposure to new material occurs early in the learning sequence. This allows more time for deeper learning activities during class sessions.

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Versions of the flipped classroom have been in use for over a decade. For example, in their classic book, *Effective Grading: A tools for learning and assessment*, Walvoord and Anderson (1998) encouraged a system of assignments on new concepts before class to motivate students to work on new topics outside the classroom as a first step in the learning process. They proposed outside work be followed by classroom work guided by the instructor on learning activities such as problems, cases and analysis. In an “inverted” economics course, students were given a reading assignment (Lage, Platt & Treglia, 2000) on a new topic with related resources available at the online homepage for the course. The subsequent class session began with the instructor asking if anyone had questions on the new topic which resulted in short explanations by the instructor. The remaining class time was used for higher-order learning activities. For example, a simple experiment involved students bidding on a can of coke. The data was graphed to demonstrate a demand curve. Other activities involved more complex experiments, worksheets and review questions. Lage, Platt & Treglia (2000) examined student perceptions of the inverted classroom. On a five point scale (1 = strongly disagree; 5 = strongly agree) students preferred the new format. The mean response to the following statement: “I prefer this classroom format to a ‘traditional’ lecture format” was 3.9 for sophomore students.

In this chapter the goal is to explain an important and favorable outcome relative to students’ early involvement with new course topics, that is, student access rates to new material before in-class discussion. Consistent with the case study method to illustrate a topic within an evaluation (Yin, 1994), this case describes techniques and processes in a “flipped classroom” and evaluates student participation in the process. The relationship of the flipped classroom to Bloom’s revised taxonomy is also discussed along with underlying theories.

THEORETICAL BASIS

Bloom’s Taxonomy

Bloom’s revised taxonomy presents a hierarchy of cognitive learning domains (Bloom, 1956; Anderson, Krathwohl et al., 2001). The lower level learning domains are remember, understand and apply and have to do with memorizing facts, interpreting meaning and relating knowledge to new situations. Higher learning domains are analyze, evaluate and create, and involve comparing and breaking down information, judging based on criteria and designing or combining elements into new products. Bloom’s hierarchy serves as a framework of the different types of learning in a flipped classroom approach. Students’ initial access to course materials on new topics outside the classroom represents the lower-order learning domains. Outside the classroom students become familiar with definitions to comprehend meanings and consider the use of concepts in the real world. Students’ questions can be clarified during the opening minutes of the class session. A large portion of the class time can then be used in activities to analyze assumptions, solve problems, debate concept logic or ethical implications and formulate or create new designs of the concept.

A key focus of the flipped classroom is to place lower-order learning processes outside the classroom to reserve classroom time for higher-order learning activities. This approach asks instructors to go beyond covering the content and to prepare deeper learning experiences for students during class sessions. Classroom activities may then focus on course or program goals to prepare students to effectively use the knowledge learned. These ideas tie to a mantra of the assessment literature to focus attention on learning goals. Goals should involve explicit statements such as: “by the end of this course/certificate/major we want the students to know and be able to do”... (*actions and behaviors*) ...to reflect the learning experiences of the course/program (Walvoord & Anderson, 1998, p.7).

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