Flipping the Classroom with Storyline

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The Flipped Classroom

Many faculty express interest in "flipping" their classrooms. This is not a new concept, but with the increased use of online technology, it has become more feasible in recent years. In this article, flipping the classroom refers to taking the traditional lecture out of the classroom and replacing class time with activities that are more akin to homework. Instead of listening to the lecture in class and doing homework after class, the students view the lecture before class and complete homework or engage in other activities during class. In this article I will discuss ways to move lecture content out of the classroom and put it online using Storyline software.

Motivation to Prepare

The first step in our learning model process is to prepare. When students prepare for class, they qualify themselves for more in-depth understanding. In the flipped classroom, preparation is essential. Students must be motivated to prepare, or class activities will fall flat. If you are going to flip your classroom, make sure you motivate your students to prepare. Incentives might include a pre-class online quiz, discussion board or survey, or an in-class quiz or presentation. Whichever method is used, students should not want to risk embarrassment for their lack of preparation before class.

Deeper Learning

The main purpose of flipping the classroom is to deepen student learning. Bloom's Taxonomy (see figure 1) presents a hierarchy of learning depth. It begins with the shallowest learning – remembering – and successively moves through deeper and deeper levels of learning. The traditional lecture is usually operating at the shallow end of the spectrum – remembering and understanding. Homework, problem-solving, group work, discussion, debates, and other in-class activities often go deeper, into areas of applying what is being learned and being able to analyze and evaluate information. Team projects might involve creating something, which is considered the deepest and most meaningful form of learning. The flipped classroom exposes students to the more basic levels of learning before class and allows students to spend in-class time in deeper, more meaningful activities.
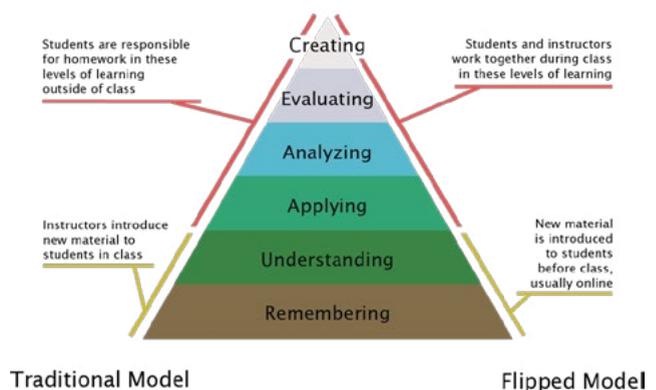

Figure 1. Using Bloom's Taxonomy to contrast the Traditional to the Flipped Model

Storyline Software

Using Storyline software is a good method of moving lecture content into an online format. Storyline has the following features:

- Slide-oriented, with animation (like PowerPoint)
- Multimedia – text, pictures, sound, video, links, timeline, animation
- Interactive – drag-and-drop, hot-spot, sliders, dials, quizzing
- Online – link to published HTML5 output

See https://articulate.com/p/storyline-3 for more specific information about Storyline.

Storyline Example – The Nursing Process

The easiest way to understand what Storyline can do is to look at some examples. The Nursing Process is a Storyline created for the Department of Nursing and professor Tana Hunter, who served as the content expert. You can see it at http://bit.ly/nursingProcess. Once there you will see pictures and hear narration describing the five steps of the nursing process. Early in the presentation students answer a question about a hypothetical situation. Later, on the slide called "Sorting John's Data," they drag-and-drop given conditions into the correct categories. Questions and sorting activities cause students to stop and think about what they are learning to heighten their interest. On the slide "Clustering Data," students learn about the concept map, which is a tool students will use throughout their entire nursing curriculum. Remember, all this is happening before class. In class, the instructor will build upon these basics and take a deeper dive, helping the students apply the nursing process.

Storyline Interactivities – Quantitative Reasoning Online Textbook

Recently Danae Romrell and colleagues in the Department of Mathematics, Elaine Wagner and Garrett Saunders, wrote an online, HTML-based textbook for the campus and online FDMAT 108 courses. This new textbook will save students and their parents a lot of money – but that is a story for another time. Danae wanted to have "interactivities" scattered throughout each chapter of the book. The interactivities would stop students, wake them up, have them think about what they are learning, and answer some questions to prove their understanding. You can see Lesson 1 of the book at http://bit.ly/FDMAT108lesson1. In this lesson there are four interactivities, characterized by a light gray background with a blue-lined border. The four interactivities are:

1. Describe the five steps of the quantitative reasoning process,
2. Test the reader's knowledge about whether given assumptions are appropriate or not,
3. Test the reader's ability to calculate the combined annual income in a hypothetical situation, and
4. Display a slider that the reader can adjust to find the break-even point.

The online textbook has other great features, such as an introductory video that tells an interesting story that is applicable to students. The story continues as a contextual thread throughout the chapter, and the interactivities relate to elements of the story. Students read the chapter before coming to class, leaving classroom time for diving into problem-solving exercises.

Storyline – Financial Model Building

My final example features a Financial Forecasting module created using Storyline for the Integrated Business Core (IBC) course in the Department of Business Management. You can see it for yourself at http://bit.ly/IBCfinancial. The module presents six videos (three to five minutes each) created by Bill Crawford. The videos teach students step-by-step how to build a financial forecast model in Excel, which they will need to start their IBC businesses. After each video, students build their own financial model in Excel, applying what they just learned. Students then answer questions that test if their model is working right. If their answers are correct, they can then proceed to the next video. By the time students complete

the module (in one to two hours), they have their own Excel financial forecasting model. Students then take a short quiz in I-Learn. If their model is correct, it will only take them a few minutes. Remember, this is all taking place outside of class. Class time is then spent completing group-based activities.

We created eight more modules for IBC following the same pattern and covering additional topics, such as forecasting net income, balance sheet, reasonable assumptions, variance analysis, ratio analysis, and marketing. Bill wrote the following about these Storyline modules:

> "Storyline allowed IBC to help students grasp the key elements of financial modeling without taking instructor time in the classroom. Storyline is better than videos alone because you can introduce concepts on videos and then allow students to practice before they move to the next topic. IBC finance improved dramatically because of adding this capability. Before Storyline, it was common for students to struggle to grasp even the most basic financial concepts. Afterward, nearly every student who did the storyline assignments had no trouble with the course outcomes. It also allowed more instructors to teach IBC, because they didn't have to be finance specialists to teach the course." (Bill Crawford, Business Department)

Option 1 is the most common route, because Storyline creation, although enjoyable and relatively easy, is time-consuming – and time is usually in short supply for faculty. The Nursing and IBC examples discussed above are examples of the first option. Even though someone else creates the Storylines, you still would be very involved in providing the content and accuracy. For example, Bill Crawford provided the videos and the questions and answers that went along with each video.

The Math example discussed above started with Option 1 and finished with Option 2. At first the CCD created the interactivities. Shortly into the project, the Math department purchased a copy of Storyline 3, and Danae Romrell jointly created interactivities with the CCD. By the end of the project Danae was exclusively creating all of the interactivities. The advantage of content experts creating their own Storylines is that they have a complete understanding of the subject they are trying to convey. If a

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Creating Your Own Storylines

If you decide to flip your classroom by using Storyline, you have two options:

1. Work with service organizations such as Campus Curriculum Development (CCD) or the Faculty Technology Center (FTC). They will create the Storyline and you will be the content expert, providing the script and oversight of content accuracy.
2. Learn how to use Storyline yourself and be both the content expert and the Storyline creator.

department decides to buy Storyline, it should make sure it gets the Church's significant discount by using a code that can be obtained from CCD or FTC. The cost of Storyline is around $1,400, but with the discount the cost is around $420. An alternative to buying the software would be to use computers in the CCD or FTC that have Storyline software loaded on them.

If you would like to further explore flipping the classroom using Storyline, or for any other curricular development in your courses, contact the CCD. See http://www.byui.edu/campus-curriculum-development ❋