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FLIPPED CLASSROOM MODEL

Abstract. Flipped classroom is an active, student-centered approach that was formed to increase the quality of period within class. Generally, this approach whose applications are done mostly in Physical Sciences, also attracts the attention of educators and researchers in different disciplines recently. Flipped classroom learning which wide-spreads rapidly in the world, is not well recognized in our country. That is why the aim of study is to attract attention to its potential in education field and provide to make it recognize more by educators and researchers. With this aim, in the study what flipped classroom approach is, flipped classroom technology models, its advantages and limitations were explained

Keywords: flipped learning, flipped classroom, new approaches.

A **flipped classroom** is an instructional strategy and a type of blended learning that reverses the traditional learning environment by delivering instructional content, often online, outside of the classroom. It moves activities, including those that may have traditionally been considered homework, into the classroom. In a flipped classroom, students watch online lectures, collaborate in online discussions, or carry out research at home while engaging in concepts in the classroom with the guidance of a mentor.

In the traditional model of classroom instruction, the teacher is typically the central focus of a lesson and the primary disseminator of information during the class period. The teacher responds to questions while students defer directly to the teacher for guidance and feedback. In a classroom with a traditional style of instruction, individual lessons may be focused on an explanation of content utilizing a lecture-style. Student engagement in the traditional model may be limited to activities in which students work independently or in small groups on an application task designed by the teacher. Class discussions are typically centered on the teacher, who controls the flow of the conversation [1]. Typically, this pattern of teaching also involves giving students the task of reading from a textbook or practicing a concept by working on a problem set, for example, outside school [2].

The flipped classroom intentionally shifts instruction to a learner-centered model in which class time explores topics in greater depth and creates meaningful learning opportunities, while educational technologies such as online videos are used to 'deliver content' outside of the classroom. In a flipped classroom, 'content delivery' may take a variety of forms. Often, video lessons prepared by the teacher or third parties are used to deliver content, although online collaborative discussions, digital research, and text readings may be used. It has been shown that the ideal length of the video lesson to be is eight to twelve minutes [3, 4, 5].

Flipped classrooms also redefine in-class activities. In-class lessons accompanying flipped classroom may include activity learning or more traditional homework problems, among other practices, to engage students in the content. Class activities vary but may include: using math manipulatives and emerging mathematical technologies, in-depth laboratory experiments, original document analysis, debate or speech presentation, current event discussions, peer reviewing, project-based learning, and skill development or concept practice [6, 7]. Because these types of active learning allow for highly differentiated instruction [8], more time can be spent in class on higher-order thinking skills such as problem-finding, collaboration, design and problem solving as students tackle difficult problems, work in groups, research, and construct knowledge with the help of their teacher and peers [9].

A teacher's interaction with students in a flipped classroom can be more personalized and less didactic, and students are actively involved in knowledge acquisition and construction as they participate in and evaluate their learning [3, 10, 11].

A flipped class is one that inverts the typical cycle of content acquisition and application so that:

- students gain necessary knowledge before class, and;

• instructors guide students to actively and interactively clarify and apply that knowledge during class.

Like the best classes have always done, this approach supports instructors playing their most important role of guiding their students to deeper thinking and higher levels of application. A flipped class keeps student learning at the center of teaching.

1.1.1 Why are instructors flipping their class?

Students learn more deeply.

As a result of students taking responsibility, interacting meaningfully and often with their instructor and peers, and getting and giving frequent feedback, they acquire a deeper understanding of the content and how to use it.

Students are more active participants in learning.

The student role shifts from passive recipient to active constructor of knowledge, giving them opportunities to practice using the intellectual tools of the discipline.

Interaction increases and students learn from one another.

Students work together applying course concepts with guidance from the instructor. This increased interaction helps to create a learning community that encourages them to build knowledge together inside and outside the classroom.

Instructors and students get more feedback.

With more opportunities for students to apply their knowledge and therefore demonstrate their ability to use it, gaps in their understanding become visible to both themselves and the instructor.

1.1.2 How should teachers flip their class?

This guide is designed to walk you through the steps of flipping a single class; the process is scalable for flipping portions of each unit or an entire course. One of the major factors in course redesign is the time it takes to do it well.

1.1.3 Step 1: Identify where the flipped classroom model makes the most sense for your course

The following questions may help you identify a good place to start, whether you have designed your course around learning outcomes or by units:

• In which class sessions do you currently have an in-class activity that you rarely have time to complete during class and requires the students to apply their knowledge and skills?

• What concepts or topics do students struggle the most to understand, based on exam scores and/or assignment grades?

• On what topics would students benefit from the opportunity to apply concepts under your expert guidance in the classroom?

UT instructors share how they adapted to the new roles they play within the classroom and helped students adjust to their new roles within the flipped class.

1.1.4 Step 2: Spend class time engaging students in application activities with feedback

The crux of the issue is figuring out for your class how class time could be repurposed in ways that provide students with an appropriate level of challenge while leveraging your expertise as a coach or guide. There are many possibilities for infusing

a class with collaborative learning experiences. Ultimately, it comes down to finding an approach that works best for your students and your course content.

UT instructors share how they developed in-class engagement structures that leverages the power of the flipped class.

1.1.5 Step 3: Clarify connections between inside and outside of class learning

The point of the Flipped Learning model is to move the application-oriented "homework" into the classroom and to move the "lecture" to before class. Here are a few questions to get you started in this process:

- What do I want my students to know and be able to do as result of completing this sequence of the course? How does it fit into the bigger picture of the unit and course?
- What part of the current «homework assignment» could be moved inside of class to help students practice applying the content? What in-class learning activity is being rushed because there is currently not enough time to do it well?
- What practice do students need inside of class to prepare them for the larger assignment that will be completed after class? Will students make the connection between what is happening inside of class and the assignment they are working on after class?
- What content do students need to know before class to successfully engage in the learning activity during class?

The after-class portion may consist of a wide variety of activities including completing the work started in class or reading deeper about the topic or working together on a larger assignment that extends several class periods or practicing on one's own. Keep in mind that the after-class portion from the last class occurs at the same time as the before-class portion of the next class, so helping students manage the workload is important.

UT instructors share how their course learning outcomes helped them make connections between in-class and out-of-class engagement.

1.1.6 Step 4: Adapt your materials for students to acquire course content in preparation of class

The dynamic and active environment that is created within the flipped classroom, means that it is essential for students to come prepared for class. Once you have a clear idea of how students will be asked to apply their knowledge and skills during class, begin considering what students will need to read or view in advance. While online video content is associated with the Flipped classroom model, one can flip a class by repurposing traditional materials. Some common ways students prepare for class include:

- Reading materials (e.g., textbook chapters or relevant articles);
- Online video and audio content (e.g., podcasts, videos, online micro-lectures, simulations, or demonstrations).

Keep it simple at first by either relying on your current resources or using existing online content rather than creating your own. If you have time, explore what

content currently exists online that may help you supplement your resources. Whatever path you take, make sure that you:

- Hold students accountable for completing the pre-class assignment, and;
- Provide students a way to pose questions about the content they are learning outside of class.

UT instructors explain how they developed structures for students to engage in course content before class by either creating their own materials or curating what already exists and placing it online.

1.1.7 Step 5: Extend learning beyond class through individual and collaborative practice

How will the content and skills learned before and during this class prepare students for extending their learning after class (e.g. finishing the problem set, starting work on a project or a portion of an assignment, building upon what was begun in class to delve deeper into the topic, practicing alone or collaborating with peers, etc.)?

Students gain experience applying course content during class time, but they may also need additional practice after class. Extending what happens inside the class to outside the class is a crucial step for students to gain mastery and meet the learning outcome. Some ideas for deepening student understanding include:

- Use discussion boards or academic social media to elaborate on ideas developed inside class.
- Present additional problems (on Canvas, course website, or from the textbook) for students to gain further practice on their own outside of class. Online assessment systems can be used to provide immediate feedback to students.
- Create assignments that require students to take the skills and knowledge developed in class and apply it in a new way or to a new situation not covered in class.
- Assign additional readings that further expands upon the concepts discussed in class.
- Encourage students to create informal learning groups.
- Develop a peer-led undergraduate study where students come together once a week to work additional problems that expand upon the concepts being learned in class.

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