

Flipped Classroom-An Innovative Approach

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Abstract

Flipped class room is a new innovative teaching learning method where strategy of teaching is reversed .It involves the use of technology. Here content is provided to students in form videos, power point, e-text before teaching and assignment are performed in class with the help of teachers and peers in collaborative manner. It is a blended form of learning which and is a learner centered approach .So in the present era of technology the need of hour is to transform traditional method of learning to flipped class room teaching and learning. The paper discusses the concept and historical background of flipped class room. It also discusses models, technological tools required and advantages of flipped classroom, challenges posed by flipped classroom and methods of implementing flipped classroom technology.

Keywords: Flipped classroom, Models, Tools.

Introduction

Flipped Classroom is a method of teaching which is learner centered and beneficial for teachers and students. As the name suggests the teaching strategy is reversed here. Instead of providing the content related to topic in class the content is given to students in form of videos, power points or e-text and assignments are provided in class which are performed in with the help of teachers, peers and in collaborative manner. Flipped classroom are implemented with the help of technological tools which includes software tools and internet. Here classroom time is managed fruitfully for enhancing the learning skills of student. Teacher can give more time to individual students to address their problems. More time can

be given to explore the concepts and their practical applications. Flipped classroom is a concept which is beneficial for education system globally.

Concept of Flipped Classroom

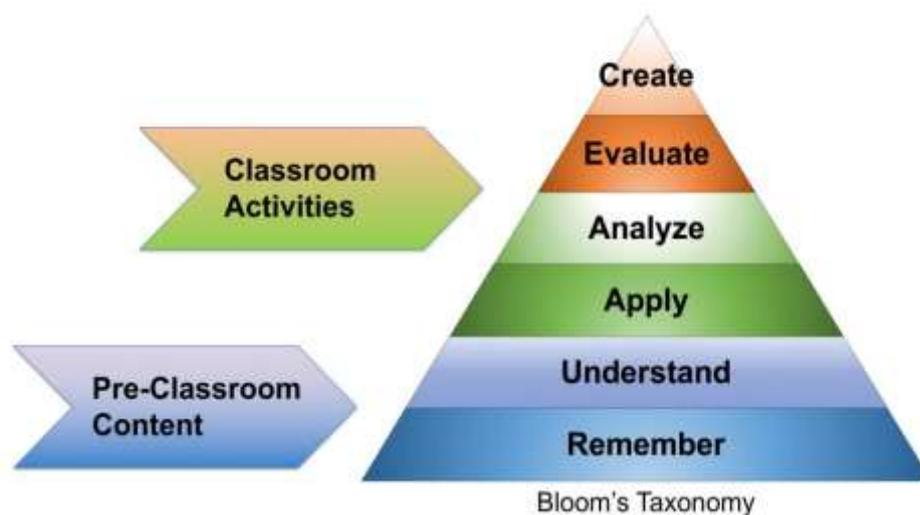
As the word flipping means reversing or inverting so the flipped classroom means reversing or inverting the traditional classroom activities. As we all are aware that teacher teaches new concepts in class, students take notes and then assignments are given as homework. Here in flipped class room the concept is totally reversed. The students here are introduced to learning the concepts at home or outside the class before the class and the class time is utilized for assignment or problem solving with the help of instructors or peers through discussions and problem solving activities.

So flipped class room concept involves the concept-

- Teaching at Home
- Working at School

In flipped classroom the role of instructor is to guide the students to enhance their thinking at application level. The main motto of flipped class room is to make learning student centered.

Framing Flipped Classroom model using Bloom's Revised Taxonomy



According to Bloom's revised taxonomy, 2001 students undergo the lower level of cognitive task like acquisition of knowledge and comprehension outside the class and higher form of cognitive task like application, analysis, synthesis, and/or evaluation in the class with the help

and support of instructors or peers in the class. As this model is in contrast with traditional model where students first acquire and comprehend knowledge in classrooms first through lecture and then assimilate their knowledge to perform the assignments at home. This is what the term flipped classroom means.

History of Flipped classroom

In 2004 flipped teaching was initiated started by two chemistry teachers Jonathan Bergmann and Aaron Sams at Woodland Park high school in Colorado, USA. They were working in rural settings where students were more involved in sports and other activities. And missed a lot of their class time .Other schools in district were very far off. So In order to cover the studies and class room lectures that were missed by students they recorded the lectures and posted them online. The students who missed the class could not be benefitted from it. Bergman and Sam found a solution in a technology magazine. They found a software that could record a power point slide show with voice and notes. In 2007 they began to record all their lectures and converted them to videopresentation . Then they decided to use the technique for all their classes.They asked the students to watch presentation before school and in class the student would discuss it, experiment with the material and receive assistance from their teachers in doing their tasks.Gradual students all over the world started watching their videos, asking questions and the concept of flipped classroom came to existence.

Pillars of Flipped Classroom-There are four main aspects or characteristics of flipped classroom which are as follows

F-Flexible Environment-It provides flexibility in learning environment. He/She can learn at any place and at any time .Flipped learning also provides a variety of learning modes so as to support learners for either group work or independent study.

L-Learning Culture: Culture of learning is totally changed in flipped classroom.In traditional classroom knowledge is provided by teacher. The approach of teaching is teacher centered whereas in flipped classroom teaching is learner centered teacher centered.Here class time is utilized in exploring topics in greater depth and creating new opportunities for learning.So here students are involved in knowledge construction in knowledge construction as they participate in learning activities and their learning is evaluated.

I-Intentional Content: Flipped classroom educators works to provide fluency and develop cognitive understanding of students. In order to adopt student centered approach, active learning strategies, grade level and subject matter intentional content is used by the teachers.

P-Professional Educator: Educators adopt are reflective approach, they interact with each other to improve their instruction, accept constructive criticism, and tolerate controlled chaos in their classrooms. Whereas Professional Educators does not play prominent roles in a flipped classroom. They just let Flipped Learning to occur in classroom.

Different Models of flipped classroom

1. **Standard Inverted Classroom:** Here students are provided the content in the form of videos or audios or reading material which is relevant to next days class content. During the class time they practice what they have learnt with the help of instructor. Instructor provide each student separate learning time.
2. **Discussion-Oriented Flipped Classroom:** This model is more useful for subjects like history, art or English. Here the matter relevant to class is provided by instructors in the form of lecture videos or any relevant video via TED Talks, you tube or any other resource and class time is utilized in debates, discussions or exploring the topic.
3. **Demonstration-Focused Flipped Classroom:** This model is useful for science subjects like chemistry, physics and mathematics where learners require to remember and repeat activities. Here video demonstration can be helpful which can be rewind and re-watched. Various screen recording software (Screencast-O-Matic, Camtasia, CamStudio, Ezvid,, Tinytake) are used by teachers which are used to demonstrate activities that student can learn at his own pace.
4. **Faux-Flipped Classroom:** Faux flipped classroom model allows students to watch lecture video even in class. This gives students the facility of reviewing materials at their own pace. Here the teacher helps the students individually and supports them according to their needs.
5. **Group-Based Flipped Classroom:** Allows students to work in group and learn from one another. Lecture videos and other resources shared before class. When students come to class, they work together in a team on the assignment provided in a similar manner as done in a collaborative learning model. This model inspires students to learn from one another. Here students not only learns the correct answers but also develop ability of explanation. He/she explain his peer the reason behind the answer being true.

6. **Virtual Flipped Classroom:** It is an online transaction flipped classroom model. Some University and College teachers share video which are viewed by students. They give and collect assignment via online learning management systems (MOODLE, Google Classroom, Edmodo) .In this model students are required to attend office hours or other regularly scheduled time for brief one-on-one instruction as per the need of student
7. **Flipping The Teacher:** Here classroom activities are need to begin or end with teacher. All the video created for a flipped classroom doesn't have to begin and end with the teacher. Students can make use of video demonstrate proficiency.Students can be asked to create a film or video on a new subject or skills. Here the students teach the teacher. That's why the model is named –“Flipping the Teacher”.

Technological Tools for Flipped Classroom-As technology is the need of flipped classroom various tools are required for different tasks like video recording devices and softwares , smart boards, screen casting software etc. For implementation of flipped classroom technological integration is a key component. The main technological tools required are as follows

Video Creation Tools: Differenttypes of tools are used for video creation. Many tools are available free for on-line. Some tools are to be purchased online. Some commonly used and popular tools are as below –

- Screen-Cast-O-Matic,
- Camtasia PC,
- TechSmith Relay,
- Office Mix,
- Adobe Presenter.

Video Hosting Tools: After creation videos should be placed online for student's access There are several sites to host video online. The most popular video hosting site used globally by teachers, students and other professionalsis YouTube .Some other video hosting sites are;

- YouTube,
- TeacherTube,
- Screencast.com,
- Acclaim,
- GoogleDrive.

Video Interaction Tools: The tools which provide teachers to access some information about students. For example which student watched a particular lecture video, how long he watched that video, how he was able to answer the questions in the video. Some of the popular and commonly used video interaction tools are as below;

- EduCanon,
- EdPuzzle,
- Zaption,
- Office Mix,
- Verso,
- TechSmith Relay,
- Adobe Presenter,
- Google Apps for Ed

Learning Management System: Instead of sending videos to hosting site, they can be accessed by using learning management system (LMS). LMS are not only broadcast videos as video hosting sites they enable interaction with students. Some of the important LMS tools are:

- Moodle,
- Sakai,
- Blackboard,
- VersoApp,
- Schoology,
- Canvas,
- My Big Campus,
- Haiku Learning,
- Google Classroom

Advantages of Using Flipped Classroom Technologies

In flipped classroom technology there is a total shift in traditional classroom teaching . Its purpose is to utilizing classroom time to enhance learning skills of students, encouraging them to learn collaboratively, instructors can solve the problem of students individually and many more. Major advantages are listed below

1. Deep Understanding of Content

As the student learn by interaction, debating and working himself collaboratively with peers and help of instructor he/ she acquires deeper understanding of the content taught and the practical applicability of content.

2. Active Participation of Learner

As in flipped classroom individual has to participate actively in class instead of being a passive listener in traditional classroom. Here he himself is a constructor of knowledge and hence become an active learner.

3. Increased Interaction

In flipped classroom learners interact in group and apply concepts taught with help and guidance from the instructor. This interaction helps them to build a learning community that facilitates them to construct knowledge collaboratively inside and outside the class.

4. Getting instant feedback

As student work in classroom, their ability to understand and apply the concept can be judged by the instructor as well as the student. So he gets instant feedback of his understanding and application of knowledge. Instructor can help to enhance the capability of student through feedback.

5. Creation of Learners Working Space

It encourages students for being self responsible for learning. He can revisit the concepts which are not properly understood and can clarify his misconceptions.

6. Active Engagement of Learners

As the class time is utilized in construction of knowledge and collaborative learning, Students interact with instructors to solve their problems. Students are actively engaged in the classroom time.

7. Utilising Class time fruitfully

As the content is provided to students outside the class. The class time may be utilised fruitfully in learning activities. Faculty members have more time to interact with students in clarifying their doubts and interacting with them.

8. Challenges posed by Flipped Classroom

Increased Work load of Instructor-Here the instructor has to spend more time and efforts on creation of video and other resources. He has to spend more time in preparation of pre-class and in –class activities.

9. Technological Facilities Required

Implementation of flipped classroom demand appropriate technological tools. Lack of technical facilities makes the idea of flipped classroom ineffective.

10. Students may resist to accept the model

Students need to be counseled to understand the importance and advantage of flipped classroom. But once they will experience the benefit of the class they will definitely accept the model.

11. Classroom Space

Large classroom space may be required for collaborative and active learning.

12. Course Content Management

The Course content may be managed properly in accordance with time. The content to be delivered and activities to be organized should be properly managed.

Efficient implementation of flipped classroom

- Purpose or advantage of implementing flipped classroom must be clearly explained to the learners
- Incentives may be provided for learners to prepare for class.
- There should be clear-cut discrimination between in-class and out-of-class activities.
- Classroom activities are to be clearly defined and well structured to suit the purpose.
- Learners should be provided sufficient time to complete their assignments.
- Supports a learning community by facilitation and guidance .
- Prompt and adaptive feedback should be provided on group and project work.
- Common and easy to access to technologies should be used.

Role of Teacher in flipped classroom-

Teacher plays very important role in flipped classroom. His role may be as follows

- Creating learning environment in the classroom.
- Teacher should act as a guide instead of knowledge transmitter.
- Teacher interacts with students individually to solve their problems.
- Teacher should use appropriate technological tools.
- Teacher should create interactive atmosphere in class .
- Teacher should encourage students to participate in class activities.
- Teacher should provide instant and true feedback to students.

Role of Student in Flipped Classroom

The learning in flipped classroom is student centered so his role is very prominent

- Student should realize his own learning responsibility.
- Student has to watch the video or resources provided to him before the class very carefully
- Student can learn at his own pace
- Student should interact with teachers and friends and should take his proper feedback.
- Student should interact and participate in class activities. He should be involved in team work.

Flipped Classroom implementation Steps

- Select the topic-Select the topic which you wish to teach in flipped class.
- Identify learning objectives-Select learning outcomes of topic you are flipping.
- Possibility of implementing the pre class activities-How far ahead the pre-class activities need to be made or released?
- Pre –Class activity Concept-What main concepts need to be covered in pre-class activity.
- Identify Technological tools/Media-To help participants understand key concepts what will you use. Will you be using a ppt, or a video or will provide reading content with questions.
- Create Videos and Content-Organise your time for developing pre class activities

- Fix the dates for accessing pre-class activities-What is due date for pre-class activities to be completed.
- Plan for face to face classroom activities-face to face classroom activities should be designed to help students in analyzing and applying the key concepts.
- Class Activity-What resources and strategies will you adapt for active learning aspect of face to face class.
- Evaluation-The last step is evaluation. It deals with evaluating effectiveness of flipped class.

Conclusion

Flipped classroom is a teaching strategy which can address the needs of learners in efficient manner. This approach is reverse of traditional approach where assignments are done at home and teaching is done in class. Here content is provided to students in e-form and class time is utilized to explore the problems through collaborative assignments. Teacher has more time to devote for individual students. Teaching here is technology based. If there are proper technological facilities and both teachers and students are engaged fruitfully in flipped classroom activities it will definitely be a boon to educational system.

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