An Innovative use of E-Learning to Promote Self-Learning Through Flipped Model Classroom

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Abstract

The Ultimate goal of teaching is to support and promote learning. Education is not the learning of facts, but the training of mind to think. The universities are seeking to invest the internet technologies, applications and programs for the development of the educational process. This paper presents an innovative use of e-learning tools and technologies to flip the class in order to stimulate the critical thinking or foster the self-learning competence of students, so they will accept the responsibility for their own learning. Flipped classroom model is a new pedagogical method, which can be accomplished by either Supportive or Blended Learning. In this model, the class activities are shifted to home and homework's are shifted to class. The issue of pacing can be overcome by flipped model. So students have ownership of the pace of their learning and review. This paper initially provides an understanding of what constitute of a flipped classroom model, reasons for flipping, how to flip the classroom and highlighting the benefits of the transition to a new mode of learning. The paper concludes with a case study and comprehensive survey associated with adopting a flipped classroom approach.

Keywords

Flipped class, Screen casting, Learner centered, Self-learning, Camtasia.

I. Introduction

Nowadays, universities and schools are striving to challenge instructional practices in order to produce enhancement and improvement of student's level of learning. A teacher's goal is to produce better learners. Also, the producer must begin the production by first deciding what the end product should be? Higher education continually fosters a powerful crop of educators and administrators who have to make sense of scores and learning behaviors.

In the conventional classroom, students listen to teacher's lecture in the school/college then outside of class they work through assignments. The flipped classroom is a new pedagogical method, which employs asynchronous video lectures to listen at home and assignments, group activities in the classroom[8]. This novel method offers an additional option – essentially flipping the time and location of these activities, so that students watch recorded lectures and read course materials outside of class, then meet to engage in problem-solving, discussion, and practical application exercises with their instructor [5]. In the flipped classroom model, the class activities are shifted to home and homework's are shifted to class. There is a wide range of techniques and strategies that fall under "Flipping a classroom", but most involve elements of e-learning with the online and offline component. As a class with diverse students, a teacher could challenge all of their students to become learners by working with them one –on –one in the classroom through this reverse classroom model. A teacher should question themselves that "What do they want their students to know and able to do"? And, what are the essential objectives that their students must learn? After analysing, the teacher should collect quality learning resources to accomplish the task. These collections may be different depending on the teacher and class. It is important that these be accessible outside the classroom and is available whatever-whenever-wherever (WWW), so students can have ownership of the pace of their learning and review as needed. [4].Flipping gains more popularity across the content area as it provides more class time for learning [3]. So it is possible for a teacher to move students into a place which will help them become better learners.

II. Background of the Flipped Classroom

In 2007, Woodland Park High School chemistry teachers Jonathan Bergmann and Aaron Sams stumbled onto an idea. Struggling to find the time to reteach lessons for absent students, they plunked down $50, bought software that allowed them to record and annotate lessons, and posted them online. Absent students appreciated the opportunity to see what they missed. But, surprisingly, so did students who hadn't missed class. They, too, used the online material, mostly to review and reinforce classroom lessons. And, soon, Bergmann and Sams realized they had the opportunity to radically rethink how they used class time. It's called "the flipped classroom."[1]. The simplest definition of the flipped(inverted) classroom is given by Lage et al. "Inverting the classroom means that events that have traditionally taken place inside the classroom now take place outside the classroom and vice versa" [2].

III. Drawbacks in the Traditional Classroom

It is important to know the drawbacks of traditional classroom lecture.

- Students tend to forget the concepts taught in the normal classroom.
- Students feel embarrassed to ask any doubts or repeat the Lecture.
- Due to time constraint, the teacher may not be able to provide more information.
- Students may not find time to discuss with a teacher or with their peers.
- Feedback is not possible.
- No involvement of parents.
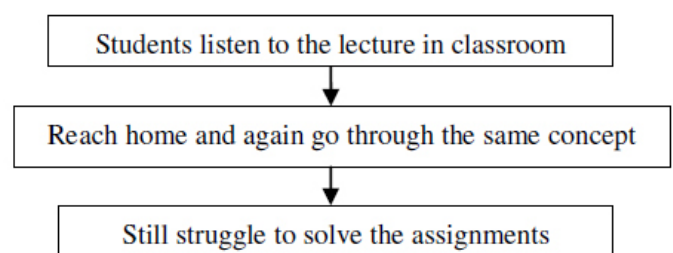
IV. Importance of Flipped Classroom Model

"Flipping", a good option: If teachers have some of the following goals or priorities for their class, then flipping might be a good option.

- Interactive questioning
- Idea exploration
- Ownership of content
- Collaborative learning.
- Independent problem solving
- Inquiry-based activities
- Project Based Learning

V. Implementation of Flipped Classroom

An essential thing for inverted classroom model is Screen Casting. Screen casts (video screen captures with audio narration) are a great way to convey your ideas and showcase your creativity. Teachers are using videos produced by sources such as the Kahn Academy (http://www.khanacademy.org/) and Bozeman Science. Also, teachers can create their own videos using software programs like Camtasia. There are many Screen Casting tools available. Some of the popular Screen Casting tools are:

- Camtasia Studio
- Snagit
- Screenr
- Camstudio
- SnapzProX

Fig.: 1

Also, the teachers have different ways to screen cast their Lectures.

- Uploading lectures via internet (YouTube)
- Learning Management Systems such as Blackboard (E-Learning) – by using Mashups, a teacher can upload their own screen casting.

Class activities for this inverted model

Many teachers struggle and do not know exactly what to do with their students with the "extra" class time that is created by shifting "lecture to home" and "homework to class". When a teacher wishes to flip the classroom in order

to facilitate engagement and deeper learning, the teacher should structure the lesson plans to shift focus from content delivery to student engagement.

Key points

#1.In the traditional method, the planning typically starts with the question "what am I going to talk about?" whereas, in flipped model, the planning starts with the question "What do the students need to do?" #2. The teacher must use the classroom skills effectively to help students to become better learners. The

focus of learning environment from "teacher-centered to learner-centered", the teacher should create an environment so as to engage the students, enhances learning and creates an exciting classroom atmosphere. To be designed to help student's process what they have learned and place the learning into the context of the world in which they live.

VI. Advantages of Inverted Teaching Model

(1) Students move at their own pace; (2) doing "homework" in class gives teachers better insight into student difficulties and learning styles; (3) teachers can more easily customize and update the curriculum and provide it to students 24/7; (4) classroom time can be used more effectively and creatively; (5) increased levels of student achievement, interest, and engaging students with personalized feedback; (6) the use of technology is flexible and learning new teaching skills." (7) It provides more time for a teacher to spend with their students to help in their course activities and on authentic research; (8) It builds stronger student/teacher relationships (9) students who miss class for debate/sports/etc., can watch the lectures while on the road; (10)produces the ability for students to "rewind" lessons and master topics ;(11) the method "promotes thinking inside and outside of the classroom"; (12) students are more actively involved in the learning process; and (13) Paves a way for teachers to share information with other faculty, students, parents, and the community easily. (14). Creates a collaborative learning environment in the classroom. (15) Meet students' individual learning needs(Students recognize that they are able to learn the way that best meets their needs and that they are responsible for their learning) (16) It is easy for the teachers to analyse or assess the level of a particular student so as to guide them for further research activities and so on. (17) Get Parents Involved in Student Learning (18) Students really like it;
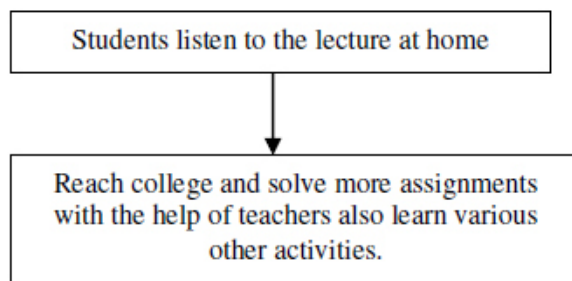
VII. Flipped Approach-Problems & Solutions

Two major problems were identified also solutions have been suggested.

1. Students new to the method may be initially resistant because it requires that they do work at home rather than be first exposed to the subject matter in college. Faculties can solve this problem by giving a short quiz either online or in class or by requiring homework that references information that can only be obtained from the outside reading or videos.

2. The homework (readings, videos) must be carefully tailored for the students in order to prepare them for the in-class activities. Faculties should upload a fascinating lecture with the announcement that surprise quiz will be taken from the uploaded lecture.

VIII. Survey & Case Study

According to our survey about the success factor of flipped classroom in Community College for girls Khamis Mushyat, the following table and chart show the percentage report.

Table: 1

Success factor	High	Medium	Less
Level of Student achievement	76 %	22%	1.60%
Communication and Collaboration	70%	15%	15%
Infrastructure Requirement	58%	29%	13%

Fig. : 2

Case Study

In one semester for one of the course, we provided some Lecture time to solve assignments and quizzes (through Blackboard) where we analyzed the student's capability and skills. Out of 46 students, 39 students are much interested in solving the assignments and quizzes in college because of immediate clarification of their doubts. Also, they were ready to solve more additional assignments by extending their class timings. This proved that flipped model classroom motivates self-learning which leads them to better learners. The following chart (Figure: 2) shows the comparison of mark statement of 11 students between traditional and Flipped model. Overall mark secured is high in flipped model class. It shows that the students get a clear understanding of the concepts when they learn at their own pace through Flipped model class.
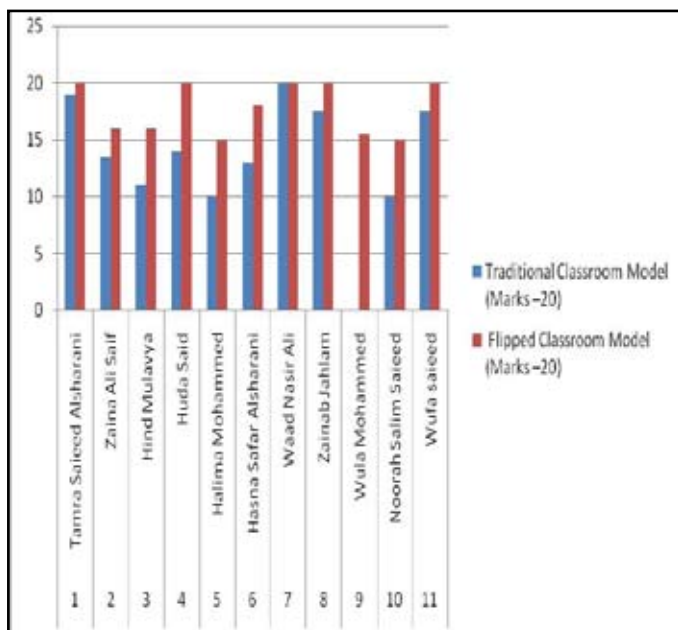

Fig.: 3

IX. Conclusion

"Learning is a treasure that will follow its owner everywhere" Through the Flipped Classroom model, a teacher can really move students into a place which will help them become better learners rather than just students. By this reversed teaching, the students by themselves are able to identify their inner talents. Stress relief for the students from struggling with assignments at home. To be successful in the flipped classroom model, a teacher requires a new set of skills, in such a way that the teacher should design their class and implement their teaching strategies. Concluding that Good teaching and effective learning takes place by "Flipped model" through E-Learning. We are motivated to flip our classroom so as to develop collaborative learning, better problem solving and critical thinking skills which lead to produce learners and not just students.

X. Acknowledgment

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