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Flipped Classroom and Student Engagement

Dr. Jyoti Pandey
Faculty of Education
MJP Rohilkhand University, Bareilly
Email: jyoti.pandey@mjpru.ac.in

Abstract

It is a set of pedagogical approaches that seek to reduce students' cognitive load and increase motivation and engagement by moving teaching out the class which includes much more information which leads to transmission of teaching leaning in different way. It also uses the classroom time schedules for learning related activities in which both teacher and student found active and socially engaged. The fundamental approach towards using flipped leaning method is just to be more engage and interactive, more focussed on the processes including attending the regular classes, participation in all activities, basic knowledge of content to be taught in the classroom so that they may get deeper understanding of the concept. Students can be engaged Tin different activities which can enable students to get mastery over the content as they may be able to detect mistakes done; rectify it, building thought processing capacities and clarify the concepts in deeper way (Houston et.al., 2012). Technology is an important tool for flipped classroom. Implementation of this system contains practical and logical challenges as flipping a classroom needs considerable timeframe along with commitment especially on teachers' part. Planning, preparation of content, recording and editing the qualitative video presentation is a time-consuming task for teachers which needs expertise and proficiency but these can be manageable with little efforts.

Keywords: Flipped Learning, Teaching Learning Process, Technology, Digital resources, Student Engagement

Flipped Classroom: Conceptual Understanding

It is a set of pedagogical approaches that seek to reduce students' cognitive load and increase motivation and engagement by moving teaching out the class which includes much more

information which leads to transmission of teaching leaning in different way. It also uses the classroom time schedules for learning related activities in which both teacher and student found active and socially engaged. Along with all, the basic component required in flipped learning method is that students have to complete all the given classwork/ homework or prescribed activities in that duration also. The fundamental approach towards using flipped leaning method is just to be more engage and interactive, more focussed on the processes including attending the regular classes, participation in all activities, basic knowledge of content to be taught in the classroom so that they may get deeper understanding of the concept. If students are fit in the above-mentioned aspects or criteria, they may be more interactive inside classroom activities and it helps them to have more clarified conceptual understanding with practical, analytical and problem-solving approach (Dong,2016). It is the one of the popular methods which enable students to reimagine their learning opportunities and enhance it so that students can be more benefitted with it. Online learning environment has already facilitated student access and enabled them to study in independent way in comparison to tradition method of learning (Strayer, 2012).It is an approach to teaching and learning which requires mechanism for those students who couldn't attend or missed class due to any of reason as ill health or engagement in any other activities, he may be able to catch up with their school work with the help of it. Through a series of video lectures and online classes, absent students can learn the content at home also. Such an approach may make students to fulfil academic objectives. Along with it, students present in the class and attended it, can start to watch videos for better understanding of the concept and apply it in completion of their homework / assignments. Teacher and taught living anywhere and cannot reach to class can also watch these videos as well. As researchers found that in routine classes these videos cannot be used sometimes to teach core course /subjects due to some limitations of time and schedules. As sometimes it seems to be difficult to engage students and ensure the conceptual understanding so that the traditional practices of using instructional model can be turned in to "flipped instructional model(Chou et al. ,2021).Such approach can lead to more time for teaching as well as for learning. Another benefit is that for every next session, these recorded videos/ materials can be used in different classes to teach every unit by flipping the classroom in proper manner (Bermann & Sams, 2012). This brought a new vision among teachers. Teachers are flipping their classroom by preparing short videos and teaching through it and by using the classroom scheduled timings. It also applies on content learnt at home through these supportive digital materials (Baepler et. al. 2014; Herreid & Schiller, 2014). The level of exposure increases as students can utilize their hard labelled abilities and talents in grasping and assimilating previously gained knowledge and it can develop more problem- solving approach, discussions, debates and conceptual understanding of contents (Brame, 2013). This teaching learning method is student centric and provide them opportunity for deep learning experiences (Collins, 2012). Such little changes to the flipped classroom require additional time, trials, preservance and professional commitment on the

part of teachers and students which is fruitful for long term. Resources are necessary for flipped learning system and this new technique seems to be much more effective for teaching learning process.

Merits of Flipped Classroom

Traditional classroom is concerned with lecture-based classroom and simplified activity-oriented teaching learning approach. But in flipped classroom system, classroom pattern is different, it requires multitasking, both teacher and students are active, students listen and grasps the teacher talk, process of new formation is being communicated and also note down key concepts and ideas for future perspectives. The negative aspect as depicted by researches is that these methods can overload students as they are more engaged in this method of teaching -learning. For grasping more information, students' mental faculties have to process and store much more, this can disrupt learning system of students (Collins, 2012). Although students have to grasp new content at their own speed and they can watch the videos as per their own needs and pause it and take notes, they can rewind it, revise through it, relearn many times as per their needs (Love et.al.,2014; Bergmann & Sams, 2012). Another one positive aspect is that scheduled class time can be utilized for integration of new knowledge, collaborative activities, skill development, presentations of content and solving the problems and issues of students. It can foster deeper understanding of content (Mazur et al., 2015). Students can be engaged Tin different activities which can enable students to get mastery over the content as they may be able to detect mistakes done; rectify it, building thought processing capacities and clarify the concepts in deeper way (Houston et.al., 2012). Students after gaining mastery over the content/ subject can move ahead for more specific tuff assignments and motivate and engage themselves in extending their learning sphere in specified field (Herreid & Schiller, 2014). This method is also beneficial for parents also as they can watch videos, connect with their wards leaning methodology and also gain new knowledge (Bergmann & Sams, 2012; Dong, 2016).

Tools for effectiveness

Some questions with reference to flipped learning are also arises that what are specified learning outcomes?;What key concepts should be added; what about planning its execution; specification about strategies to be implemented; plannings and implementation of pre classroom activities , development of content as per objectives ;linkage of classroom activities, classroom content delivery; linkage of post classroom activities and assessment process; evaluation of flipped classroom and future plans and actions to be taken. Along with all these, specific objectives orientated curriculum for online flipped classroom is also developed and implemented in proper manner. The one of the most important aspects is to pay attention is to reduce cognitive load and increase engagement as lectures must be minimized and activities must be enhanced. Lectures can be replaced with short readings, short reflective activities, memory games, quizzes, surveys and other joyful activities.

Technology is an important tool for flipped classroom. It is mentioned in above section that learners require access to technology so that they may be able to watch videos at home or in the school campus. Along with it, teachers also need tech resources to access, preparation and upload videos. Teachers can use different devices for recording as per their comfort. They can use PowerPoint presentations, smartboards in their classrooms. Screen casting software is also good option for recording movements and narrations in easiest way to develop lecture videos (Bergmann & Sams, 2012). These and other similar type software can be used on mobile, laptop, tablet or desktop as per availability of device. Simplest way is to use camera to shoot videos by putting it in front and record the lecture. Besides these, during classroom, lectures can also be recorded while teaching which needs no extra time and efforts. After it, these recorded videos can be edited with references to content presentation and duration and uploaded on internet. This method is quite easy and good for flipped learning (Bergmann, 2014). Although its perfect mechanism may depend on availability of digital resources in the schools and the venues available for recording videos. The best and appropriate place to do this task is the classroom only because it creates the ambiance and learning environment also. You tube channel, face book page, twitter and other social networking platform are good to upload these quality videos which can enhance learning zone (Bergmann & Sams, 2012; Bergmann, 2014). Voice recordings must be clear without background noise and clarity in images captured and voice of speaker. The pace of the videos, the required length, and quality of content should match to the students' abilities to understand, age level, skill-level and attention time. The job to edit the videos allows teachers to addon informational notes or comments which helps in clarification of concepts and to make concise and effective videos. Individual and group activities, multiple choice questions, polls, quizzes, concept maps, mind maps, word maps, problem solving activities, discussions, online videos and discussions sessions after watching videos, online readings content; blogposts; reading notes, using google slides, power-point presentations, podcasts, screencast and speech presentations can also be used.

Educational Implications

Researches have shown that for betterment of teaching learning process, if students are provided opportunities to learn the key concept before attending the class or having previous knowledge of the concept before face-to-face classroom teaching, he enables himself to learn and understand perfectly the concept while attending class and studying through face-to-face method. The student becomes more active and can communicate better with confidence during question answer session in the class. Such approaches develop active learnings as key concepts are better understood, analyzed and applied (Chen et al., 2015; Herein & Schiller,2013 and Krathwohl et al., 2010). Achievement of most students was significantly improved compared to the traditional class; using quiz and class meeting, improved students' performances and grades (Halili et al. ,2014, Haung et al. ,2015, Missildine et al.,2013) . Roach (2014) and Lage et al. (2000) also found that students got mastery over content in

this process. Love et al. (2014) found that students got opportunities to collaborate with each other and enable to solve problems. Missildine et al. (2013) and Chen et al. (2014) explored that the blending of new technology and the traditional classroom has established interactive learning community and exchange of ideas . For effective teaching learning process, during flipped learning approach it is essential to have good communication skills so that students may be able to understand the concept clearly and their classroom objectives may be fulfilled easily. For preparation of classroom, necessary resources and equipments are also required so it is needed to facilitate them. Within classroom and outside the classroom activities must be interconnected or inter-linked. The course content should be systematic and in logical order so that topics or units going to be taught online will help the students to understand as per sequence and enable them to continue self-study in effective manner. Proper organization of study material and content in specified modules brings systematic approach in studies. Along with all these, classroom activities must be pre planned and organize in interactive manner. While designing such activities, content must be consolidated appropriately. Guidance in required areas must also be provided to students as it supports them to be in group or community learners. Learning becomes more permanent and stable if it is assessed time to time and prompt feedback is provided to students for understanding shortcomings and for better outcome next time. Required facilities should also be provided for better teaching learning environment. Learning activities should be assesses timely by assigning assessment tasks. In the technology enabled learning environment, with the help of easily available and accessible techno equipments, such learning process can be made more easy and joyful. The concept of flipped classroom in the educational practices helps students in building confidence and maintaining mental support in academic development(Alexander,2018 and Chou et al. ,2021). Pedagogical frameworks must be developed as per the age level and objectives of classroom teaching. Results showed that flipped classroom have many benefits. In a school, the achievement of high school mathematics students has increased by 50% while using flipped learning method. In another district the improvement in found in various subjects as science, maths, social studies along with reading (Chou et al., 2021). The passing percentage for mathematical calculations increased by 20 percent and their productivity is also enhanced by three percent after using flipped model . The broader result is found in another survey on four hundred sample teachers who applied it and as a result 67% teachers reported that test scores of their students also increased (Herried and Schiller, 2013). Driscoll (2012) reported that during academic learning process in a flipped classroom learning climate overwhelmed responses revealed as almost eighty percent students depicted positive changes in their interactions with peers and teachers during flipped classroom and it is found their teaching leaning process more interesting than the traditional courses. Students found them more engaged in flipped course, able to take effective decisions and more collaborations. In another survey by Driscoll, 2012 and Carini et al, 2006, it is found that 100% teachers reported that student while learning in flipped classroom became more active.

Over 90 percent of educators stated that positive interactions and engagement in critical thinking with their students increased. Along with it, instruction pattern used by teachers also became more differentiated and personalized. Researches also indicated that for proper implementation of flipped learning models, quality videos, activeness, initiative approach and pre-preparation is also needed for getting success (Bormann, 2014).

Challenges

Adoption and arrangement of flipped classroom is also challenging because it is different from traditional study model. Another aspect is that it can be used for which level of students? For teaching every subject, this method can be applied. Rational behind using it must be clear. The flipped classroom model is completely based on technology as students must have access to smart devices with internet connection so go through this process. Because if videos are available with them, but resources are not available, then it may not work so proper access of tech resources is the responsibility of teacher. If it is not possible to provide such facilities at home, then during institutional working hours or school time, access can be provided in computer laboratories or library by extending extra school hours to initiate the activities related to flipped learning. Now government has initiated policy to provide smart phone to students for access of online teaching learning content which is good to operate flipped learning method. Along with it, teachers must have to record videos and upload it on internet so that it can be reachable to students. Flipping a classroom needs considerable timeframe along with commitment especially on teachers' part. Planning, preparation of content, recording and editing the qualitative video presentation is a time-consuming task for teachers which needs expertise and proficiency. Another important aspect is that videos must not be too lengthy, appropriate in content so that it may match with the psychological aspects of learning as age group, attention capacity, interaction approach and pace of learners. Along with it, online resources websites, online exercises/quizzes, Instructional videos, social networking sites, e-content, Massive Open Online Courses (MOOCs)and other online learning tools etc can also be used.

Conclusion

Flipped Learning is an approach in which the instructions methodology goes through inside classroom to outside classroom. Such system creates a dynamic and interactive environment for teaching and learning. Traditional system of learning is quite different than this type of learning system. The recent instructional strategy, the flipped classroom which requires not only resources but positive approach towards it as it needs technological infrastructure along with efficiency to take initiative in this direction. It is the new one approach which can replace traditional classroom teaching approach of teaching learning. As this transition method calls for a significant and effective investment of time, energy, money and skills both on the part of teachers as well as of students. In this method, for teaching, content preparation

in required which consumes time in making videos; time to manage class time for conceptual understanding and enable students to understand this new way of teaching and learning. Commitment, patience and support of concerned administrative authorities also supports an educator for applying new and innovative teaching strategies in academic settings. Although, teachers have to deal with challenges in this path of learning but these can be manageable with little efforts. Such approach can bring new innovations in this field of access of internet, flipping without technology, easy-going plannings , using downloaded videos without internet access afterwards , no use of technology only offline or classroom tools usage as discussions, asking questions, taking notes during lecture, arranging quizzes, treating videos as teaching learning material not as entertaining movies and behavioural approaches during flipped teaching learning can be considered for better application of this model.

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