



SCRIPT OF TALK

TITLE: **Architecture of a MOOC - Flipped Classroom**

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NARRATION:

Hi!! Welcome to this lecture on flipped classrooms. I'm from Prabhakar from IIT-Kanpur. So, we have been looking at moocs which are technology intensive, we need technology to Record the lectures, we need technology to deploy the lectures. We need technology to monitor who is watching and who is not and then also we need technology to watch the lectures We need access devices and especially these are designed for large-scale use we're talking about a large number of people distributed all over the world watching the lectures and participating in the course. Now the natural question is if I have so much educational content that let's say I have used to create the moocs, lots of recorded lectures and the various technologies that have been designed and developed to run moocs. Can I use them in a smaller setting in a classroom, in a university, in a regular course? So, the opportunity basically is since I have a lot of recorded lessons I would like to use them in my regular classroom. So, what one is saying is the student learns part of the curriculum online and part of it in the class and this is called blended learning, we're trying to basically mix multiple ways of learning blend, blender learning from face to face lectures classroom interactions recorded lectures online exercises that I might do and so on.

One form of blended learning is called the flipped classroom. Essentially it say's you reverse the role of lectures and homework. Normally, we do we listen to the lectures in the classroom and do the homework at home but instead suppose I listen to the lectures at home and do the homework the exercises in the classroom I have a Flipped class some people call it inverted class as well so in the class I'm doing only problem-solving and discussions not working on listening to the concepts in being exposed to the material so this is what happens in a flipped classroom. Students view a number of lectures at home these lectures might involve inbuilt quizzes or separately they may take some quizzes so that we get some first cut understanding of whether they have figured out what the lectures is all about have of course they since it is a

recorded lecture so they can play it many times slow make it and run faster and so on and then the classroom is used for problem solving and the instructor to monitor the progress and so on. Okay, this is a simple easy to understand so this is what a flipped classroom is. So, what one is saying is the conceptual understanding of the content part of it is pushed to the home and the procedural fluency how to apply those concepts in solving a problem is done in the class. So, classroom is used for deepening the understanding and to do exercises and have discussions. People try to take the flipped classroom concept and refinement it and add procedural elements to it and make it 'PUCCA' a defining what's called flipped learning let us read this definition "Flipped learning is a pedagogical approach in which direct instruction moves from the group learning space in the classroom that is to the individual learning space, at home and the resulting group space which got free is transformed into a dynamic, interactive learning environment where the educator guide students as they apply concepts and engage creatively in a subject matter." So, even I flip my classroom I have this wonderful opportunity of wherever we are meeting together we try to do something which is more meaningful and productive than just telling you what the topic is all about there's a reference here this is site with lots of resources you can check it out.

So, how does flipped classroom help number one the students can watch videos multiple number of times every face to face class become a tutorial where we can spend time explaining not just conveying content. Now students can solve problems together working together this has an interesting consequence and of course since the instructor is following whether the student is able to do the problem or not and the kind of questions that are being asked while solving those problems immediately the instructor knows where the class is. So, what are the problems in trying to Flip a class major thing is there's Lots of work for the instructor, you will have to design the lectures you'll have to record them and put them out on learning management system monitor who is watching and who is not and so on, you'll end up needing different kind of skills. This is another big issue what do you do if the students come to the class without watching the lecture. So, obviously you can try to incentive wise watching, that means you can have let's say you have a small question inside it which doesn't fully probably test the

understanding the complete understanding but at least checks out that the student has watched the video and give some credit for it that is incentive wising or simply assume the student has watched and give the lecture very soon the students will figure out that they will have to watch the lecture at home before they come. But this is one issue and of course we expect the students have internet access at home access to the content and finally the students may just don't like to look at the books they may want a face to face lecture but this is likely to go away because the younger generation is lot more comfortable with technology then people of my generation are. So, what do you need to Flip a class of course you need recording tools various ways of capturing the instructors maybe PowerPoint presentations or images and voice and so on and then you need a platform to host a Learning Management System or a mooc platform and will play so the implications of flipped classroom now teachers in the class are becoming facilitators instead of just being lecturers. Students are no longer a passive listener to a lecture because in the class you can't just go and stare at the instructor. It's often found that 20 minutes is the longest attention span after that they lose attention they need to do some small intervention to bring them back into focus. So, students become active participants because you have to solve a problem. Now, this is interesting since you are getting students to do a problem and maybe talk to your to the neighborhood and solve it together and discuss and so on they will end up picking extra skills which are otherwise difficult to impart, collaboration and cooperative problem-solving which is what happens in the world just flipped classrooms works yes the overwhelming evidence is that there is as much as 20 percent grades. We also have done some experiments in a small-scale at IIT-Kanpur. We tried it on students who have picked up an 'F' grade and they needed to repeat the course and in one such summer course. We noticed that these students whom we thought are actually poor students have actually performed substantially better when we Flipped the class. The simple reason they have access to the rewind button and they can play it again and again. I'm giving some references that is lots of material and there are references in these references.

Thanks