NBA Accreditation and Teaching-Learning in Engineering
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Lecture 48
So, What Should the Teacher Do

Greetings and welcome to NATE Module 3 unit 8, they call it so what should the teacher do given all the constraints and which are contextual subject specific students specific and so on, what should the teacher do.

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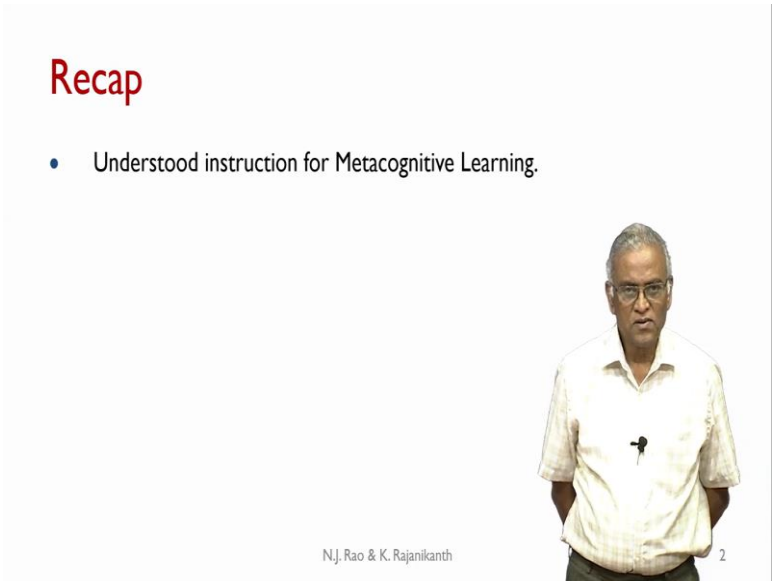

And in the earlier unit we understood instruction for Metacognitive learning.

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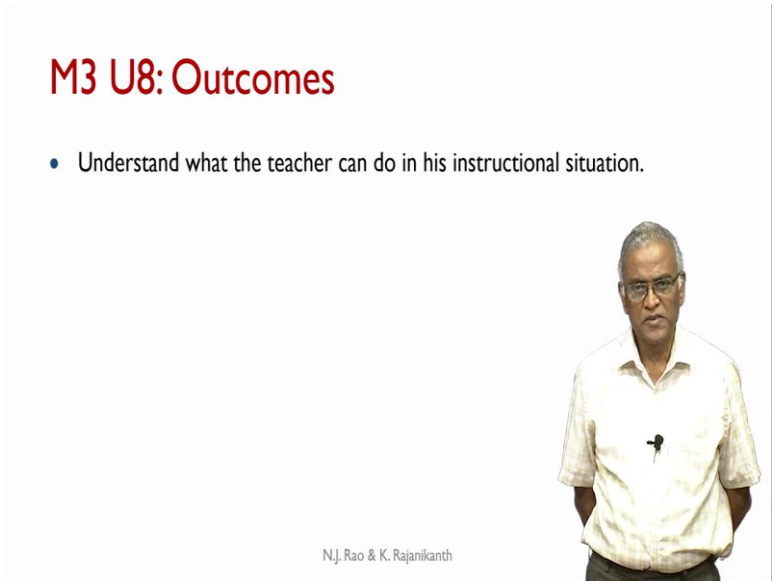

And in this unit we will say, understand what the teacher can do in his instructional situation. Here instructional situation which we have elaborated in one of the earlier units is different for different subjects, different institutions, different management's different teachers and so on. So, on because situation is different. How should a teacher plan or what is it that he can do, that is what we will. It is a kind of a summary type of thing that we will do in this unit.

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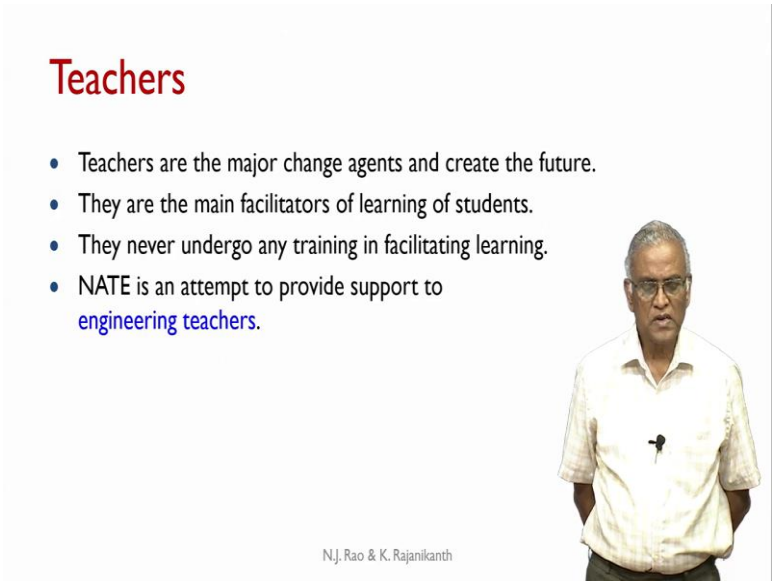

So, first start with teachers. One is very clear teachers are the major change agents and create the future. Teachers should also strongly believe in this and management should also believe in that there is no other change agent that we have whatever it is the teachers that play the major role of change agents. They are the main facilitators of learning of students. They never undergo any training in facilitating learning that is an unfortunate part of it.

If you know the subject, it is not equivalent to your ability to facilitate learning. And NATE, this particular course is an attempt to provide support to engineering teachers. So, several things are presented in NATE. Of course, all of them will not be applicable in all contexts in all subjects in all situations. But some, each teacher can pick some elements from what has been presented. And you can further learn about that, and hopefully you can make use of it. In your own context and scores.

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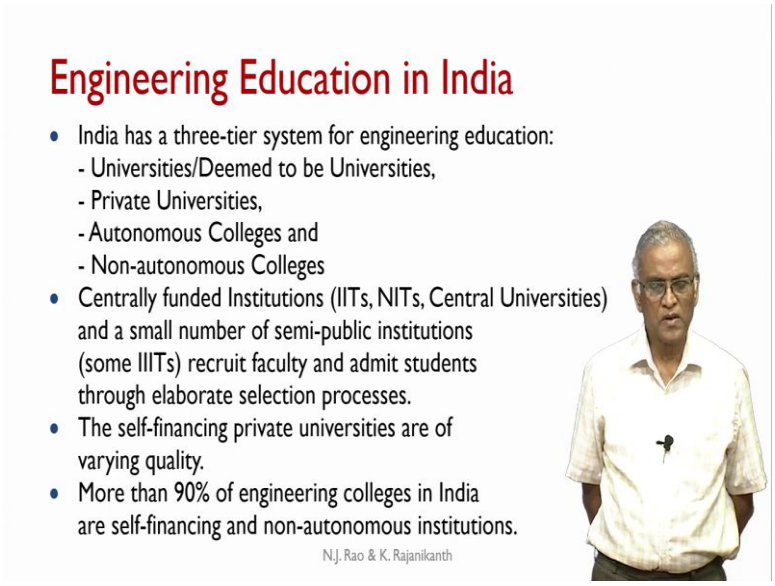

Now, this is something that everybody is familiar but let us summarize. Engineering Education in India has three tires system for engineering programs, universities deemed to be universities, private universities, autonomous colleges and non autonomous colleges. So, these, the way it is offer is not uniform across the country, centrally funded institutions, IITs and NIT's, Central universities, and a small number of semi public institutions, like some of the triple IITs, recruit faculty and admit students through elaborate selection processes.

That is you are making sure you have good faculty as well as good students. These self financing and private universities have already varying qualities. There are some good places, but there are very varying quality and more than 90 percent of engineering colleges in India are self financing and non autonomous institutions. So, this is a picture of engineering education in India.

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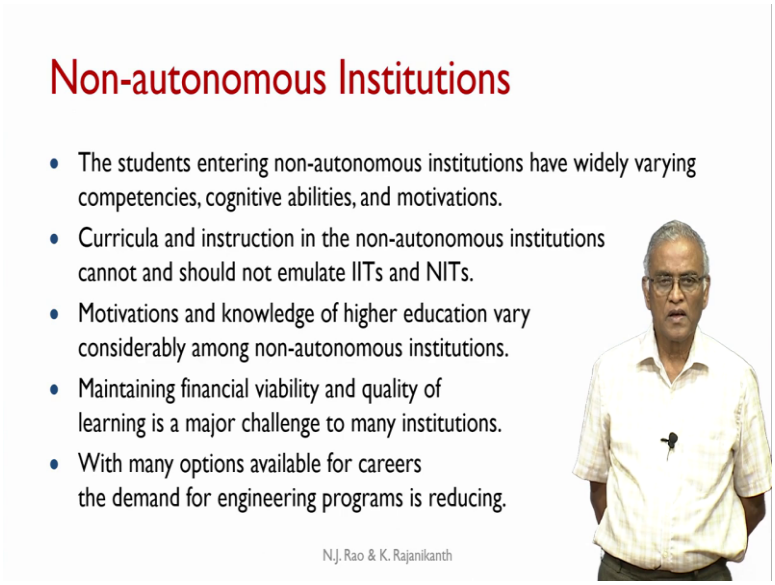

Now, as 90 percent are now non autonomous institutions, let us look at a little more in this, the students entering non autonomous institutions have widely varying competencies, cognitive abilities, and motivations. Some more at some point of time, it was considered by everybody, one can easily get into engineering education.

So, the system kind of adopted to such an extent, anyone who scored 35 percent marks or just passing marks in 12th is eligible for engineering education, which is an unfortunate thing, because it is any subject is not for everyone. And curricula and instruction in non autonomous institutions cannot and should not emulate what happens in the IIT's and the NIT's.

First of all, it is a very bad practice to directly take IIT's or an NIT's curriculum. And on top of that many boards of studies they add more material on top of what they borrow from IIT and NIT curricula. Motivations and knowledge of higher education vary considerably among non autonomous institutions. Motivations of both the students and management and teachers. They vary considerably.

For many of this institution being non autonomous maintaining financial viability and quality of learning together is a major challenge to many institutions. The institution has to be financially viable. That means the number of seats filled should exceed some limit for it to be financially viable because it only can work with what the fees student pay.

And with that kind of thing, the quality of learning becomes a major challenge. With many options available for carriers now, in today's context, the demand for engineering programs is

reducing. As you can see, every day you hear about the engineering colleges getting closed, and one of the most recent report by one committee of AICTE, it recommended something like more than 200 colleges across the country to be closed, because they do not seem to have the sufficient input and sufficient faculties, sufficient seats are not filled. So, obviously things are not happening right. So, that is the current situation.

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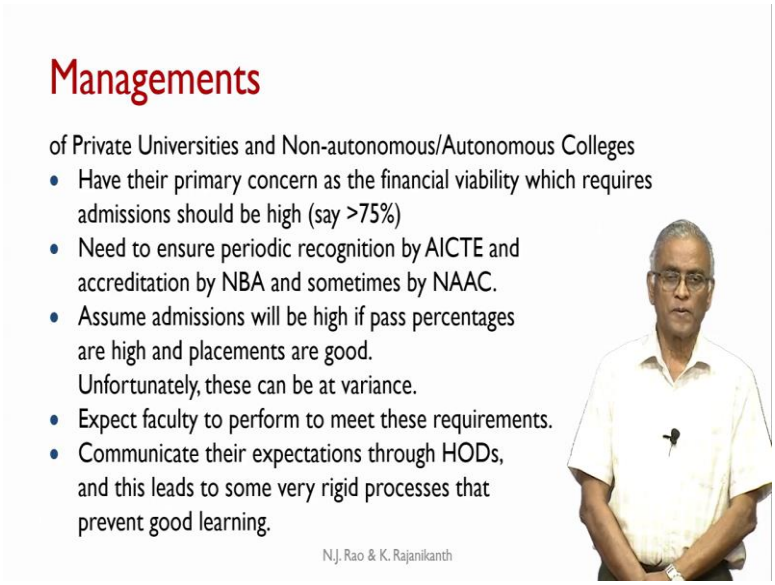

And coming to management's both of private universities non autonomous and autonomous colleges, they do play a very dominant role. First requirement of management is the financial viability, which requires admissions to be high, say greater than 75 percent and need to ensure recognition by AICTE and accreditation by NBA and sometimes by NAAC.

So, they have to ensure the recognition AICTE has some stipulations every year you have to submit some current status of your programs and based on that, they will make a judgment whether something should be done like reduce the number of seats available to a program or stop some program and so on.

And management is assume, assume admissions will be high, if past percentages are high and placements are good. Unfortunately, this high pass percentage and placements are the way it is going on are at variance. Strictly speaking, better percentage marks means better learning and leads to better placements. But in Indian context, High Pass percentages, do not ensure good placements and management's also expect faculty to perform to meet all this somewhat contradictory requirements.

And management's how do they communicate their expectations through HOD's and this leads HODs are responsible for something they are answerable to the management. So, they play safe and they translate that into very rigid processes that prevent good learning. So, the main goal is high pass percentages should be achieved in all courses, whether students are good or not, does not matter, they have to achieve high pass percentages.

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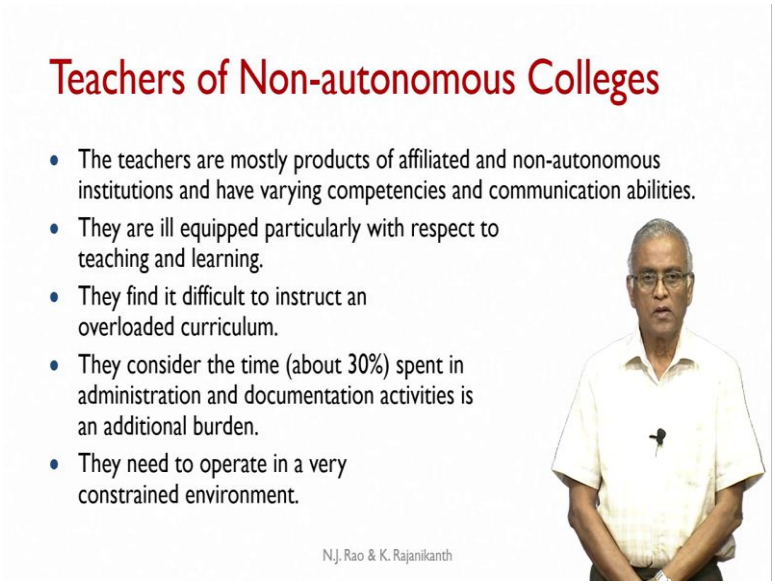

Now, let us come to teachers of non autonomous colleges. The teachers themselves are mostly products of affiliated and non autonomous institutions and have varying competencies and communication abilities. You have to acknowledge that there are also products of a similar what we would consider not so good a system. So, they are ill equipped particularly with respect to teaching and learning. On top of that nobody gets formally trained in teaching and learning.

If you have a degree, required degree, you are automatically a teacher. And they find it difficult to instruct in the instruct and overloaded curriculum. And some of faculty in spite of knowing all this, any boards of study that you any boards studies that you take anywhere in the country.

When they are sitting in the place, they seem to want their students to learn more and more and more, and they take it as a prestigious issue in the process. They overloaded the curriculum. Anywhere, you make a survey of the curricula of many of these universities, which have large number of affiliated colleges, the curriculum is certainly overloaded, especially with respect to the kind of students they get.

They consider the teachers also consider the time, which is almost about 30 percent spent in the administration and documentation activity as an additional burden. There is some more consider their role is only to teach. And all the administrative activity related to the teaching learning is an additional burden. When you consider the additional burden. Either you try to avoid and keep complaining about it.

And also teach teachers they need to operate in a very constrained environment. If something does not happen, it is the teachers who get blamed by the management saying that they are not putting in enough effort. So, they end up taking extra classes. But by just putting pressure on the teachers, you cannot correct the inherent systemic issues. Especially for me, the most important one is the overloaded curriculum.

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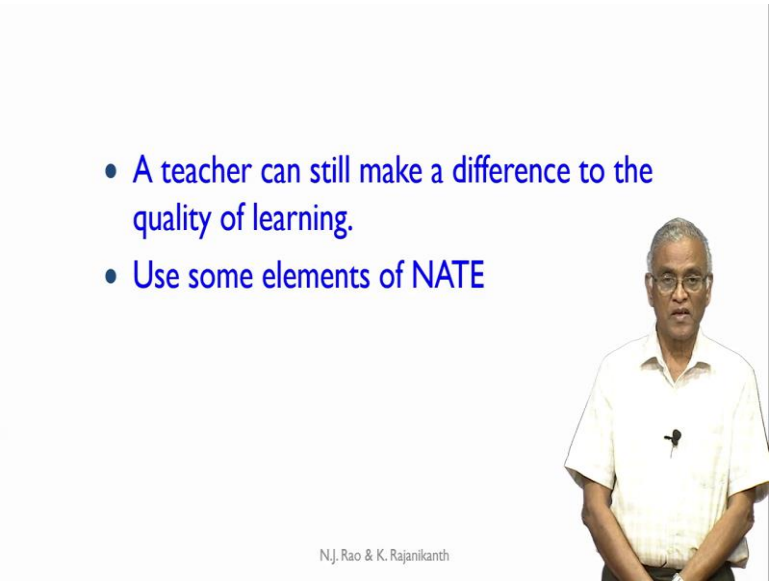

So, with all these limitations, a teacher can still make a difference to the quality of learning. So, what is the answer? How can you do it, use at least some elements of NATE. I am not marketing the course on Nate. But in it, some elements are presented in this all of them one cannot use at least use some elements you think you can use, because we have no other option we have to work in a very constrained environment. And as teacher you are concerned about the quality of learning of your students, so please you can, you should use some elements of Nate.

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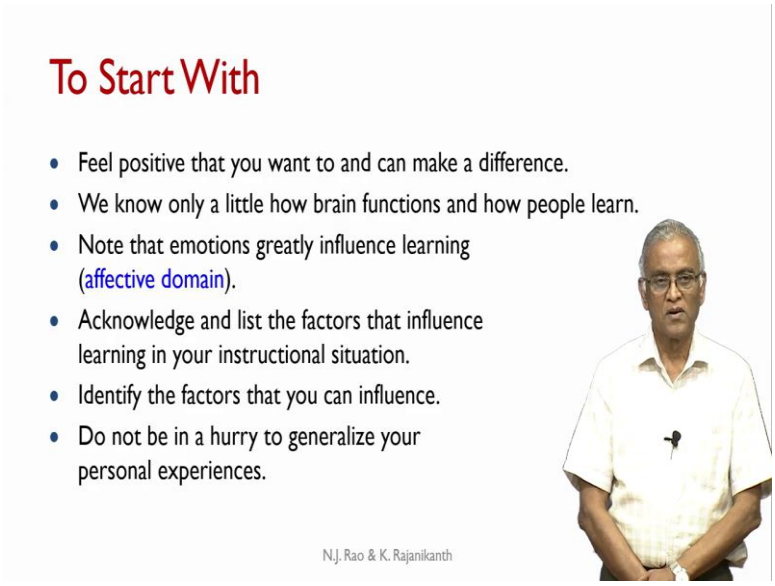

To start with, feel positive that you want to and can make a difference. This again, we always feel that you know the system is so bad so what he called spoiled or a long time there is nothing much you can do. So, let us take it very easy path, do the minimum that is expected and forget about the entire forget about the process otherwise.

But first, unless you feel positive that you want to and can make a difference some teachers in inherently do feel, fortunately, we will have at least 10 to 15 percent of the teachers who do have that, that sense of what he called the commitment and the feel positive award. And we also know very little about how brain functions and how people learn, but based on purely experience and now in today's context are based on what do you call Educational Neuroscience. We do know something about how brains learn and how people learn. And one thing teachers should realize that emotions greatly influence learning.

Emotions would mean if the student has a negative emotion about whatever is participating, you can be assured that the learning does not take place. So, it is a teacher's role to ensure that negative emotion is not associated with anything that is happening in the classroom. Acknowledge and list the factors that influence learning in your instructional situation. So, what we suggest is, every teacher should list the factors this is for his own consumption, he does not have to share it with anyone.

List all the factors that influence learning in your particular situation. First of all, acknowledge that, that means you are acknowledging to yourself these are all the factors that

influencing the learning by our students. And in those factors, identify the factors that you can or want to influence.

So, at least you can identify out of maybe 15 20. Out of that you can make at least two or three factors that you can make you can influence. And do not be in a hurry to generalize your personalized personal experiences. This is what everybody does in spite of knowing otherwise. That is there all the time when somebody states something no, no, it does not happen that way. It happens this way.

That means you are generalizing your personal experiences is what happens in all in all places. And for some reason, everybody does this. You generalize your personal experiences, so caution yourself and do not be in a hurry to generalize your personal experiences.

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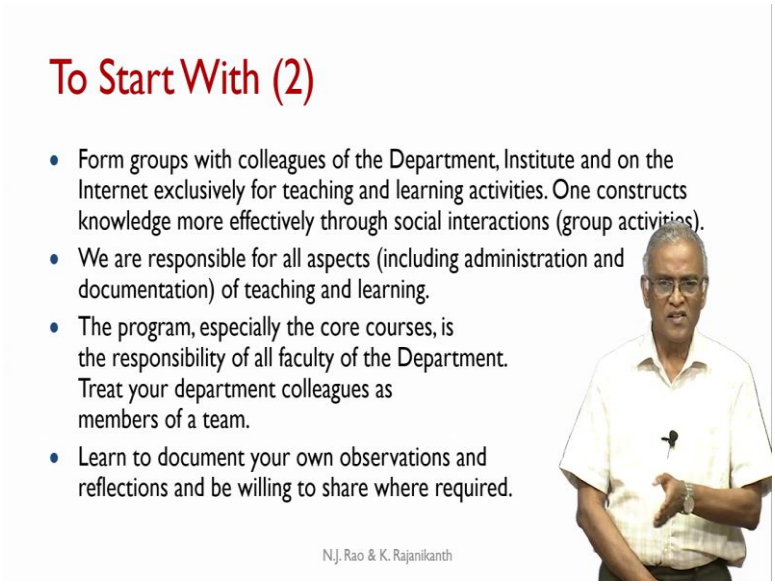

Further, these are all some simple thing it looks like what do you call some good statements to make. But I am only presenting something that is doable in a given environment. Form groups with colleagues of the department institute and on the internet exclusively for teaching learning activities.

One constructs knowledge more effectively through social interactions, or group activities. This I can assure you my personal experience, especially with regard to some subjects in electronics that is working with another colleague of yours can greatly influence the quality of the course that you can offer.

So, start forming groups with colleagues, generally faculty they do not want to consult their colleagues, they will only share the sort of social issues, or the institutional issues, who is good or is bad, but very rarely people form groups with colleagues that is related to teaching and learning. So, if you can make a habit of that, if you do not want to interact with your next door neighbor, you form a group with somebody on the internet these days that is possible.

And you can post questions and you can get their opinions and in that process, both the persons will learn and we are responsible for all aspects including administration documentation of teaching and learning. So, do not consider again, do not feel bad about the documentation that is related to accreditation or regulation, regulatory aspects and accreditation demands a lot of documentation related to teaching and learning.

So, do not feel bad saying that I am unnecessarily made to waste a lot of time on documentation. That is part of you that is part of the academic work actually. But and these days, the ICT tools will make the life easier with that. And also once you master that, it is not a continuously incremental node that is every semester, you do not have to do so elaborately. First time when you do it, you will feel it is a burden.

So, first mentally you should feel responsible for that aspect. That it is considered as you are part of the job you can say. The program especially the core courses is the responsibility of all Faculty of department whether you know that particular subject or not, but the core courses are really the responsibility of all faculty of the department. And you should treat your department colleagues as a members of a team. This is your department, this is your program, and all members need to contribute.

So, if you are able to work as a team, obviously your students will learn better. And learn to document your own observations and reflections. And be willing to share where required just because you document your own observations and reflections, it does not mean they need to be shared, that you are required to share, but at least if you write if you are very clear about that, if you can write you will be clear about your understanding.

So, I always recommend that both the students and teachers should constantly document their observations and reflections. And through that on it is an excellent learning tool for learning yourself, whether it is a subject or about the processes either way, if you keep documenting, you will learn better and better.

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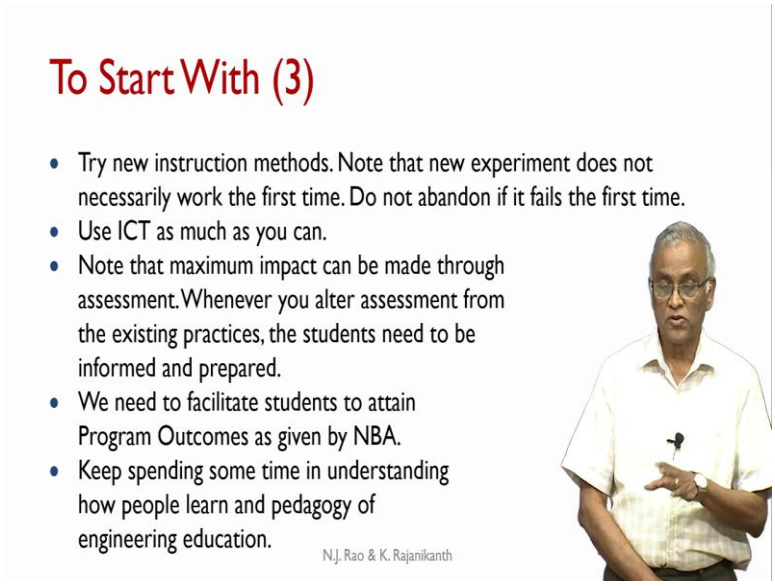

Further try new instructional methods and you should note down you should note that when you new experiment is conducted, it is not necessary that it will work first time because there are so many aspects about learning that when you consider at some level a particular instruction method is will be very effective with respect to a subject or with respect to a group of students.

Just because it does not work for the first time, please do not abandon it. And you should keep adjusting the method and observations a little more and keep trying it generally unless you try something three, four times, it does not get streamlined. So, you need to have patience for that. And use ICT as much as you can. Any experiment that you do if you use ICT for various aspects of your instruction, it will it will be easier and also it will be effective because you cannot remember everything that has happened.

After a few days you are likely to forget the detail. But if we use ICT tools, everything is available to you already somewhere document and note that maximum impact can be made through assessment. We have repeat we have re emphasize this several times, it is an assessment that drives learning and it is a quality of assessment that determines the quality of learning.

But whenever you alter assessment from the existing practice, students need to be informed and get prepared. It should not come as a surprise in the either in the class test or in the final exam that they did not expect that kind of questions or that kind of assessment. So, they need to be prepared.

And we need to facilitate students to attain program outcomes as given by NBA there is a requirement you nobody has any choice anymore on that. So, you should constantly think of how do I ensure the attainment of this program outcomes and program specific outcomes, though I am only dealing with a small number of courses. And keep spending some time in understanding how people learn and pedagogy of engineering education because that is our job as teachers, we are in the business of facilitating people to learn.

So, to the extent we should constantly equipped ourselves are better ourselves in doing our job better, which means we need to understand how people learn in different contexts, our students with different abilities. So, you have infinite number of factors that are influencing. So, how do I keep facilitating people to learn?

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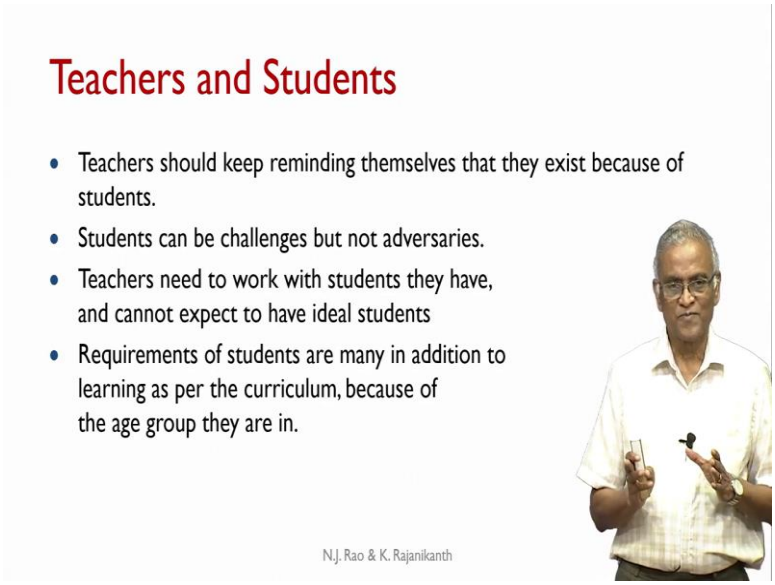

Now, we also want to talk about teachers and students, how should students look at teachers how teachers should look at students? First thing is teachers should keep reminding themselves that they exist because of students if students are not there. We are not there. We do not have those jobs. So, to that extent, you should not, no teacher should ever considered students as a nuisance.

Students can be challenges. All students are not the same each student has come with his or her own background. And they can be challenges but they are not adversaries. So, no teacher should consider students as adversaries. And also it is like this teachers need to work with the students they have. Here you do not have any choice. Because there is a type of institute you are in. You get some students there to work with them.

And cannot aspect expect to have ideal students. See my students do not work or they do not have abilities. How can I teach, these all are useless you cannot get into that kind of statements. So, we have and we talked again, once again about instructional situation, each one of us are stuck with a particular instructional situation, which contains certain type of students, certain type of management, and certain type of infrastructure and so on and on.

So, you have to work with them and do not ever expect to have ideal students. And another thing about the students coming two or four year engineering program, they come in an age group somewhere between 17 and 21. In that age group, the requirements of students are many in addition to learning as per the curriculum.

So, you have to acknowledge that and why they are in that particular position is because of the hormones you can say because the way the students in the age group look at the world are not the same the way let us say somebody who is 35 or more years, looks at the world, and they are in the process of growing and in fact we need to support them during the process, some of them will end up with a lot of what he called wrong endings to their to their programs. So, the requirement of a teacher is to understand that understand, how the students behave in that age group and provide the at least ensure the system provides the required support.

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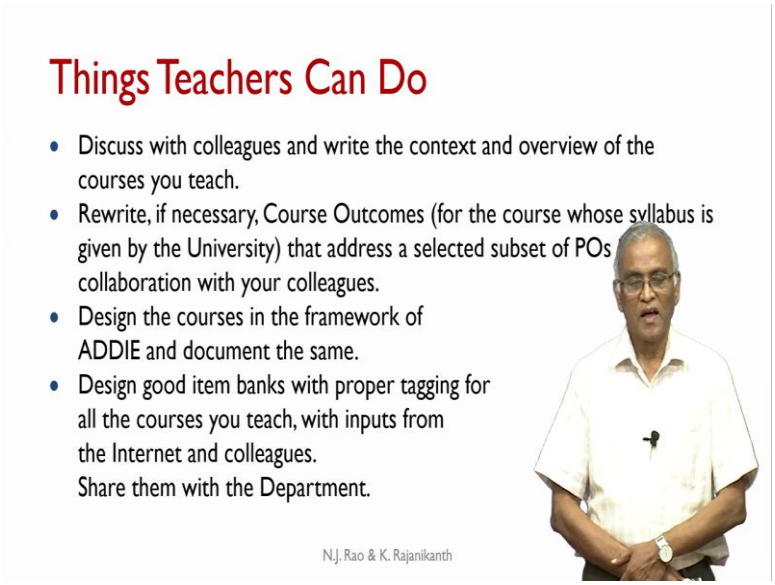

Let us look at things teacher can do. Discuss with colleagues and write the context overview of course you teach, which not very difficult rewrite if necessary the course outcomes for the courses syllabus is given by the university that addresses selected subset of POs in

collaboration with your colleagues. The process we have already given you as a part of OBE that is module 1.

So, right course outcomes properly if you want rewrite course outcomes for the same syllabus, and design the courses in the framework of ADDIE and document the same. Once you do that incremental improvements will greatly help. Design good item banks with proper tracking for all the courses you teach with inputs from the internet, and colleagues, share them with the department. This is these are the things that teachers can do.

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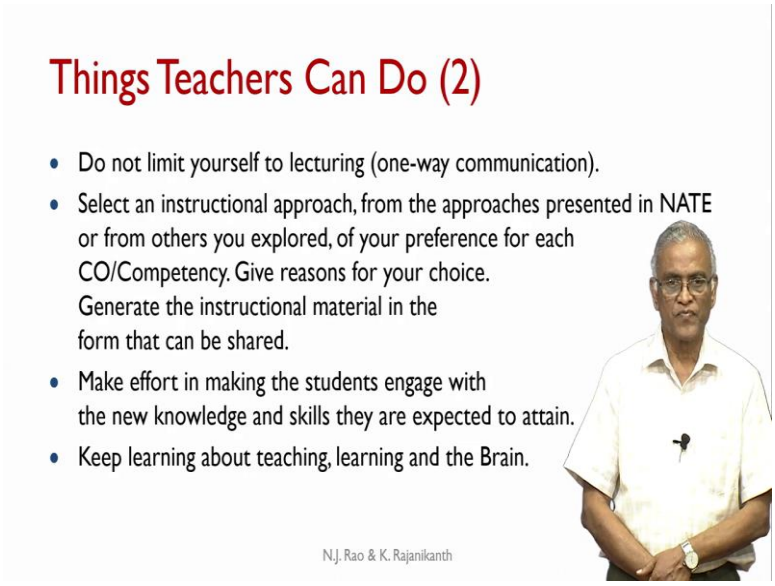

Do not limit yourself to lecturing. Do not only hang on to the instruction method of lecture for in a 55 minute class or one hour class, you are talking more than 15 minutes in the classroom. Do not you have to do in some cases, but do not limit yourself only to that process.

Select an instructional approach from the approaches presented in NATE and from others who have explored identify your preference, preference for a particular instructional approach for each CO Course Outcome or competency and you should be able to write reasons for your choice you document initially for your own consumption and generate the instructional material in the form that can be shared.

Actually, this is what teacher can do in this area. This is called a SOTL. Scholarship of Teaching and Learning because you should treat your classroom as a as a laboratory for your research. What is your area of research, teaching and learning and if you and you have

everyday you have access to the laboratory. So to that extent, you are collecting lots of data you are experiencing. And if you are able to document that and you are experimenting in that, this can be shared. And in fact, you can publish.

That is what all teachers can do, because they have access to the laboratory. They have access to subjects and they are doing it every day. So, your experience is phenomenal in that in that form. So, you can make use of this opportunity. And you can contribute to a SOTL that Scholarship of Teaching and Learning.

Make effort in making students engage with new knowledge and skills they are expected to attain you must provide time and facility for students to engage with the new knowledge, not just listen to the new knowledge, they must engage with that and keep learning about teaching learning and the brain. There is plenty of literature you do not have to buy any books there are plenty of them are available on internet. So, you should make it a habit to keep learning about teaching and learning and the brain.

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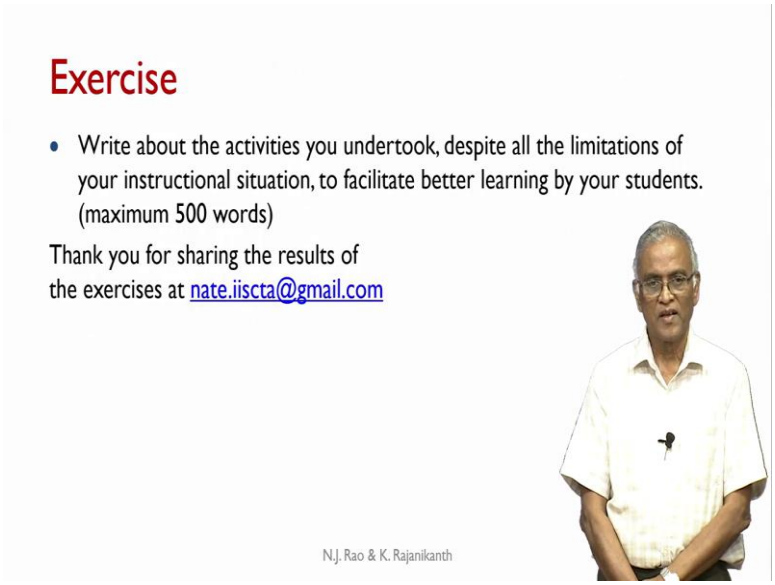

So, we request you to write up for the activities you undertook, despite all the limitations of your instructional situation, to facilitate learning by your students, what are experiments we have done? If you feel positive about it, please write maximum 500 words. And we thank you for sharing your output of your effort with us.

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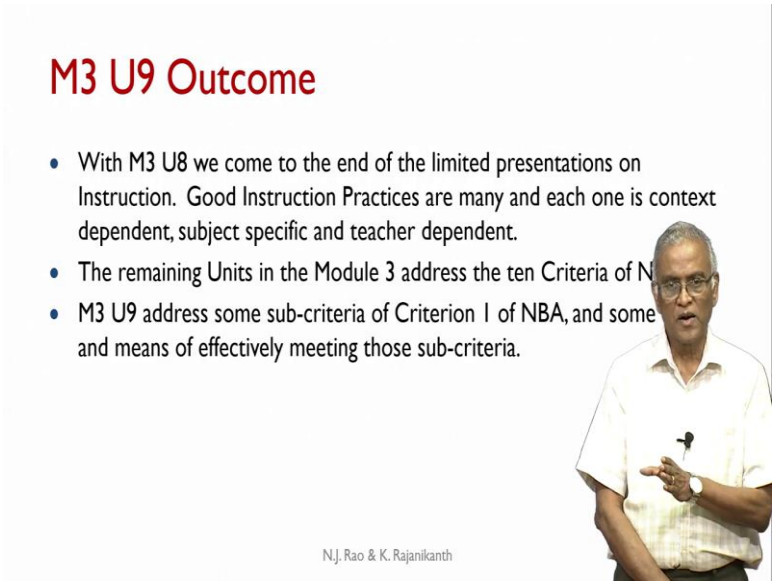

With M3 unit 8, we come to the end of limited presentations and instruction, we have not presented you all the instructional methods and approaches that are there in the literature. So, we presented some of them and with this unit 8 we come to an end. Good instruction practices are many and each one is context dependent subject specific and teacher dependent.

So, there is no universal good method of instruction. There are many, the remaining units of this module 3 address the criteria of NBA. So, from U M 3 U9 from that to the rest of the course, we address each criteria of NBA there are 10 criteria of NBA and each criterion has some sub criteria and we will present the how to hack how to deal with this each criteria in what way it will have effect into effect on your instruction.

And will also recommend some ways and means of effectively meeting the sub criteria related to that, but what you should remember the sub criteria and the way it is measured, the attainment of each criterion is measured and translated into some marks and what kind of exhibits you should, you should create those are the ones that decide preparing SAR for your department.

So, we will try to talk about all those aspects about the marks that you have for each sub criterion and also the kind of exhibits that you have to make, prepare for presentation to the visiting committee of NBA. That will be the goal of remaining units of Module 3. Thank you very much.