NPTEL

NPTEL ONLINE CERIFICATION COURSE

Course
On
Education leadership

By
Prof.Atasi Mohanty
Centre for Education Technology
Indian Institute of Technology Kharagpur

Lecture 31: Innovative pedagogy and technology
For learning (contd.)

Welcome viewers to this NPTEL course on education leadership so in the last class we are discussing about innovative pedagogy and technology and its users in the taking learning process so we have already discuss about collaborative learning team learning and its benefits and advantages so today we will discuss about one more technique that is called a project-based learning technique so project-based learning techniques.

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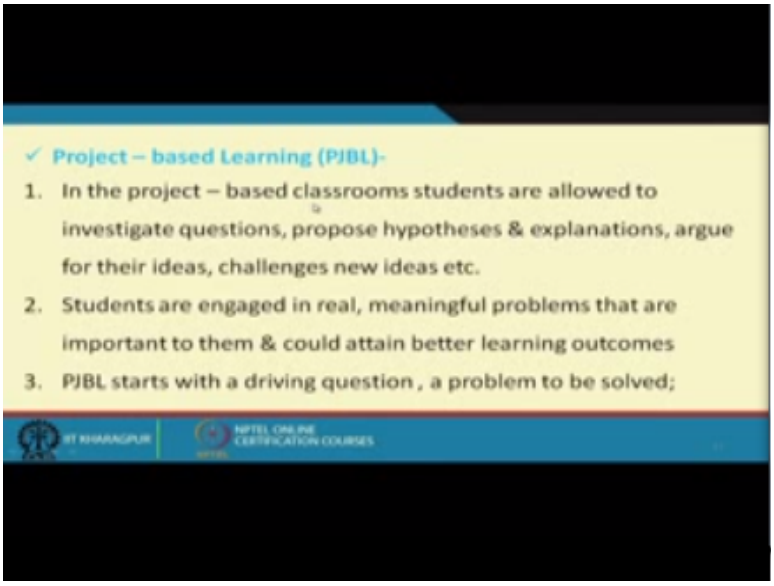

It is also similarly similar to that kind offloading learning or the collaborative learning so let us find out its ending our individual characteristics features of project-based learning for India project-based learning and classroom students are allowed to investigate the question propose the

hypothesis and explanations argue for their ideas challenges the new ideas Assessor so in the project-based classroom Pacific students are exposed to different kinds of questions different kinds of question.

And they are allowed to pick up any of these questions and investigate and you investigate while investigating the proposed different kinds of hypothesisformula different hypothesis and put forth their strategies and their explanations and your for their idea when said their views and challenges are new ideas like in terms of the new mechanisms new started strategies they are offering so they challenge these things and any other new ideas.

So they also challenge those new ideas so two teens are engaged in the real meaningful problems that are important to them could attain better learning outcomes students are engaged in real and meaningful problems the problems are usually like are not a very vague or mean or irrelevant but rather the real life problems they are engaged in active meaningful problems which is all problems are very authentic it is very meaningful to our real-life situation and it is it feels very important.

And while analyzing this kind of problem like they will get better learning better and knowledge acquisition right for example suppose the problem is like as the president after that you just design a marvelous house designing as mart village with 24/7 energy electricity power and inner energy sources water sources and health facilities so you just design marvelous with all the sleep characteristic features which one for seven electricity.

Or the energy power sector where energy is there and you know mom what is the water as the resources should also be there 24 people should get seven four seven water and helps facilitate the minimum so with how-to fulfill these three criteria in a in the context of for designing a smart village so there is a realized problem the problem becomes very attentive.

So they start actively thinking planning and hypothesizing on formulating the strategies like how to design a smart village word form to get the energy sources and how to make it sustainable and again how to ensure the water isothere for 24 hours and what is the source of water and then how to use it sustainably then again helps facilitate and how to establish health facilities and what should be done what should be done does that mean certain points and how to develop the network.

So that we can connect these all these three things on water and then health facilities and the energy always say combined now we can develop network so and how what is the population of that village then what should be the other infrastructure and how to ensure that people use all these resources get these resources but again user sustainable there is a kind of real life problem which relates to our life our existence our environment etc.

Project-based learning starts with driving a questions and problem to be spawned so in such situation if we give them some kind of problem but the question which relates to our real-life situation or the problems we are facing it becomes very authentic and they start actively thinking about it.

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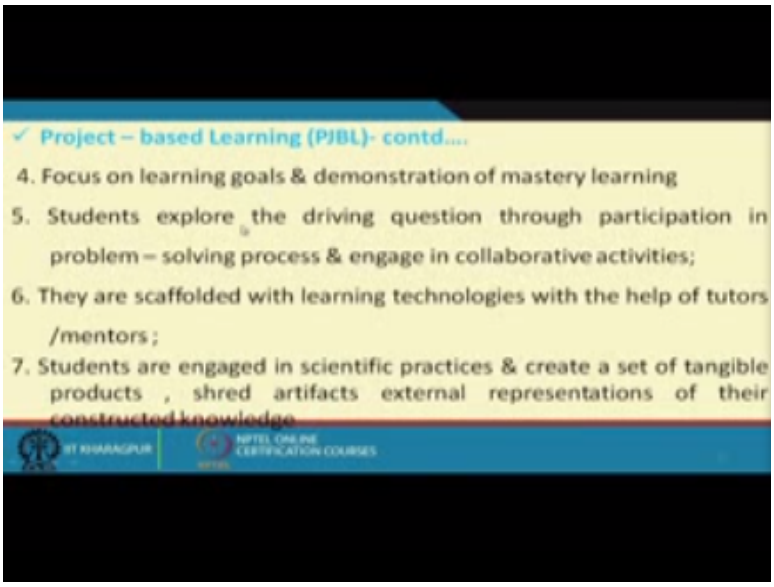

So the focus on the learning goals and demonstration of the mastery learning so while trying to answer the questions are solving the problems so they focus on learning gainsay the same time and demonstrate masculine unless wanting to focus on the learning goal they cannot acquire the knowledge and the skills and the competencies are achieving that goal and they cannot demonstrate the mastery of the learning.

So in order to you know in order to demonstrate it in order to physically make it possible and manifest it whichever way they you know design and the hypothesis the design hypothesis or formulate the strategies they have to not only acquire the subscales competences etc they have to exhibit demonstrate the Masters mastery learning things also the students explore the driving

question through participation and in problem solving process and inclusion collaborative workfare from the one crossing one big question wonder.

From those one problem they also try to explore the many of the sub questions from many of the attaché questions many of the other four other sub really fucked off related questions and they try to explore it through participation so participation or active engagement in their problem-solving process and then gave themselves in the collaborative activity so the problem is not even though they have even though these they have identified the problem.

So the but they prefer to work together in a collaborative system set up so in the collaborative setting when they are discussing about the questions they explore the sub questions then again they engage in active analysis of the problems and there are different problems the soft problems the soft path the resources and how to join it so then gives emphasis the collaborative activities the scaffold there are they are scaffold learning technologies with the help of the tutor sentimental but yes even though their own they work in the collaborative learning situation are engaged in collaborative activities at the tutors.

And mentors are there to support them to facilitate them through scaffolding which technology for their tutors are also there to help them out in learning the new skill or in developing a new perspective through the hype of Technology through the help of the tools so students are engaged unscientific practice and create a set of tangible products so in this collaborative learning or in this project-based learning students are engaged in scientific practices.

The practices for the techniques the strategies they use which are very scientific and authentic and ultimately they create a set of tangible products the products which are valuable which are usable with your unit tangible and share the artifacts external and representing whatever they have developed maybe they have developed some model there maybe they have developed some software maybe that they have developed some kind of gadget.

So they exhibited it and show it off so they share the on the products and the share and share the artifacts external representations of their constructive knowledge for how they have accumulated knowledge how they have gathered the experience how they have conceptualized how they develop this comprehensive model of artifact they exhibit a - they demonstrate it the next another type of thing is the problem-based learning.

So problem-based learners the collaborate in understanding solving the complex an dill structured problems. So it is we can say it's very much similar to that kind of project-based learning also all the project based learning problem-based learning it also involves collaborative learning but in problem-based learning one thing is that the learner score of collaborating understanding and solving the complex problem but the problem is self is very unstructured it is not very clear it is not very specific.

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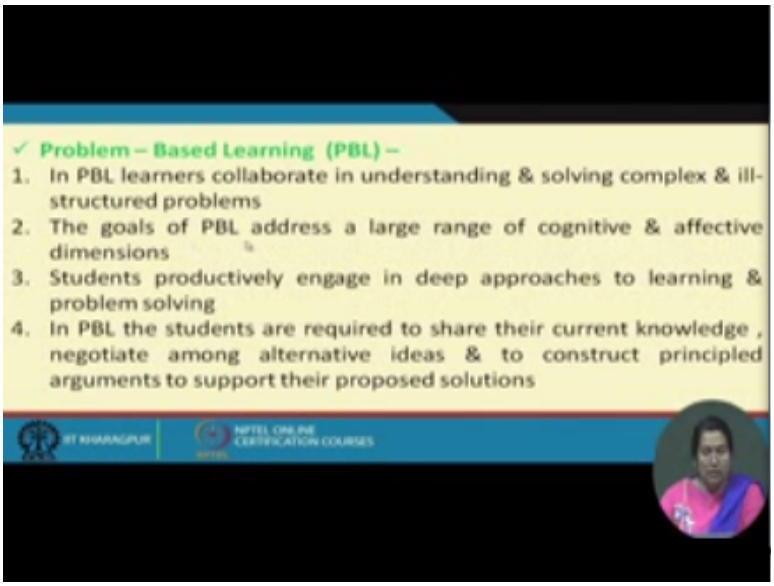

It is not very you know specific in terms of its context as it is of those problem is in structure it is a complex in nature and there are learners they have started to collaborator started to understand the whole thing by collaborating with each other in the guru context so the goals are tibia a PBL at this is a large range of cognitive and affective dimensions so again the first thing is where the problem is Sultan is a very complex and in structure and it needs to be explored in terms of its either complexity in terms of its dimensions.

In terms of its resources in terms of its causes in terms of its factors affecting and affecting it so doc by primarily focuses on how to unfold how to uncover how to unfold these dimensions this covers the causal factors with sources all kinds of things so it involves all kinds of cognitive that is intellectual exercises as well as affective dimensions lies in terms of interest motivation involvement among the learners.

So students productively engage in a deep approaches to learning and problem solving so here at this kind of complex problem which is very you knowsuperficial which is very complex which is very ill structured it cannot be resolved it cannot be solved with superficial kind of knowledge always kind of for any kind of surface learning surface learning approach but rather require deep learning approach for here you have to go to the depth of that in depth of the complexity of that problem so that means.

So to analyze it I you can say to you can say to you to fall back diagnose it in terms of the causal factors etiological factors and then the background its history its the sources of information and all kinds of critical dimensions to that means so it requires a kind of in-depth analysis or tensor deep learning approach so again in a PBL the students are required to share their current knowledge negotiate among the alternative ideas and to construct the principal arguments to support therefore most solutions like other collaborative learning techniques also here.

There are students all the partners or the students there are ready to be have to quickly readily share that knowledge existing knowledge current knowledge so they are required to share their current knowledge then negotiate among the alternative ideas like they have to actively listen to others proposals their plans and perspectives then explain there are thoughts and ideas then negotiate among these alternative ideas like which idea.

Would be more feasible will be more cost-effective would be more a Content ejector like this and to construct the principle of argument and again to design some guidelines principles and great violence to talk down some of the basic principles guide length under which they can slowly move ahead progress and so construct the principal arguments to support their proposed solution if and when they're engaged in the debate and dialogue or like finding out which one is the best one which approach will be the most effective one etc.

So they have to do in favor of their own views own ideas on time thoughts have certain to prove it that yes it is more useful and not contagion beneficial so by citing or the lab exciting the evidence of some of his cost-effectiveness or arms so stating the arguments in favor of their ideas and in a logical manner in every our very own scientific manner in a very objective manner.

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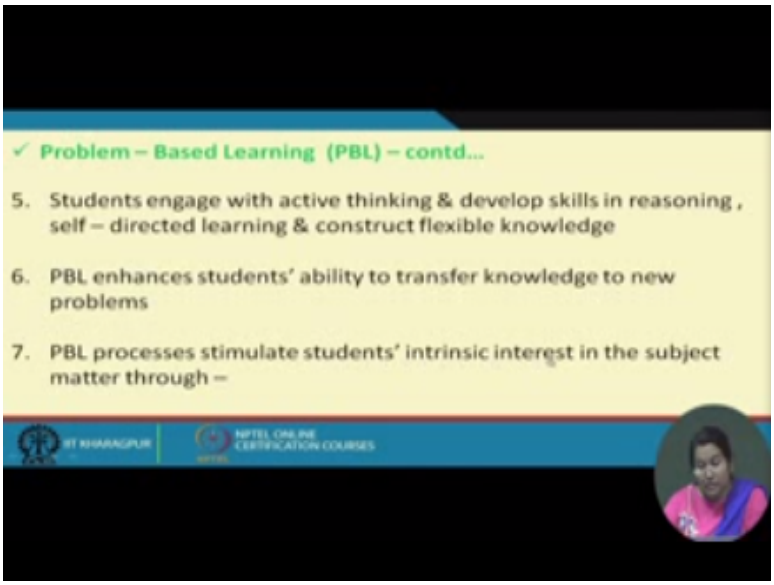

So they can propose their solutions and strategies in a very logical manner by manner by putting their arguments in support of their ideas so let's engage with active thinking and develop the skills and reasoning so when they put for their ideas try to defend their ideas I to prove that their ideas are very effective or cost effective or less time-consuming or more fruitful or inters of its benefit is more beneficial etc.

In that process the develop skill reasoning skills reasoning skills rational thinking skills while by being engaged in the active thinking so and again it becomes very self-directed learning and constructive flexible known as well again it moves towards selfdirectlearn because they get motivated to explore themselves by being an independent learner.

So they sell that with the direction to their own learning experiences and engage in the construct constructive common flexible knowledge acquisition like they construct the knowledge or flexible knowledge by actively being engaged in the learning process and them self directed in

their learning behavior then problem-based learning again it enhances students ability to transfer the knowledge to the newly a new problem.

So not only make them very flexible in constructing the knowledge and giving the self direction towards their learning behavior but also it helps them in actively thinking about the new opportunities or the new situations the new opportunities are in case of the new problems how this kind of exercises of practices and behavior can help them in resolving the new problems also so regarding the transfer of knowledge also they become very adaptive and you know the way.

We could become very innovative as well so PBL also processes the processes and step of stimulate the students intrinsic interest in the subject matter so it also stimulate the students intrinsic interest that inherent interest or you can say implicit interest for being motivated towards a particular subject matter because as because they are actively engaged and they face the challenges and they get satisfaction out of those challenges they are going while.

I am taking up the challenging path so it enhances its stimulus students intrinsic interest in the subject matter through certain techniques like through activation of the par anal is whatever they have already acquired so they recollect it so recapitulate it in and put forth before order so that is the activation of prior knowledge so try to they actively try to recollect recapitulate remember the whole things the past learning past knowledge both learning experiences etc.

Try to make it more comprehensive and put it before others that is activation of prior knowledge recall of information definitely recall the past learning experiences and knowledge cumulative reasoning so when they are engaged in logical thinking rational thinking they keep on adding these things in accumulative weight not in the very discreet manner but in a very additive and cumulative manner so they add theological reasoning and on the basis of that sometimes they build up their own.

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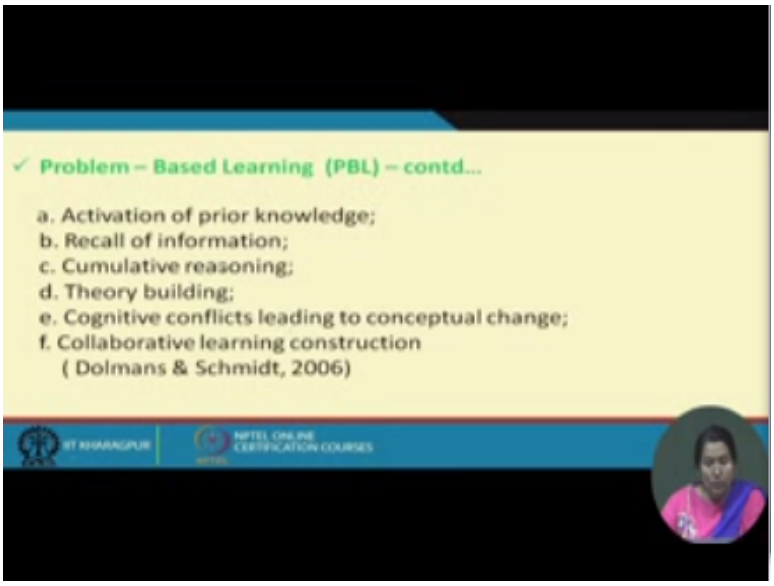

Theory also Theory building it helps them in theory building and cognitive conflicts leading to conceptual things so when they are engaged in a debate dialogue and communication and you know discussion about discussion or critical appraisal of different schemes and strategies etcetera and they're engaged in cognitive conflict it also tendons that are conceptual and knowledge in the sense that like at the end when they agree that yes here this kingdom this scheme is cannot be successful because of these degree fallacies or this is not the proven technique this and that.

So after that they change their own conceptual understanding about the concept also so it brings also some kind of conceptual or structural changes in that came out the concepts so and again collaborative learning construction so collaborative it also enhances the collaborative learning concept construction so all these processes are done you know outcomes of the active engagement surrender as students learners are actively engaged in all kinds of activities.

So they take interest the tick King interest generally you can say interested interest in taking number taking up the subject taking up the new projects taking of the problems because they find satisfaction out of it so here we can have a look of this you know table like suppose this is the problem scenario problem scenario it leads to our stuff now identify the facts like to identify its dimension perspective flags causal factors etiological concern etc.

Then on the basis of sources facts information is better than we generate the hypothesis multiple hypotheses like why did you happen who has initiated gaze on what is Israel’s history what would be done how it has affected theotheraffected the environment of the people are distance so

on the basis of these ideological factors then we generate different hypothesis number one two three four five sectors again from there then we identify the knowledge gaps or the learning issues.

So we generate different hypotheses then try to examine the authenticity of these hypothesis in terms of from finding out the knowledge gaps are the learning issues from these hypotheses what you have learned how it can be implemented executed so what are the knowledge gaps are there and the learning issues are there then we identified from there again engage in the self-directed learning.

So as we have already discussed we have to engage in active and knowledge efficient learning so engage in the self-directed learning and to construct and reconstruct our own knowledge then thereafter apply the new knowledge to the problem so whatever solution we get the strategies we formulate then we apply to the new knowledge in the problem then we evaluate its efficacy then we evaluate its efficacy and after evaluation we reflect upon it reflect upon it.

And then with modification or without modification whatever we have found that this is the most effective one then we again travel back light in the future situation so we can say it is that these are the steps of the problem solving problems and solving situation or any problem-based learning situation so these are some of the strategies explained by these authors like satin is how the studies can help the problem-based learning in terms of you know revamping the thing summarizing the whole things.

Evaluate how to evaluate the hypothesis and Pacific had the students to focus on their inquiry etc these are some of the status is given here and not between the symptoms and hypotheses and cleaning of the boards creating the learning issues and encourage the construction of the visual representation so the Reebok we knowable of a set of strategies which can facilitate this problem-based learning.

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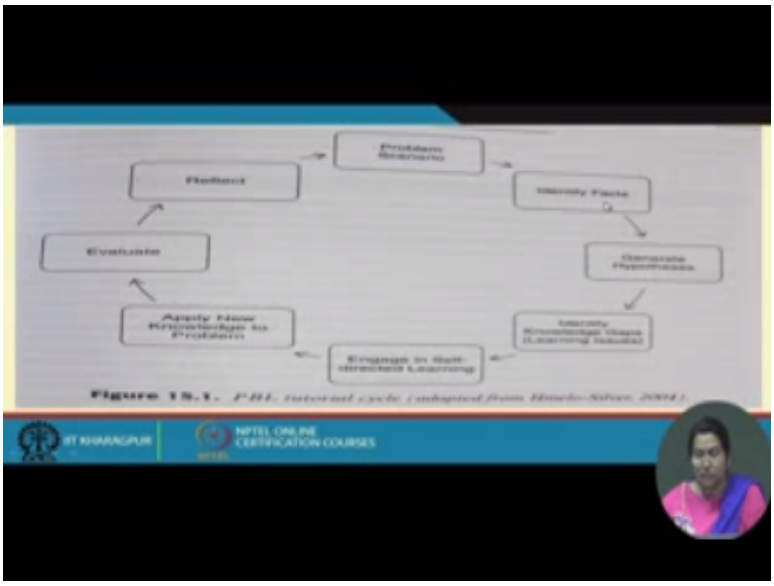

So now we will discuss about ham next ask that is the web-based learning now in this my Sydney is four so we can we are also getting the learning materials in terms of video recording in terms of you know you know course materials being uploaded in the websites and the portals so and so online instruction so that different modes are both online andoffline modes through which we can get the learning materials.

So web based learning is one such technique web based learning is one such technique where the presentation of lessons through multimedia material that takes animation graphics video and sound all these things are being uploaded in the website in the website you can find we can find out all these materials the lessons have been prepared through multimedia original material I play with text animation graphics etc.

So the lessons the topics are the content have been designed and prepared well prepared with the help of the la multimedia material and these are already off and these are uploaded in the website itself so learning resource materials like downloadable lecture notes so when all this material course material learning materials have been uploaded in the website so we can easily have the we can easily have access we can easily get all these materials downloadable.

Or we can have easy access to all these learning resource materials like downloadable lecture notes all the lecture notes which have been uploaded in the website we can download it at any point of timewith our convenience with our comfort so synchronous lecture video synchronous

my lecture videos are also their homework problems for homework problems course or the project outlines technical support.

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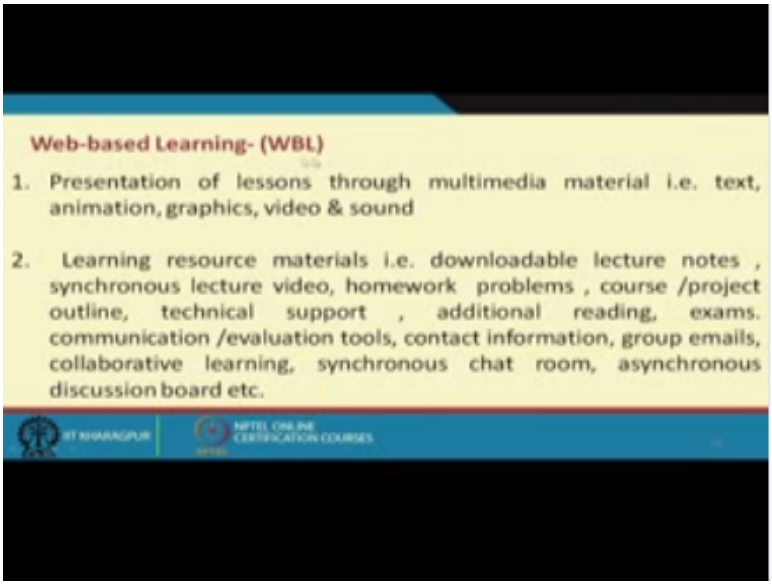

So you know additional reading materials then the example and communication evaluation tools contacting formations group emails collaborative learning synchronous start to my synchronous discussion board etc for the web-based learning these are the characteristic features easily downloadable lecture loads synchronized video lectures are also their homework assignments are being given course outlines are their technical support are there.

So now come occasion and evaluation tools are there how your performance is going to be evaluated contact information's are there to clarify your doubts then group mails and are there for the collaborative learning than the synchronous chat rooms are there are all kinds of discussion forums both online and offline are available in the web last hour in the web portal so the construction of knowledge.

So participation and reflection learning via Internet so here the knowledge can be constructed and co constructed through participation and reflection and through internet and internet are given as accessibility to learn and these are materials to easily download these materials and to have discussions on the topics covered in the courses so greater focus on assign learning tasks with informational sources some tasks are there from assigned tasks learning tasks are also there in this work portal which primarily focuses on developing certain learning skills.

So greater focus on the assigned learning tasks which have been given to the learner for the weekend assignment and order week and assignment or quarterly assignment etc which focuses on learning certain skills now students.

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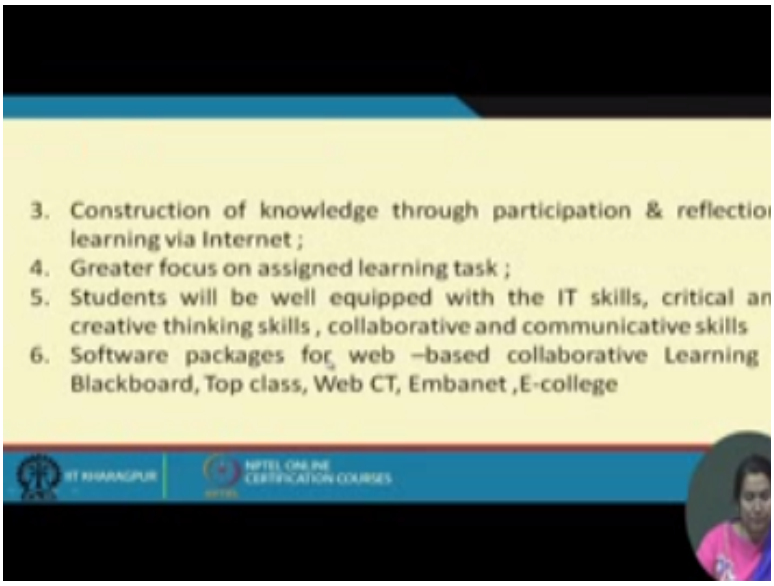

So this will be well equipped with the IT skills but for this kind of course web-based courses the students all the learners they have to be very well with equipped with IT skills for mationtechnology skill as it is field left very critical and they have two very critical and creative also in their thinking approach collaborative and communicative skill for students will be well equipped through this web-based learning they not only develop the IT skills critical thinking skills creative thinking skills.

But also develop the collaborative and communicative skills because maybe that they have been assigned a group assignment and they have to collaborate with other team members were the virtual members burger and the synchronous or chartroom or asynchronous the discussion forum they have to communicate to with each member they have to come collaborate with other members and complete staff so in this process even though it is not the web portal it also enhances the students IT skills critical thinking scale collaborative scale communicative skill.

As well as the creative thinkingskills the software packages are already available packages for the web this collaborative learning are like you know blackboard Model is also their top class wave signal CPM Bennett ecology the some of the software packages forth web-based collaborative learning that is to facilitate the web-based collaborative learning modules that means.

So these software's how the group members team members the learners they can collaborate with each other and complete the tasks the software facilitates original collaboration and the collective communication and instructional knowledge and in the web portal the learning and task on learning resources and the course contents are already there so ICT for supporting thelearning of online courses for distance learning final it is being used for the distance learning and distance learning and distance learning programs through multimedia resources.

Multimedia resources are being used in conferencing video conferencing also facilitates or the discussion forum sometimes and video streaming live lectures are also be used for this syllabus courses then hyperlinks for the vast amount of web-based information like in the web portal suppose visual your volume of other information sources are in there so this can be connected to the harm wave portal connected to the relevant course from portal through web link through hyperlink through the highboy tab content context then landing at one's own pace.

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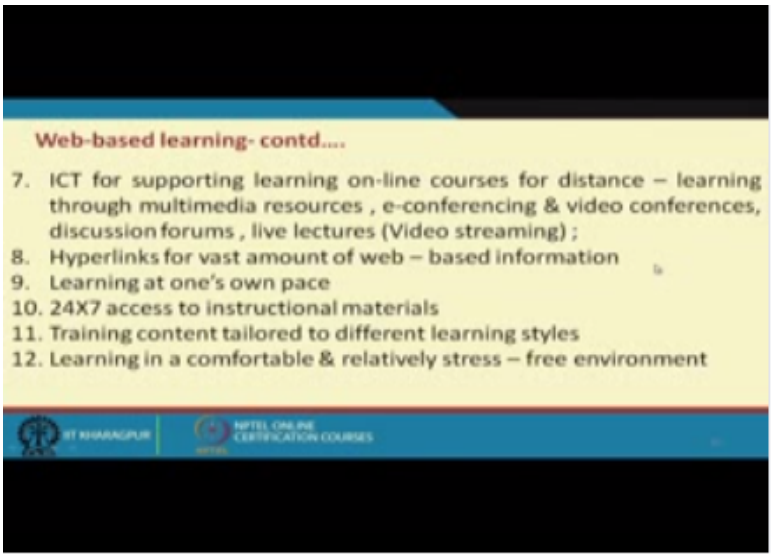

So here all it also enables for learner to learn at is foretime at his own time and to put it in a museum that will come for Joan and he can take the liberty of for you know completing the task which is relaxing is the next time with sufficient time and in whichever I am in a space with a purpose he wants to move on the inner speed the accuracy it depends on him how you complete the task then 24/7 access instructional materials because as because the materials are there in the web portal already.

It is their inverse button so you can have 24/7 access to these materials training content had tailor to different learning cells so these are web courses are also being designed to cater to the learners needs also having different learning styles straining the content trainee some incase of the some kind of training courses programs or contents are being tailored according to the different learning styles of the learner may be that with all kinds of multimedia material select our data.

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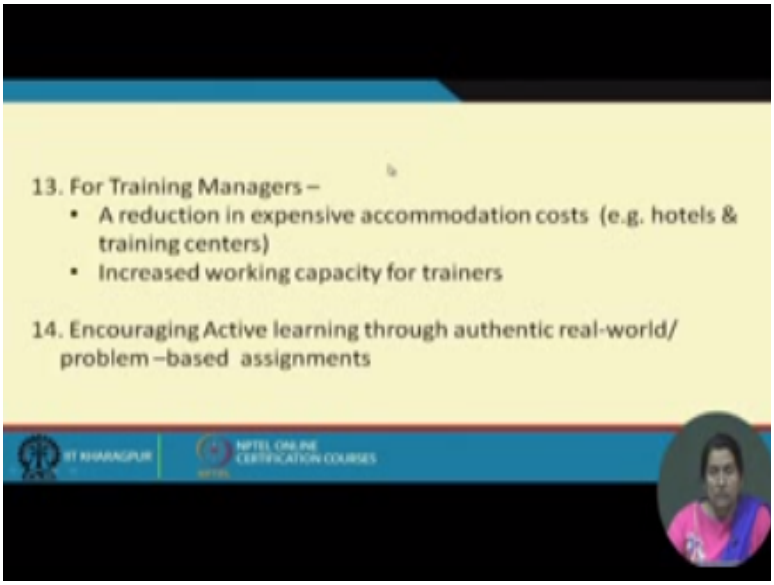

Learner is visual learner were a verbal learner or you know pick Lana what kind of learner it can factor to their needs learning in a comfortable and relatively stressful environment for the individual the learner individual learner can find his own time get the liberty to have the access to the learning material another internal go into total internet ago with and can complete his assignment that is one space so for training managers also.

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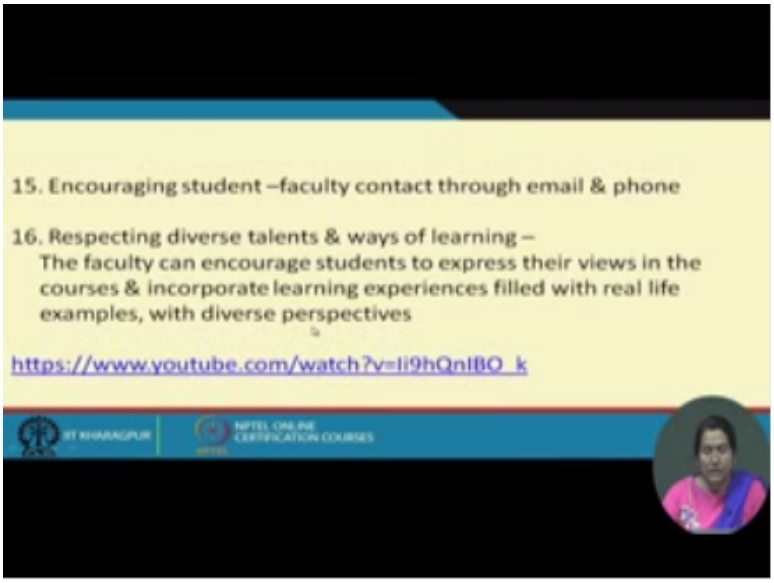

So these are now these web-based training programs also it reduces the cost and reduces the cost and expenses like a reduction to expensive accommodation cost so when we designed attaining program for professionals for the teacher for another uniform marketing and people or any other professional groups say it reduce the cost pencil for the accommodation and increase the working capacity of the trainers because the people will be less adjusted in commuting or in traveling.

So it reduced our not only the expenses ofaccomodation cost and what will cost and you know communication cost etcetera but it also includes the working capacity and it was encouraging the active learning through authentic real-world problem is an assignment so it becomes very active that this kind of web-based course become very interesting very active when it involves for any kind of authentic real-world problems.

So then it becomes very encouraging and the students get more motivated and we can be motivated because it simulates our it involves a real-world problems and assignment so again

encouraging the students orfaculty student faculty contact through email so they can they can have a human interaction like the student faculty students faculty interaction through email through phone Minnesota so it can be made more lively or it involved inhuman communication and respective diverse talents and ways of learning.

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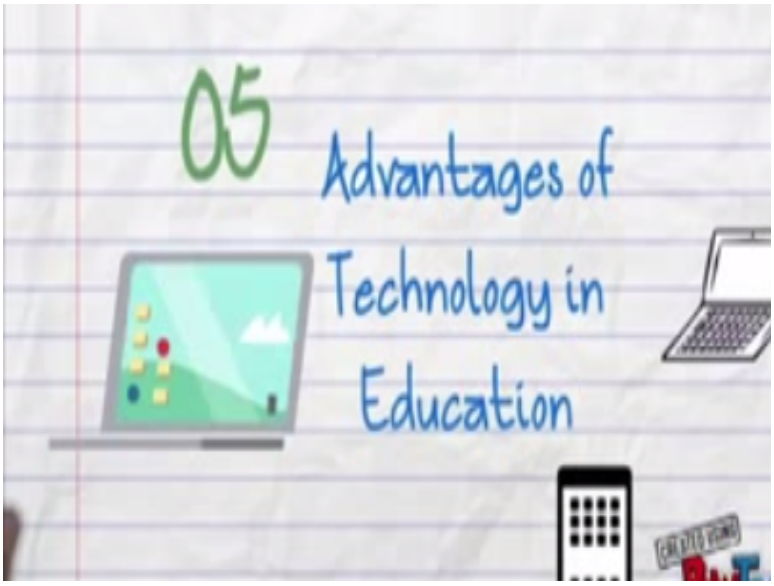

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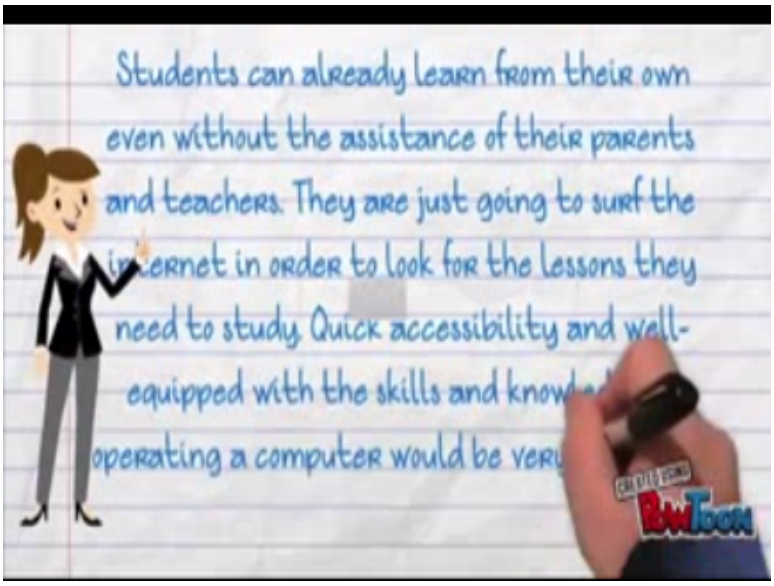

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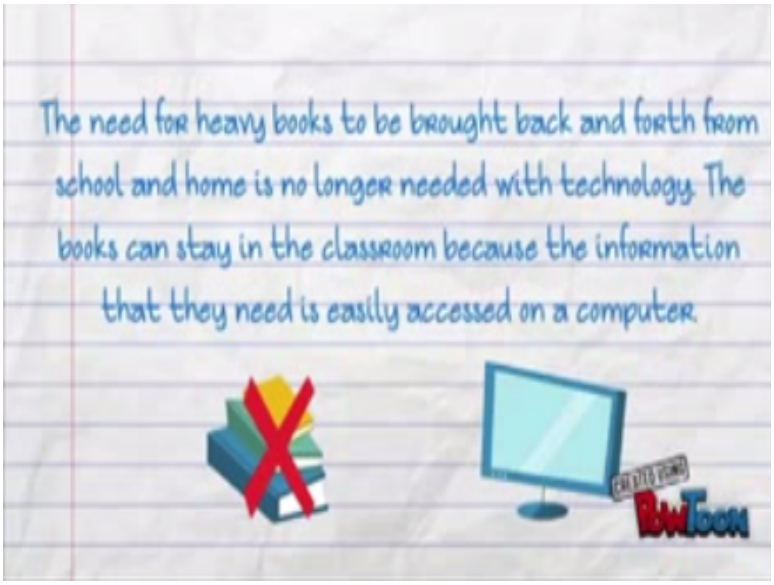

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So it also a respect firm it also promotes the diverse talents different talents and different kinds of modes of learning ways of LAM learning like the faculty can encourage the students to express their views in the courses and incorporate learning experiences filled with a real-life example with a diverse perspective so as it is very open kind of platform for the faculty while interacting with the students they canals invite them they can also encourage them to cite some of their real-life experiences and share it with others the learner and incorporate.

These things in the course and also to bring forth or any kind of diverse perspective diverse in terms of diverse cultural perspective or diverse from you know situational context etcetera so it canals be incorporated to make it more interesting and lively so here we can see one YouTube video created using pontoons here you have this finish this web-based learning mode Hargerinnovative pedagogy for 21st century learning now in the next class we will discuss about a new topic new better version.