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**NPTEL ONLINE CERTIFICATION COURSE**

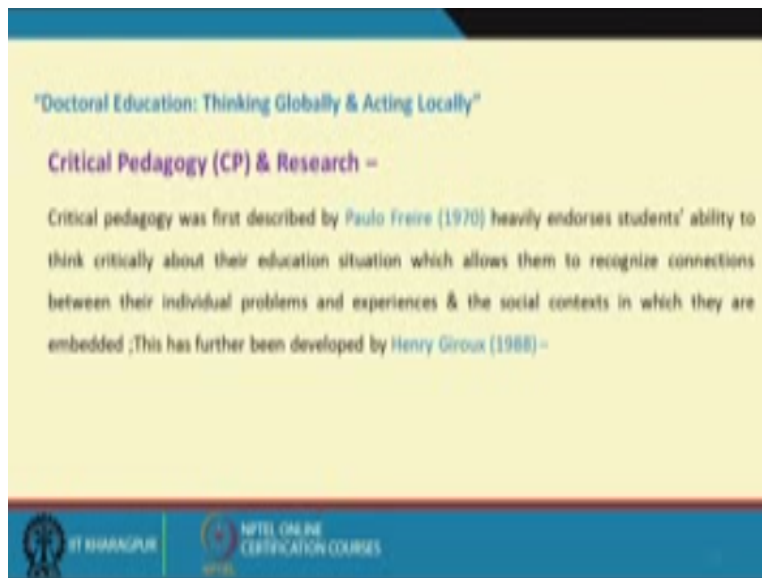
**Course**  
**on**  
**Educational Leadership**

**by**  
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**Center for Educational Technology**  
**Indian Institute of Technology Kharagpur**

**Lecture 27: Educational Research and pedagogy**  
**(Contd.)**

Welcome viewers one second to this NPTEL course on educational leadership and in the last class we are discussing about educational research and pedagogy how these two components so interrelated to each other and we have already discuss about the doctolisi program it is benefits is factors contributing factors all these things now today we will discuss about one such important theory in research.

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There is a critical pedagogy theory critical pedagogy theory and how it is related to research or how can we detect the benefit of this critical pedagogy theory for our research purpose, so

critical pedagogy actually is a theoretical framework it is a kind of paradigm so which advocated for certain parameters, parameters for measuring the effectiveness so critical pedagogy was first described by Paulo Freire 1970 heavily endorses the students ability to think critically.

So critical pedagogy is a theoretical framework one it is a paradigm been developed by a group of researchers and they primarily advocate or they want that the students should enhance that built it to think critically like whatever we are learning whatever this from being the student whatever we are learning the course content the curriculum the pedagogical thing we go through which should not blind the accept it as it is, so we should think critically so hence they advocate for the suggest for the promotes for the students.

Should think critically whatever they are they need go through the learn they must think all this things in a critical way evaluate these in the critical way about their education situation the whole education situation in which context we are learning that allows them which allows them to recognize the connections between, between their individual problem and experiences and the social context in which the embedded and suppose I have I am learning a program on sociology like for example.

Sociology or education or physiology or chronology suppose I am going through a course I am doing it my post graduate de polyamine these subgenera versus this subjects, no so critical theory a critical pedagogy theory advocates that bring a student also sociology being a student of an anthropology I must evaluate I must think critically let the in which the situation I am learning these things and how what is the relation what is the connect between these studies courses of studies.

These topic these programs and my individual problems like for an to what extent my course and my studies my programs is going to help me in resolving my individual problem, my experiences my subjective experiences and the social context in which I am embedded the social context then the situation in which I am leaving, so I must critically evaluate all this factors that means whatever I am learning I am studying whether it is benefiting me helping me in identifying in resolving my individual problems or in resolving in some other social issues some of the issues some of the social conflicts.

Delay mass etc.. how it is improving my experiences and in experiences and how it interacts with my social context in which I am embedded so this is the primary focus of critical pedagogy theory thus every student does not matter whatever they learn they must start thinking critically evaluating, the course content and how this related to their social context the individual experiences and the problems and how to resolve the issues, conflicts and the problems through the help of these subjects.

And the domain knowledge so these as for them been developed by Hendy Xerox 1988, so it as further been established by other authors.

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CP promotes relationships between teaching & learning ; It's a continuous process of "unlearning", "learning", "relearning", "reflection" & "evaluation"; It has 07 parameters for assessing the effectiveness of teaching – learning situation-

- Instructional Design & Delivery (IDD)
- Students' Learning Outcomes (LO)
- Assessments (ASS)
- Students' Empowerment (EM)
- Critical Thinking (CT)
- Social Presence (SP)
- Alignment (AL)

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And it promotes the relationship between teaching and learning so you know on the basis of that on the basis of that critical thinking now we need to establish the relationship between whatever we are teaching whatever are learning there must be proper linkage proper you know breeze proper relationship between teaching and learning because it is a continuous process of, so in the it is the continuous process of teaching and learning and their not just one way or just two way but or it is just a in the moving in the one direction.

Only but it is a continuous process of unlearning sometimes we need to unlearn certain things we need to learn certain things learn certain are things sometimes we need to re learn the things

sometimes we need to reflect upon the things sometimes we need to evaluate the things critically evaluate the things, so hence whatever the learning process it is a continuous process is developmental process, where vary of an we are engage in different kinds learning mechanism like unlearning certain things.

Relearning certain things learning certain things then again reflecting up an certain things literally critically evaluating certain things then modifying it or improving certain things so this is the thus critical pedagogy theory promotes, continuous modification of learning behavior continuous modification of the link case between teaching and learning improvement and the teaching and learning process and the students should be empowered the students should be empowered with such experiences.

Where he not only he can learn independently as a self learner independent learner but he has developed that critical thinking ability to evaluate the whole situation and to find out to what accent he studies his academics as helped he mean resolving his problems individual problem, social problems etc. that means it must have direct social benefit it must have the benefit to improve the quality of life or the quality of life on the other humans society for the development of the society.

Hence for accessing the effectiveness of teaching learning situations so in whichever context we teach in with the whichever context we learn may be at primary level secondary level higher level technical level vocational level whatever may be the learn, if you want to really major this effectiveness asses and evaluate its effectiveness, so they have given certain parameters so the critical pedagogy theory promotes thus these are the parameters they have identified 7 parameters on the basis of which w can asses and evaluate the effectiveness.

Of any program any pedagogical program any curriculum program design any content any delivery mode any in anything if it is related to teaching learning situations even though it is a new software even though it is a virtual lab even though it say you know it is technology tools whatever we can evaluate it, efficacy and effectiveness through these parameters so they have clearly identified this parameters first is that instructional design and delivering, that particular teaching learning context.

How the instruction how the curriculum has been designed to provide the instructional objectives how it has been design, how this instructional objectives have been delivered through teaching through teaching through content at the teaching learning and transactions and say that is the first parameters second is that students learning outcomes, so as the course has been design it has set some of the instructional objectives and expected learning outs, now at the end of the course to what extend the students.

Have learned so what is the actual students learning outcome then again 3<sup>rd</sup> is the assessment what are the assessment modes what are the evaluation techniques, what are the tools should I have use to measure the learning outcomes, so can these tools have be can this tools are reliable and the valid tools to actually measure the learning outcomes in terms of behavior in terms of actions in terms of actions terms etc... So assessment modes and evaluation are also important then students empowerment.

At the end of the course to what extend this students have been empowered, empowered in terms of knowledge and power in terms of skills and entire empower in terms of the positive attitude and so what are the independent learning ability and reflective thinking critical thinking creative thinking all kinds of this skills and competences, so what extent we have been empowered to be a self learner independent learner with all these higher order thinking skills of the pedagogical skill.

Skills like the critical thinking etc.. so next is that ES critically thinking is equally important because they advocate the students need to evaluate the whole situation so critical thinking is a must then the social presents as you know it is you know the critical pedagogy theory or the 21<sup>st</sup> century learning pedagogy it advocated for you know collaborative learning, learning in the community creating the learning community sharing the knowledge so because when knowledge is been shared.

Knowledge is been create to created co created by the community of learners it is use ability it is volume it is quantities quality is remains, so what is the social prices that means in which social context the teaching has teaching acts have been have taken place, so what is the social price over whether this student has learned it all alone or even though he has learned it that means he has the group he has the along these in a particular group may be that the material is engage in team work.

Project work these are etc and how all these aspects have been properly aligned to each other that mean instructional design the students outcome the assessment more students empowerment is ability skill in competence is critical thinking, his social president like in the being a part of the group or the team, team learning collaborative learning ability how all this aspects all this 6 aspects have been well integrated well integrated either through ICT.

Or different kinds of online or offline E learning tools etc that is a line means the proper everything has been properly aligned so that it is output it is result it is productive it will be immense, so these are the 7 parameters have given for measuring the effectiveness of any of the teaching learning program.

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**New Pedagogies & Deep Learning** (Michael Fullan & Maria Langworthy)  
 (January 2014)

- New pedagogies (NP) require students to create new knowledge & connect it to the world by using the power of digital tools

New Pedagogies

Ubiquitous Technology

Discover Content	&	Master Together
Personalized Learning	←→	Create & Use New Knowledge in the World

Deep Learning

- \* NP involves the creation & use of new knowledge in the real world;
- \* Mutual discovery, creation & use of knowledge;
- \* Enable by digital access inside & outside of classrooms

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Now the 21<sup>st</sup> century pedagogy says that it is a pedagogy of you know deep learning so with that you know with the advent of the ICT not only ICT artificial intelligence you know all kinds of high level you know a cloud computing in all technical terms cloud computing artificial intelligence internet if things all these computer languages, and cover emergent's of the

cognitive science, so it advocates for a new pedagogy that is the deep learning, so these are the authors they have started that.

The 21<sup>st</sup> century pedagogy advocates for the deep learning as with the enormous of the with the massive open online sources of resources learning resources so the new pedagogy required the students and to create the new knowledge to create new knowledge and connect it to the world by using the power of digital tools, so because you know digital revolution has that means has taken place.

Immense or massively massive so everyday or you can say every day where coming up with the new digital tool new as city new component, new you know educational tool so with the this digital evolution so the research is accommodations say that the new pedagogy now at the movement new pedagogy request students to create the new knowledge and connect it to the whole wall by using the power of digital tools, that means the students are not only that means they are not only suppose to create the knowledge but they must share it with others through digital tools, so it is of it is advocating more of sharing the knowledge not creating co creating the knowledge and sharing the knowledge.

Similarly in new pedagogy it involves the creation and the use of new knowledge in the real work by using this tools by engaging themselves in a collaborative learning in an taking up the you know very authentic problem real life problem out resolve it and up to resolving the whole problems and issues now they must share it they must share it with others line, now it is w are also same that we are also observing that social networking sides all the social networking sides are.

Actively engage involved with all kinds of knowledge sources knowledge sources so be it in general be to scientific tool beat a cognitive tool or being a unless or whatever it is instantly related to attached to connected to all kinds of social networking side , so that everybody must know it should know it are well aware of all this what is going on currently what is the recent phenomenon, so the mutual discovery creation and use of knowledge again new pedagogy advocated for again.

How to strengthen the collaborative learning cooperative learning that means mutual learning when we sit together and we work together we discover something in the social context in the

group context in the team context so then it is ability it is the potential is remain so mutual discovery and creation and use of knowledge, so let us sit together let us think to get the let us work together let us find out the solution for the common problem real life together and share the knowledge with others.

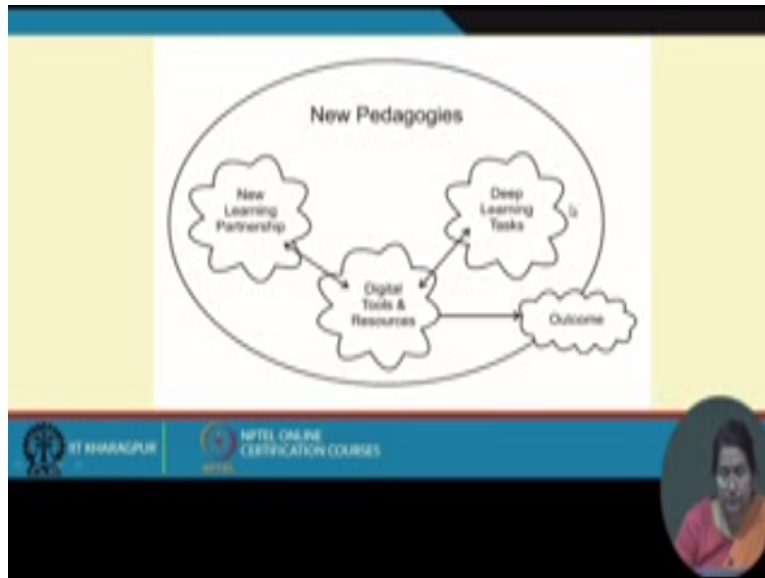
So and at also it also helps in enable by digital access inside and outside the classroom so new pedagogy advocated for the deep learning means to go to take up the issues or real life problem or any issues and go into the rest of that issue and try to find out or create this multiple solutions and then to share the solution among others the whole world all society etc and by using access these digital and tools techniques etc.. both inside the classroom as well as the outside the classroom as now you can see the new pedagogy advocated for the as the new pedagogy advocates for the deep learning so first thing is that you discovered the content discover the discover and master the contents and first you identify the content discover the content to get there so it is a always you learn we learn would to get their we work to get the wish we discover the things together.

So pedagogical capacity is there in one it aspect and crate and use a new knowledge in the world so these are the transactions like so through using the technology, so new pedagogy advocates for learning together take up the content and going to it is depth discover the content have the mastery over it, going into the depth of that content create the knowledge construct the knowledge construct the knowledge create the knowledge or rather you can say co create the knowledge.

Then you share it with one then you share it with the one so that is called the deep learning, so new pedagogy advocates for the deep learning by extensively using technology, both inside and outside the classroom and working together working together.

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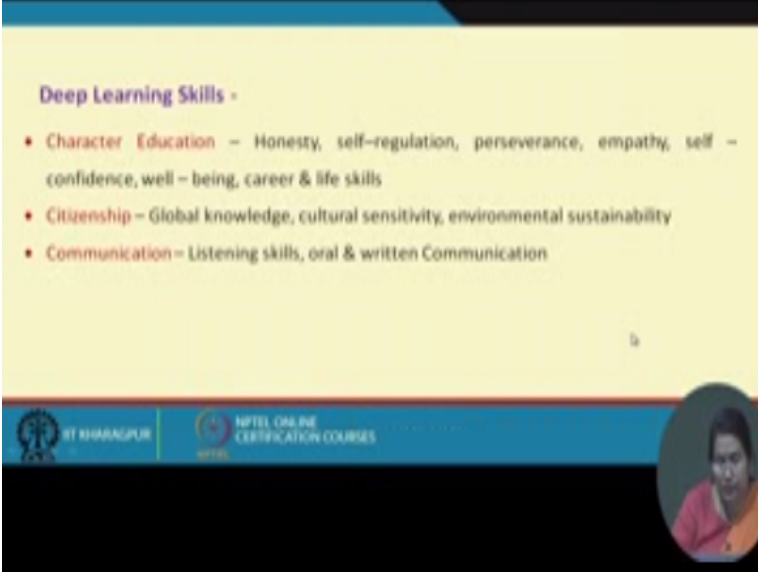


So this is the new pedagogy advocates for so new learning partnership new learning partnership with various groups both the online group offline groups virtual group physical group etc... so you have to create as the learner or learning community we have to create different kinds of partners, that is one aspect then deep learning task while identifying that task it must be very authentic and real task in terms of solving some of our critical social problems economic problems financial problems.

Whatever so it must have the depth and you know wait is potentiality of relevant of being the relevant and authentic in our society the present learning context and use the digital tools and resources tools and available the resources are available you use it, so what on the one side it is a partnership learning of the learning community tasks at hand whichever you have selected co selected or thing then by using it, try to resolve it and the outcome will be the immense and you share these outcome knowledge and solutions and the.

Share these knowledge will the whole wall so that the whole wall will be benefited this is the new pedagogy frame work.

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The slide is titled "Deep Learning Skills -" and lists three categories of skills:

- **Character Education** – Honesty, self-regulation, perseverance, empathy, self – confidence, well – being, career & life skills
- **Citizenship** – Global knowledge, cultural sensitivity, environmental sustainability
- **Communication** – Listening skills, oral & written Communication

The slide also features the IIT Bombay logo and the text "IIT BOMBAY" on the left, and "NPTEL ONLINE CERTIFICATION COURSES" on the right. A small circular inset image of a woman is visible in the bottom right corner of the slide.

And so these authors new pedagogy the advocates of these of new pedagogy they say that we need to develop certain deep learning skills as well, so what is deep learning skills what is first it advocated for character education it advocates for the character education like being that 21<sup>st</sup> century learner being the learner of new pedagogy, so we must build up the character like we must adopt we must develop the quality and like character like honest itself regulation, perseverance empathy, self confident.

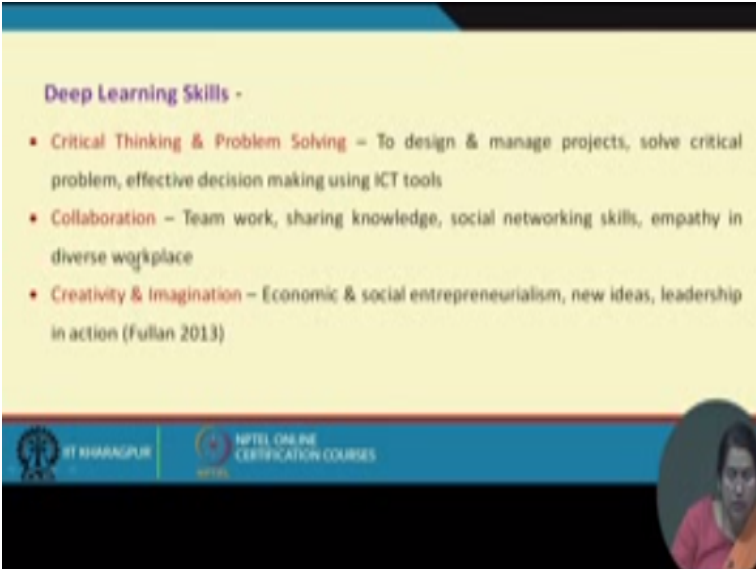
Well being career at the life skills so like in education research also we have already discuss that to be an authentic education researcher or you know, good educational researcher or you know good educational researcher we must adjust to some of the principles like takes academic integration and the principles etc.. some of the basic things we need to develop similarly here deep learning also advocated for developing certain skills the citizenship behavior like we should think ourselves.

As the global citizen so global at move you global knowledge cultural sensitive development what is sustainable we most focus on whatever we are take learning task we are taking up

whatever we are doing we must have the global frame work knowledge or outlook what is happening, how it is going to affect the whole world then we must develop the cultural sensitivity towards the other ethnic groups or the or diverse groups and it must be sustainable environmentally sustainable.

Whatever we create co create design etc. it must have a positive impact on the environment and should be environmentally sustainable then the communication similarly communication that we need to develop the listening skills to develop habit of listening to others, problems their opinion their perspectives so to be empathetic also we need to develop the listening skills overall and return communications.

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The slide is titled "Deep Learning Skills -" and lists three key skills:

- **Critical Thinking & Problem Solving** – To design & manage projects, solve critical problem, effective decision making using ICT tools
- **Collaboration** – Team work, sharing knowledge, social networking skills, empathy in diverse workplace
- **Creativity & Imagination** – Economic & social entrepreneurialism, new ideas, leadership in action (Fullan 2013)

The slide also features logos for IIT BHARAGPUR and NPTEL ONLINE CERTIFICATION COURSES, along with a small circular portrait of a woman in the bottom right corner.

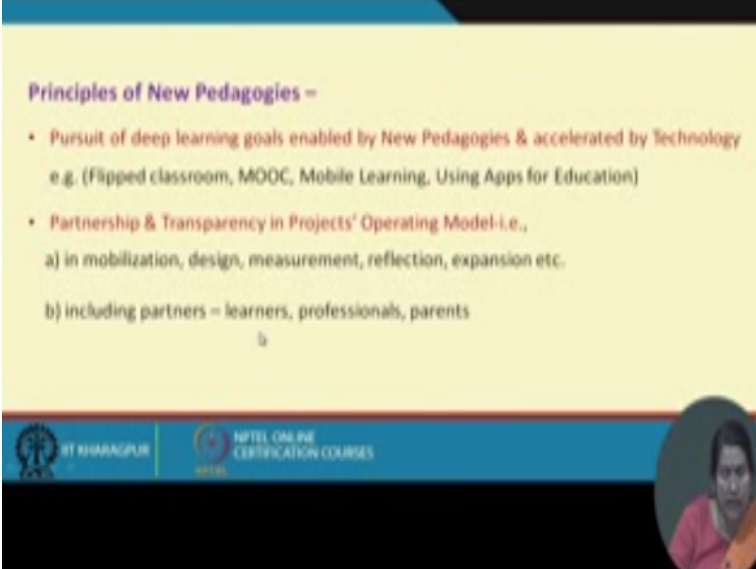
Then critical thinking and the problem solving similarly we design and manage the projects solve the critical problems effective decisions making using it using ICT tools, so all this activities it involve not only the problems solving skills what also critical thinking critical thinking, and creative thinking adopt had ordered thinking skills, so we need to develop at the higher education then collaboration again it also advocates for team work group work sharing the knowledge social networking skills empathy.

And working empathy and how to be able to work cooperatively the diverse work place, so collaboration team work is another quality we can say then creativity imagination that is the economic social enterprise new ideas lead to action when we are engaging our self any kind of

research or entrepreneurship or profile you know any kind of start up business etc so we must think twice like I am starting this business not from my personal benefit again not my comparison etc.

But how it is going to affect my society what I am going to contribute to my society so economic in social entrepreneurs with the new ideas leadership and action so these are some of the deep learning skills.

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The slide is titled "Principles of New Pedagogies -" and contains the following content:

- Pursuit of deep learning goals enabled by New Pedagogies & accelerated by Technology  
e.g. (Flipped classroom, MOOC, Mobile Learning, Using Apps for Education)
- Partnership & Transparency in Projects' Operating Model-i.e.,
  - a) in mobilization, design, measurement, reflection, expansion etc.
  - b) including partners – learners, professionals, parents

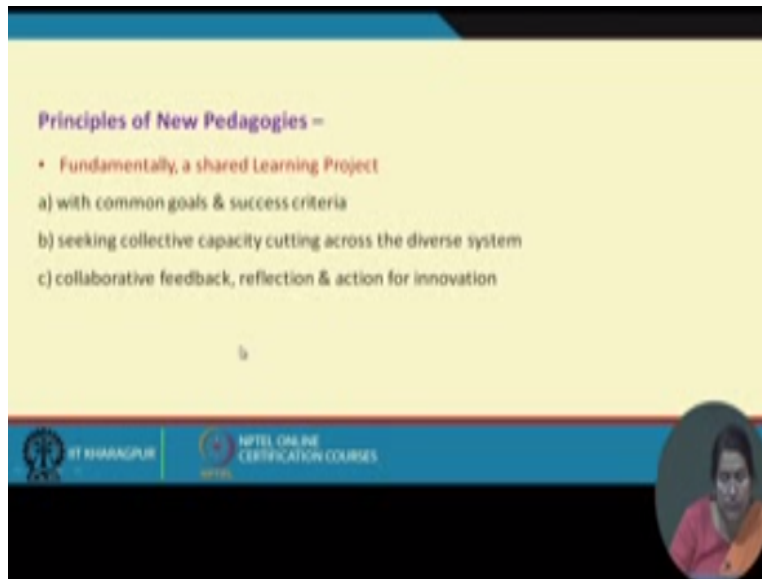
At the bottom of the slide, there are logos for IIT BHARANGPUR and NPTEL ONLINE CERTIFICATION COURSES. A small circular inset image of a woman is visible in the bottom right corner of the slide.

The we need to develop persecute of deep learning goals enable by the new pedagogy and neglects accelerated by the technology so these are the some of the goals learning goals like designing of the flip class room or then mobile learning how to use a mobile phone how to update the mobile phones in smart mode how can we use it is smart learning tool using the various kind apps for education so these are the apps actually persecute of the deep learning goals which has been enable by the new pedagogy and accelerated by the technology.

Similarly partnership and transparency in projects operating model, so partnership in terms of you know mobilization of the resources designing measurement reflection and expansion etc... and project the operation model like including the partners learners and professional is in parent so partnership and transparency in project operating model whatever we have design w are created we have co created we found it must be very much you know transparent in it is operational mode.

So these are the it is not just about it is not just about for our own benefit but for it is a global benefits it is social benefit, so these are some of the deep learning skills so we need to develop for getting the benefit of the new pedagogy.

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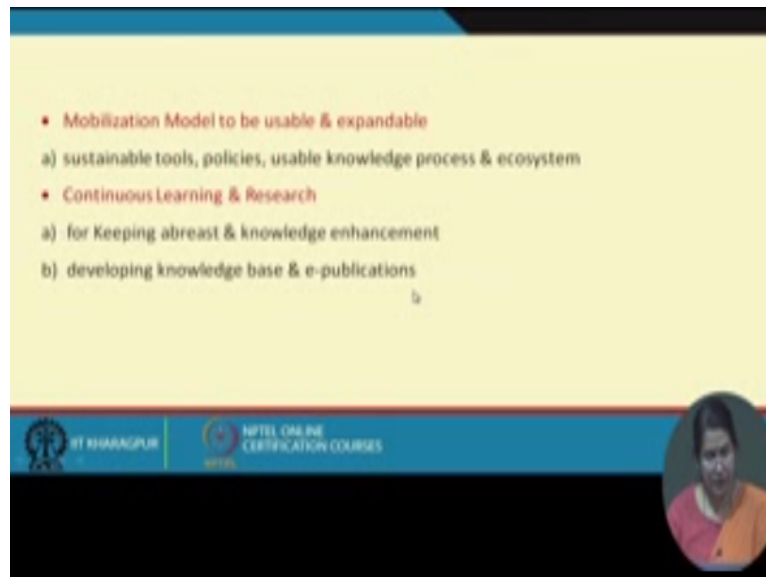
So principles of the new pedagogy there is fundamentally a share learning project so basic principle of new pedagogy is that it advocates for the shared learning projects the we create co create construct the knowledge but we should be shared among all it not just among, any one particular community and particular group, so it is a share learning projects fundamentally it advocated for share learning projects with the common whole and certain criteria, it not just the goal that means it is the goal for all.

It is the super ordinate goal it is the common goal it is the higher level goal which will be which will helped which will be helpful which will benefit to all the participants all the students all the learners all the people and success criteria, so with the common goals and success criteria where the our focus is that everybody would should get the success it is not just for top 10% or it is not I it is me or we or etc... but it is for all so with common goals and success criteria second the collective capacity.

Cutting across the diverse system even though we are working and diverse work place even though we are learning in the diverse a classroom situation but we always need to develop the collective capacity building that is seeking always a looking for the collective capacity building

that means everybody should be capable of everybody should learn and develop the competence, so collective capacity building cutting across all diverse system collaborative feedback again when we are working in a group so collaborative feedback reflection and action for the innovation we always get the collaborative feedback and we need to reflect up a need and we need to act action further innovation.

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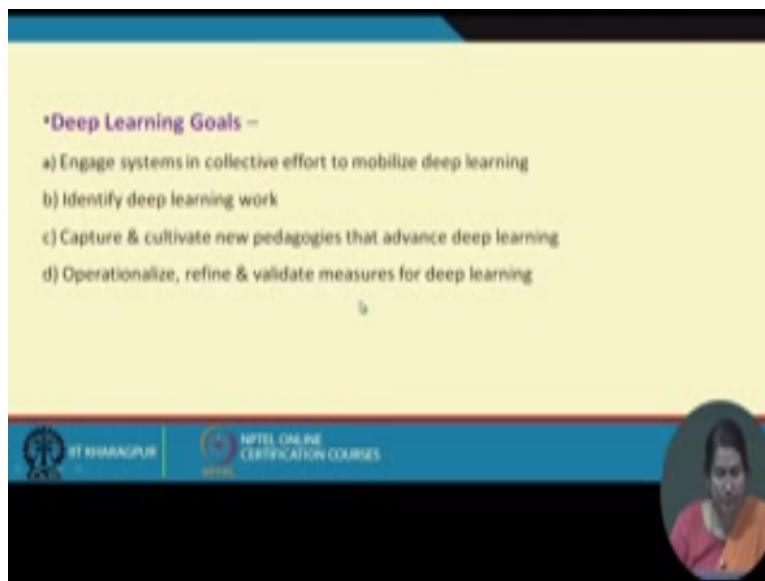


Mobilization model to be usable and the expandable whatever mobilization model we have developed as a part of the new pedagogy and technology access it should be useable expandable and sustainable also, so sustainable tools policies and usable knowledge process and eco system in terms of model creation are tool creation it should be sustainable and the policies should also be like this like and we can re use it or any way or it is you can say it is a free for all so usable knowledge process and eco system.

So that is why you can see all the knowledge which are being co created by all the academics researcher etc... are being freely uploaded in the You Tube or imported so that anybody and everybody can have the access on it is so this is the philosophy of new pedagogy to create the knowledge and share the knowledge, so continuous and learning and research, so continuous engagement in learning and research teams for keeping abreast and knowledge enhancement that is not only to keep to ourselves updated with the current knowledge as this current scenario but knowledge enhancement.

How to improve it developing the knowledge base and e publications so again now days is the digital is wearing the digital is, so developing the knowledge base and also e publication is not just only in terms of so knowledge to be created co created and share through e - more digital mode.

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**\*Deep Learning Goals –**

- a) Engage systems in collective effort to mobilize deep learning
- b) Identify deep learning work
- c) Capture & cultivate new pedagogies that advance deep learning
- d) Operationalize, refine & validate measures for deep learning

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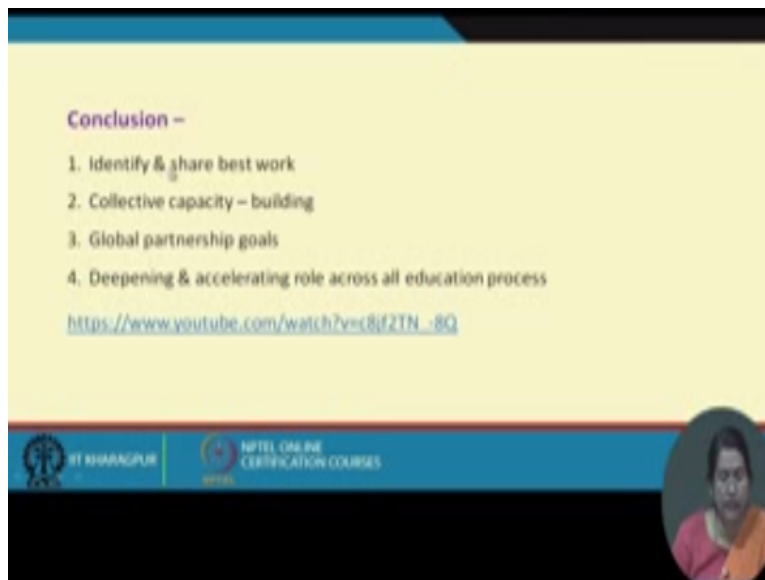
The slide features a yellow background with a blue header and footer. A small circular inset in the bottom right corner shows a woman with dark hair wearing a pink and orange top.

Now the deep learning goals are engage the systems in collective effort to mobilize the deep learning deep learning goals are engage the whole system in a collective in collective effort to mobilize the deep learning, deep learning skills to develop among all the learners, in the whole system so identify the deep learning, what are the potential deep learning task capture and cultivate the new pedagogy that advances the deep learning, so deep learning after identifying the deep learning task.

We need to capture that technology we need to capture the resources so we need to capture the new pedagogy to advance this deep learning, operationalize refine and validate the majors for the deep learning, so then how to operate it majors for the different learning so then how to operate it, how to resolve it how to you know create the home model how to design it how to authenticate it, how to get the benefit refine it modify it then how to validate it home validate it so these are all ultimate goals for the deep learning so.

We need to operationalize it refine it and validate the measures for the deep learning and ultimately it will be shared with others.

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Therefore the conclusion is that we need to identified and shared the based work, so always by developing the deep learning skills we must in identify the deep learning past as well and we must you know capture we must capture we must exploit the technology tools and we must at heard to the new pedagogy, so collect the capacity building is the focus oh we have to develop not just my capacity he is ability or our potentiality but our it is but all it is for all everybody's capacity building.

Global pattern or partnership goal it is not about not in my country or that country etc.. but is the global partnership that is the global where leaving in the same in the same globe and you know global warming climate changes the that these are some of the common issues which is relevant for all of us it is not just me or my country or their country so global partnership goals which are



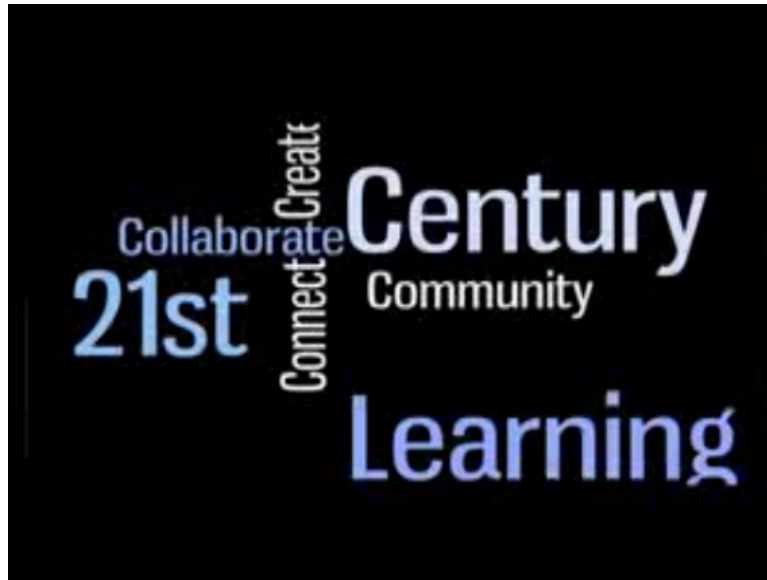
common goals to all citizens, then deep learning and accelerating the role across all the education process.

So while attempting making an attempt to go into the depth of where students where researcher where teacher where educator where administrator whatever at any label and whatever capacity we are having in that process in that mechanism, we need to go to the depth, so deepening and accelerating the role in whichever role we place in whichever post to whichever responsibility we are taking up, we need to go to the root to the depth depending and accelerating role across all the education process so here we will just go through another You Tub video right now.

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Commercial Break

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We now return you to your  
regularly scheduled program.

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How do I reach 21st century learners?

Google Search

I'm Feeling Lucky

We never to leave a the effects of any one great depression.

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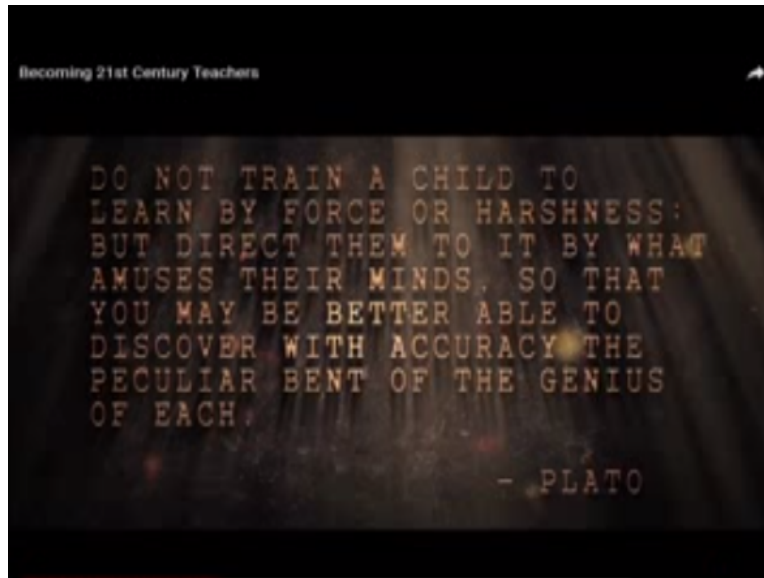
The Google logo is displayed in its characteristic multi-colored font (blue, red, yellow, blue, green, red).

How do I become a 21st century teacher?

Google Search

I'm Feeling Lucky

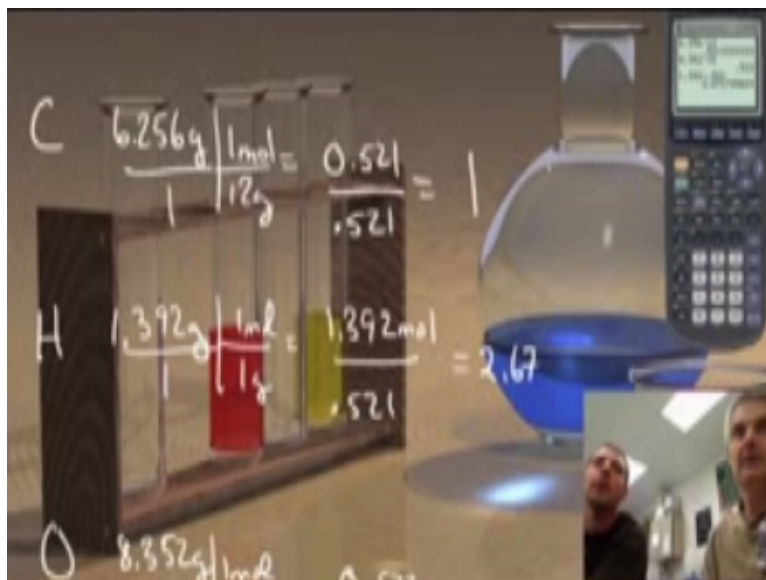
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The classroom is around I told them exactly what top learn? How to learn it? What are the signs to learn it and when to learn it and how to prove it? I do not do that anymore, change the place which it is deliver, instead of standing in front of class, I deliver that reference structure now is at home to studio.

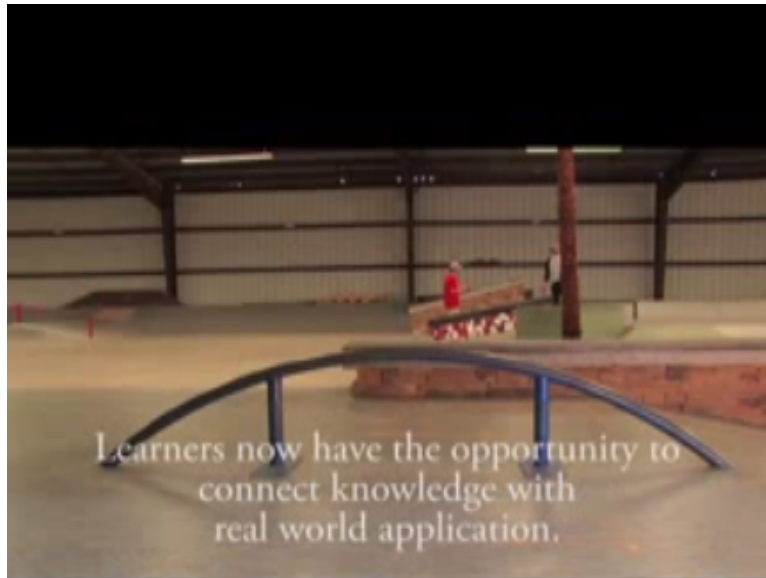
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We can do that, so here are few little chats we need to multiply the whole members.

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In a skateboard it there is a million conics, one of the circles from the wheels to the bearings, to the hardware, all of that is circular now in the deck itself.

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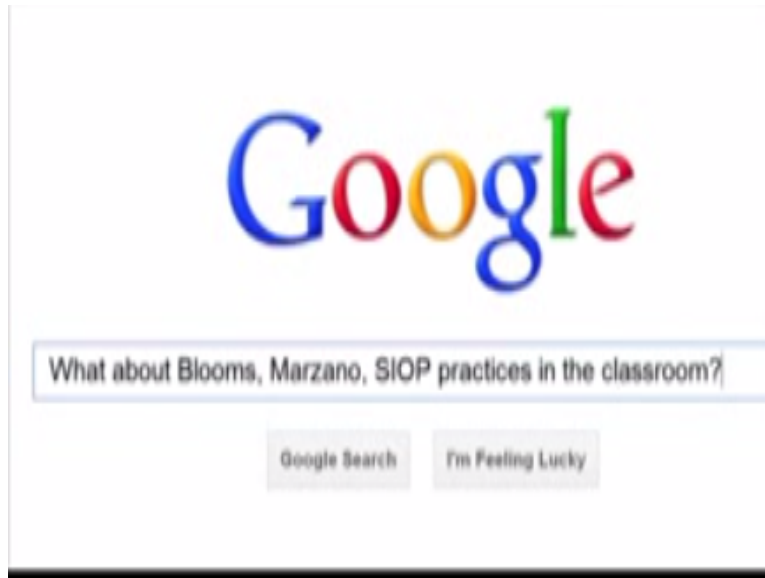
They have drawn some of the curve here so you can see them hexagon shape types.

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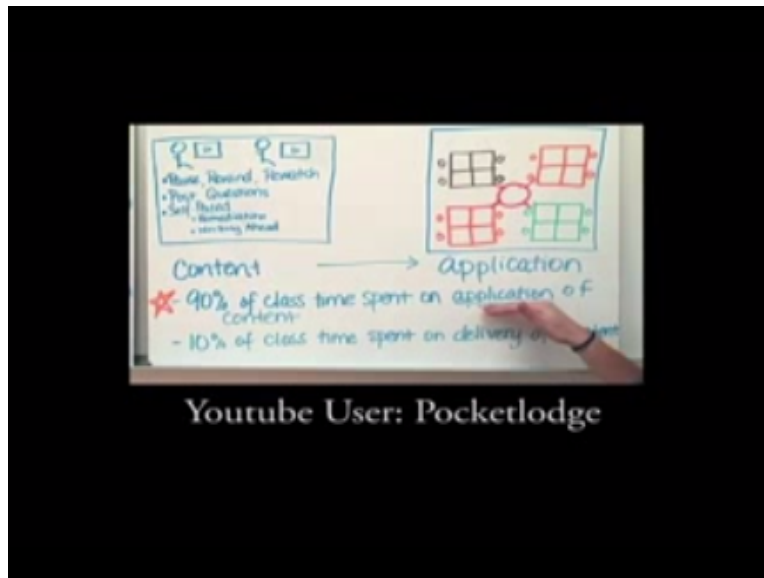


Okay today is learning strategy is sketch description, so in a reading when you get the visual and you see the picture in your head; you are just going to drive writer in your nuts.

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When you come into class, the whole classroom is shifted where our particular class working with these different chains group, focus on different pieces of application. I can now work between each of these groups that are moving at their own place. This is created a 90% uses class time spent on application of the content and 10% of class room on delivery of content, where I can answer the question that have been posted or take any other questions that have come out from a plan to contact.

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Digital classrooms allow  
for multiple instructors.



Youtube User: FlipAlgebraNA

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Hey guys we hope you are really excited about what is coming up on algebra this year, it is going to be so much fun, and you have got 3 great teachers one who is better than the rest.

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Okay guys you are excited for the class.

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# Google

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Can I make technology magically appear?

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Google Search

I'm Feeling Lucky

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The Google logo is displayed in its characteristic multi-colored font: 'G' is blue, 'o' is red, 'o' is yellow, 'g' is green, 'l' is blue, and 'e' is red.

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Please define liability

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Google Search

I'm Feeling Lucky

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The Google logo is displayed in its characteristic multi-colored font (blue, red, yellow, green, blue, red).

How can I reach a large number of students affordably?

Google Search

I'm Feeling Lucky

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Students need access to content, not apps.

The Kindle Fire is a 3:1 ratio versus the iPad

For every one iPad, three students could have a  
Kindle Fire



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This is 3 over 8 also remember that you just not cancel that, so that will be like.

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So now we have formally finished this chapter on educational research and pedagogy and how these two components are well integrated and how we are going to use this effectively with the help of technology so thank you very much.