Emerging Technologies for Effective Teaching & Learning

Continuing Education Program for Next Education India Pvt Ltd

Conducted by Educational Technology, IIT Bombay

January 9-11, 2020

IIT Bombay

MOOCs:

Part I - What, When, How?

Part II - Why do I need MOOCs?

Gargi Banerjee

What is a MOOC?

What is a MOOC?

Show of hands:

- Are you familiar with the term MOOCs?
- Have you sampled a MOOC?
- Have you done an IITB MOOC?
- Which MOOC platform are you familiar with?

What is a MOOC?

M O O C

Massive **Open** **Online** **Course**

There may be thousands of learners in a MOOC

Anybody can register for MOOC from anywhere

MOOC is offered fully online

MOOC is similar to other online college courses

Example of a MOOC

Example of a MOOC

Instructional Components in MOOCs

- Videos

- Assignments

- Discussion Forum

- Additional resources

- Interactive Sessions

- Certificate on completion
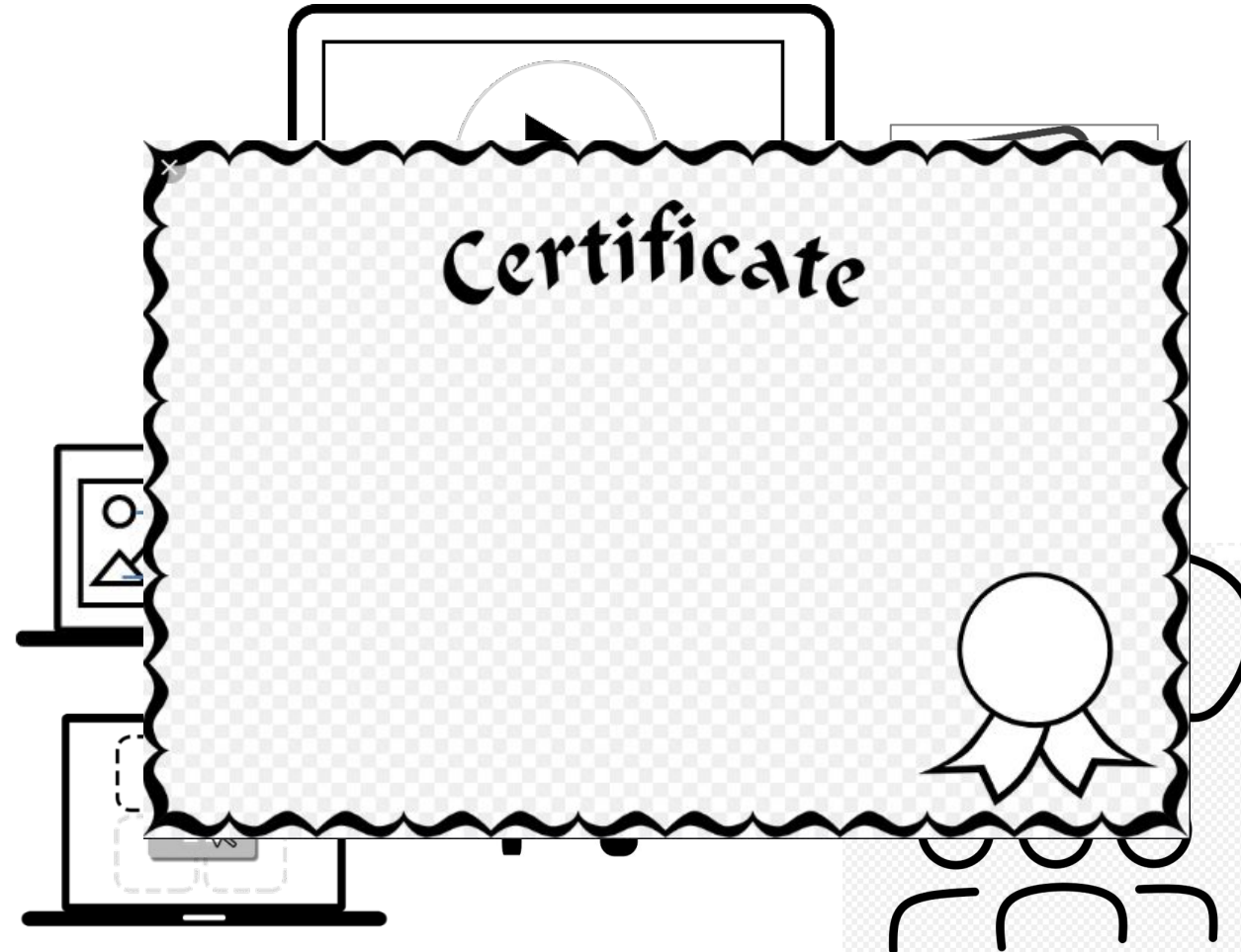
Example of a MOOC

Course outline

How to access the portal

Warm Up

Week 1: Layered Network and Network Addressing

● The CEO's Problem

● Layered Nature of Computer Networks

● Introduction to Cisco Packet Tracer (CPT)

● CPT: Requesting a Website

○ Quiz: Layered Nature of Networks

○ Anupam's Adventure

● From Anupam's Adventure to Network Addressing

○ Addressing in Networks

○ Deep Dive into IP addresses

○ IPv4 to IPv6

The CEO's Problem

Dear Learners,

Welcome to the first Learning Dialog of the course. This learning dialog comprises of two videos. Here we discuss how the CEO would have dealt with the delivering of the goods and later draw parallels between the analogy and the concepts of networking.

Week 1: Discussing the CEO's Problem
Click the above heading to watch video if you are not able to see the video

Week 1: Discussing the CEO's Problem

Watch later   Share
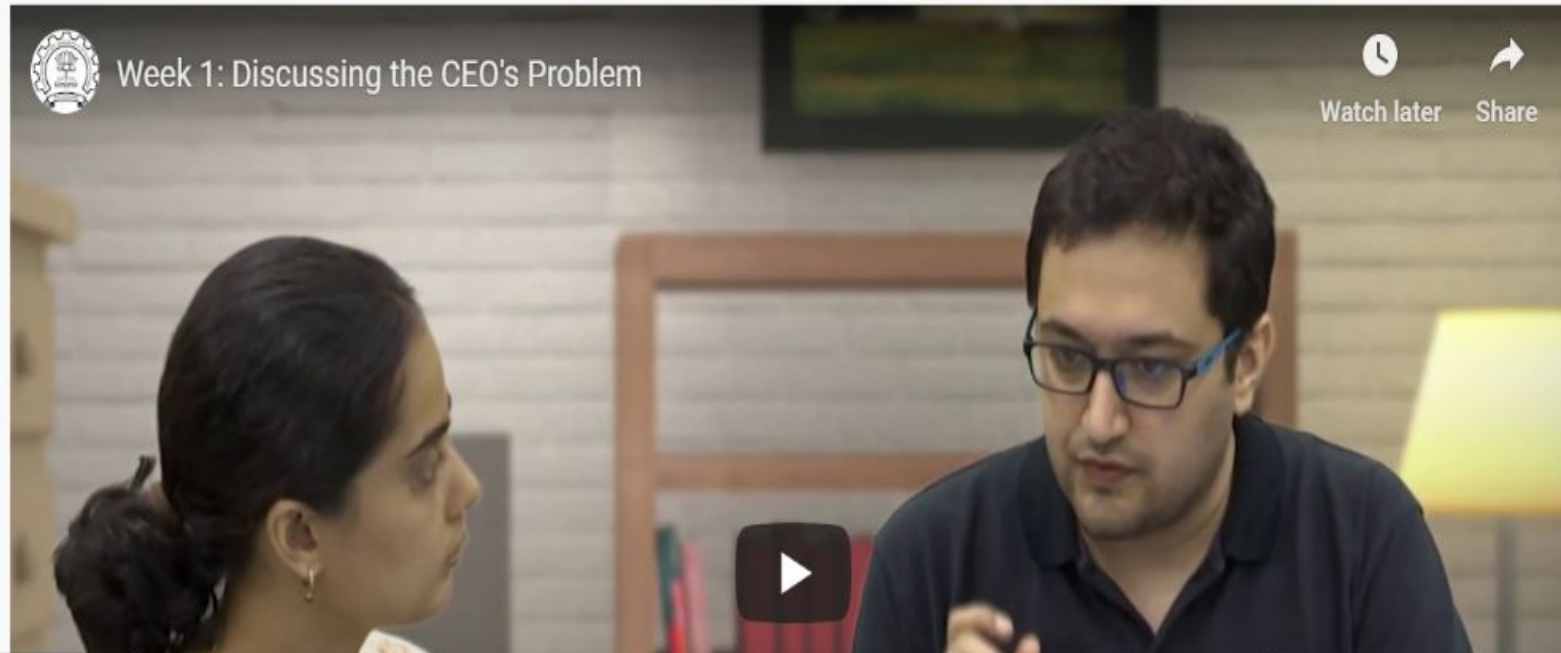
MOOC Providers

Provider	Institutional partners
Coursera	Stanford University, Princeton University, Arizona State University, University of Maryland College Park, Ohio State University, University of Illinois at Urbana-Champaign, University of London
edX	MIT, Harvard University, Brown University, Boston University, UC Berkeley, Kyoto University, Australian National University, University of Adelaide, University of Queensland, IIT Bombay, IIM Bangalore, Dartmouth College, Universidad Autonoma de Madrid, Curtin University, Cornell University, Columbia University, University of Pennsylvania, University System of Maryland
Udacity	Georgia Institute of Technology, San Jose State University, Google, Salesforce.com, Facebook, Cloudera, Nvidia, Autodesk, Cadence, HubSpot, Tableau
Udemy	Strayer University
NPTEL	IIT Bombay, IIT Delhi, IIT Guwahati, IIT Kanpur, IIT Kharagpur, IIT Madrasand Roorkee, Indian Institute of Science
IITBombayX	IIT Bombay

How Does it Work?

How Does it Work?

Hint: Use these stems to frame your response

- MOOC contains _____
- MOOC provides (benefits) _____

Summarize : Characteristics of a MOOC

Your Responses:

- MOOC contains _____

- MOOC provides (benefits) _____

Characteristics of a MOOC

- MOOC contains _ Content organized into courses

  Instant assessment

  Diverse learner population

  Discussion forums & Interactive sessions

- MOOC provides (benefits) __ Quality online education at scale

  Exposure to diversity of opinions/solutions

  Flexibility for the learner (anytime, anywhere)

  Learning free of cost (mostly)

  Certificate on completion (recognized by institutions/employers)

What is a MOOC?

Massive Open Online Courses

- Technology platforms to support scale.
- Existing platforms – Swayam -NPTEL, IITBombayX, edX, Coursera, Futurelearn.
- Provide access to information anytime, anywhere.
- Instructor provides content in the form of videos, slides.
- Learners access content and do assessments – graded & ungraded.
- Certificate on completion.

Evolution of MOOCs

Source: MOOC on Designing Learner-centric MOOC

Statistics and Trends in MOOC

Class-central: Reviews of statistics and trends in MOOCs every year.

Review of 2012
Review of 2013
Review of 2014
Review of 2015
Review of 2016
Review of 2017
Review of 2018
Review of 2019
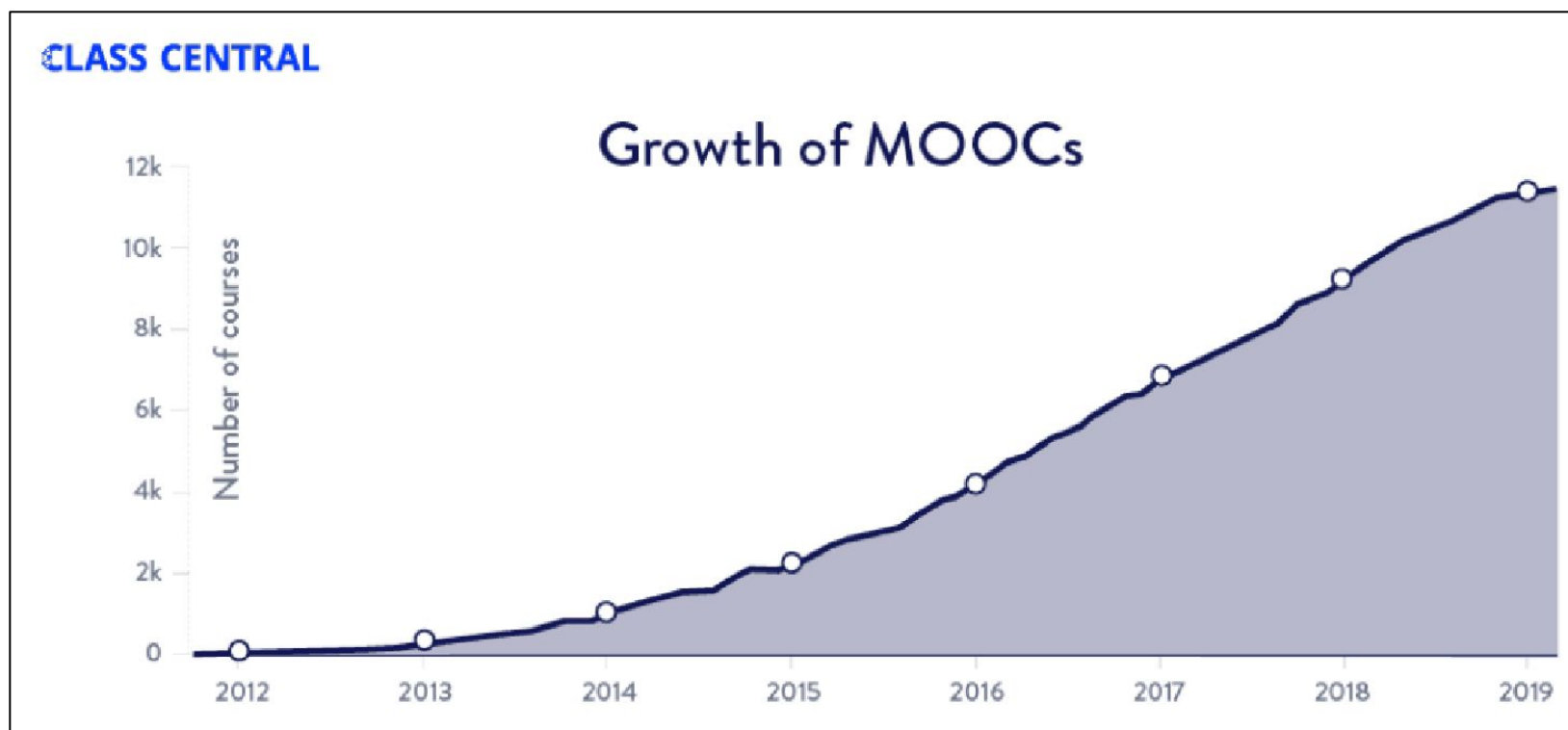
Why do I need MOOCs?

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Benefit of MOOC for teachers

Teacher Professional Development

Upgrade your knowledge base

Benefit of MOOC for teachers

Teacher Professional Development

Upgrade your knowledge/skill base

Can we integrate MOOCs in school teaching??

How can we integrate MOOCs in school teaching?

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- Think (Individual activity – 2 mins.)

Decide the instructional setting (classroom/laboratory/homework) in which you would use MOOCs as a teaching aid.

How can we integrate MOOCs in school teaching?

- Think (Individual activity – 2 mins.)

Decide the instructional setting (classroom/laboratory/homework) in which you would use MOOCs as a teaching aid.

- Pair (Group activity – 5 mins.)
- Get a partner who has chosen the same setting.
- Discuss & come up with a single idea of how you will use MOOC as a teaching aid.

How can we integrate MOOCs in school teaching?

- Think (Individual activity)

Decide the instructional setting (classroom/laboratory/homework) in which you would use MOOCs as a teaching aid?

- Pair (Group activity)
- Get a partner who has chosen the same setting.
- Discuss & come up with a single idea of how you will use MOOC as a teaching aid.

- Share :

Share with all workshop participants

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How can we integrate MOOCs in school teaching?

- Your Responses :

Can MOOCs be integrated in school teaching?

Benefit of MOOC for teachers

Teacher Professional Development

Upgrade your Knowledge Base

How can MOOCs be integrated in school teaching ??

1. Project based learning
2. Flipped classroom
3. Addl. resource for diverse learners

Teaching-learning Strategies with MOOCs

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A. Use in Project Based Learning

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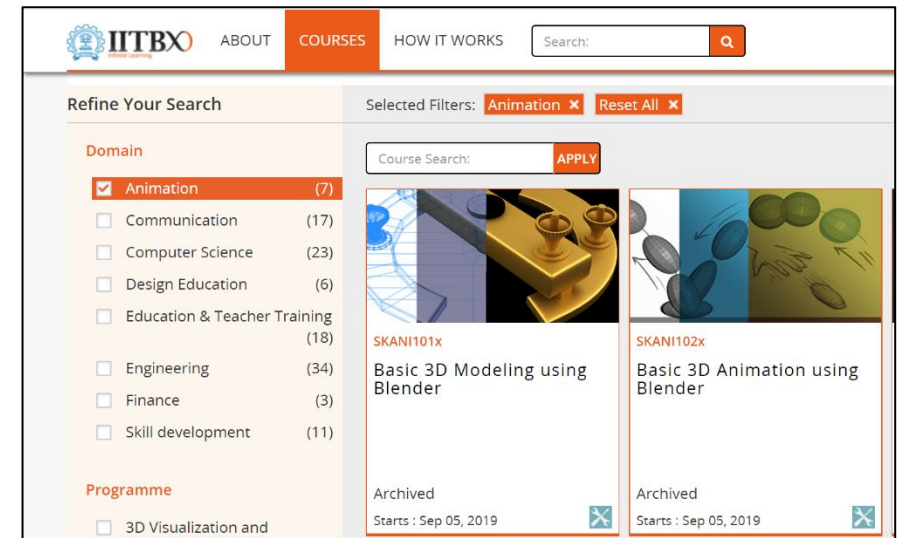
B. Use in flipped classrooms

Teaching-learning Strategies with MOOCs

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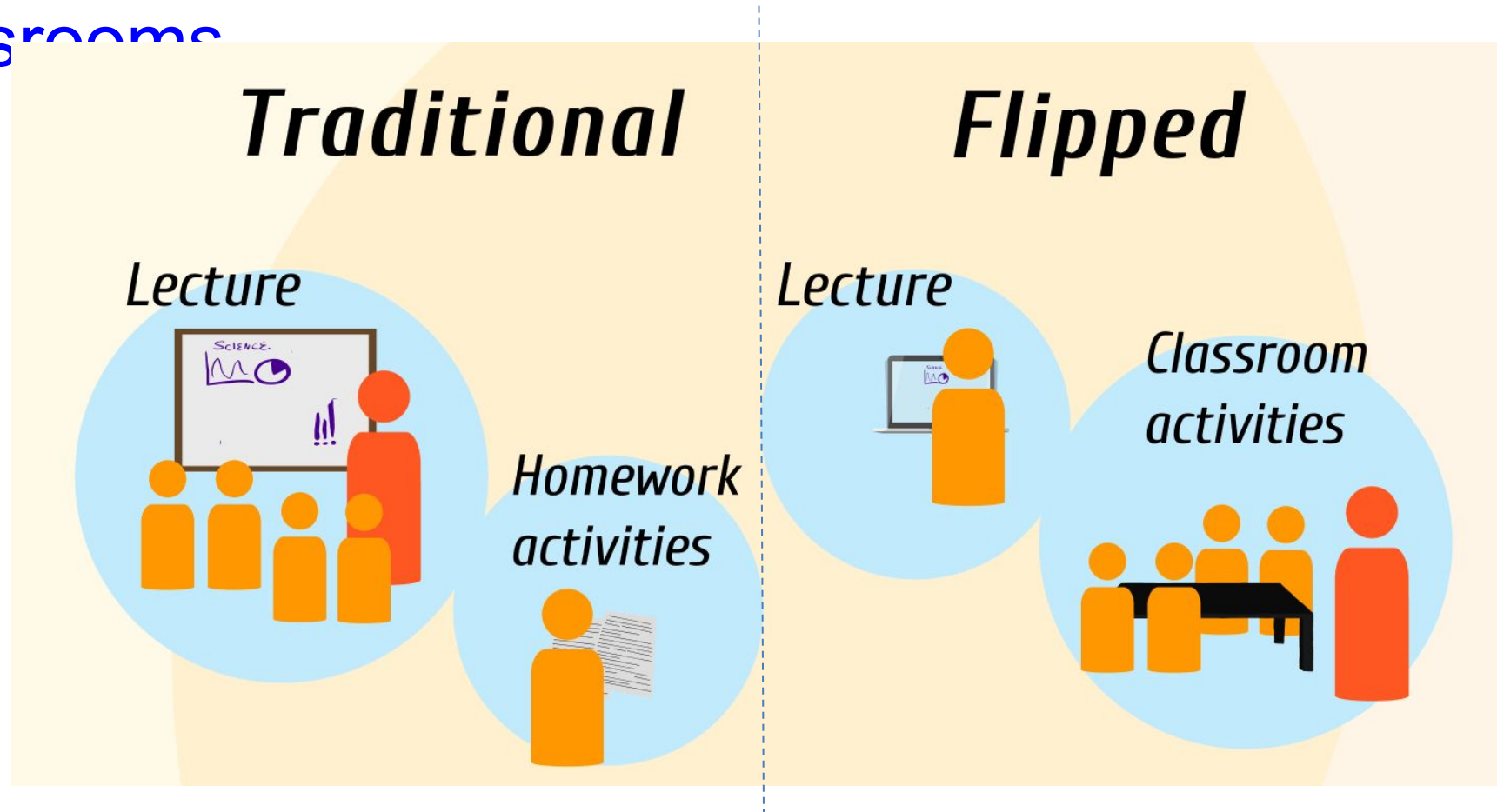
C. Additional learning resource for diverse learners

But Do Teacher Training Through MOOCs have Impact?

CEP for Next Education India Pvt Ltd

IIT Bombay – NextEducation Teacher Training MOOCs

IIT Bombay – NextEducation MOOCs

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Pedagogy for effective use of ICT for school teachers

Schools

IITBombayX - ET621Tx
Ended - Oct 7, 2018

View Archived Course

Course	Total Teachers Certified
ET611Tx	2,815
ET621Tx	656

Course Data (2017-2018)

- 4-week courses
- Partially sponsored by NextEducation
- Instructors : IITB faculty & Research Scientists
- Each course ran 3 times
- Participants : school teachers across India & Tanzania, Middle East, UK

Overview of ET611Tx MOOC

Course Structure

- Platform primer (Pre-course activity)

- Technology & Pedagogy primer

- Active learning & classroom strategies

- Effective integration of visualizations in classrooms

- Putting it all together

LCM MOOC

LeDs : Short interactive videos with in-video activities

LbDs: Formative assessment activities for micro-practice after each concept with constructive/customized feedback

LxTs: Varied learning resources to address diversity followed by a graded quiz

LxIs: Explicit activities with focus questions to foster peer-learning followed by a graded quiz

Focus question+ Peer interaction+ Reflection Quiz

Learner Experience Interaction

LxI

Learning Dialogues

Content+ Reflection Spot

LeD

Orchestration

LxT

LbD

Resources+ Assimilation Quiz

Learning Extension Trajectories

Learning by Doing

Activities+ Customized Feedback
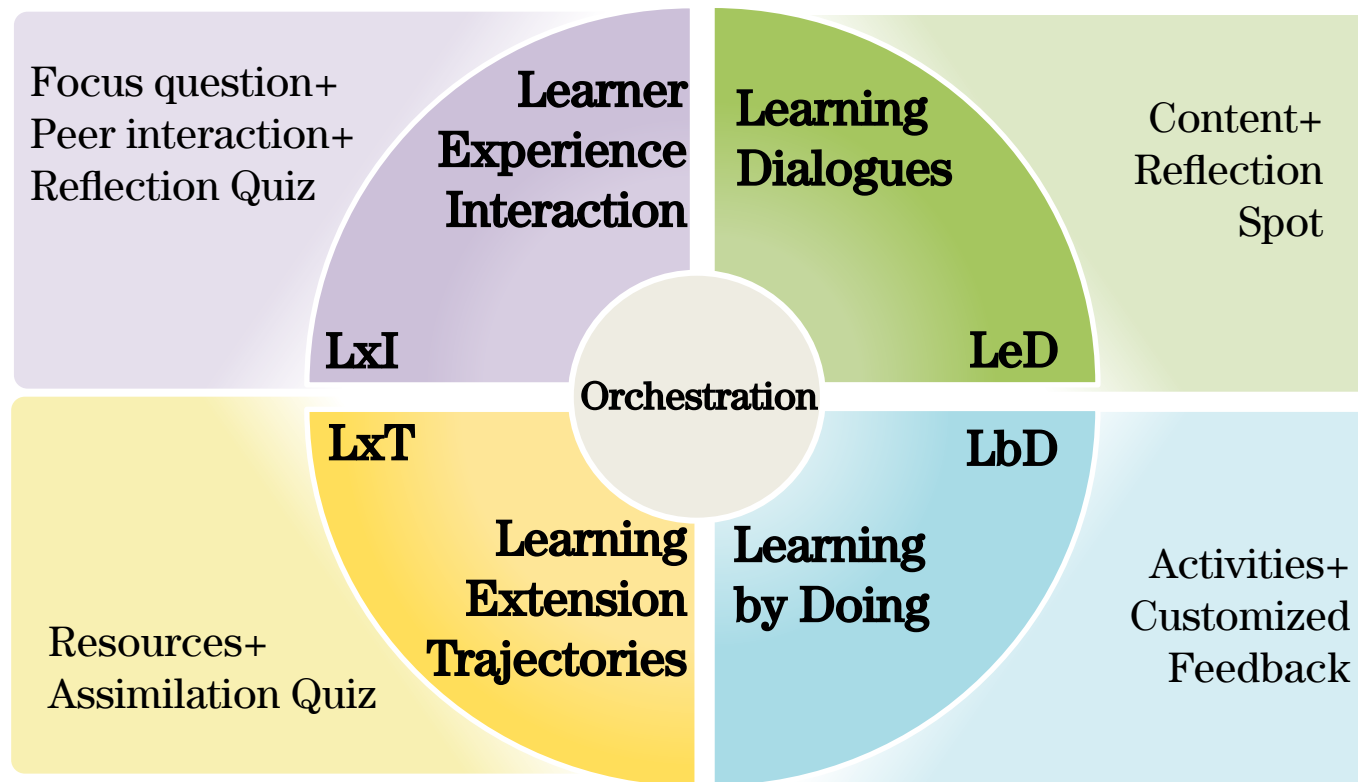
LCM MOOC Model

ET MOOCs: Catering to Diverse Skill Sets

Effective use of ICT in classroom (IIT BombayX)
Effective classroom teaching strategies (IIT BombayX)

ET611Tx
Pedagogy for effective use of ICT for school teachers

Archived

Starts : Jul 12, 2018

ET601Tx
Educational Technology for Engineering Teachers

Archived

Starts : Jan 05, 2016

ET621Tx
Effective teaching-learning of CS in Schools

Archived

Starts : Sep 06, 2018
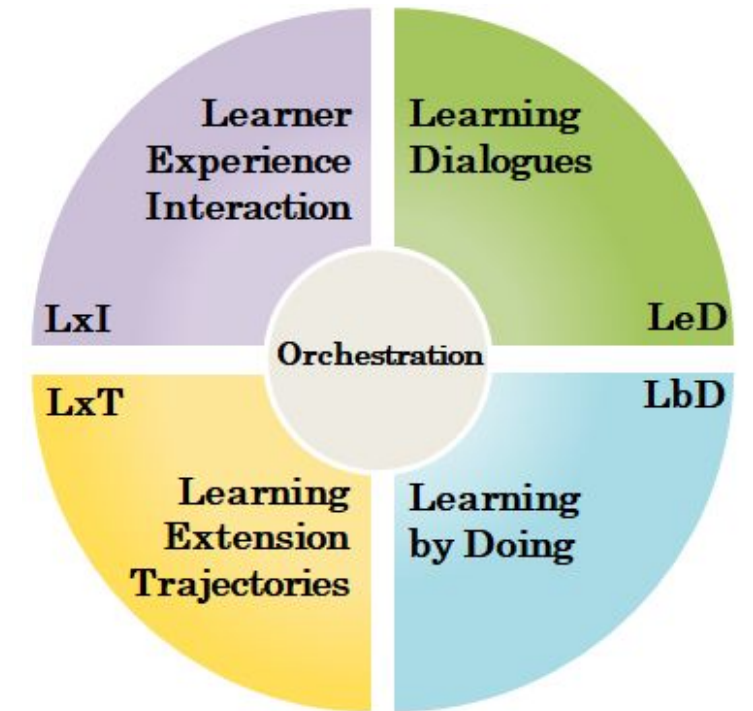
LCM model

Providers: IIT BombayX & NPTEL

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Think-Pair-Share

https://www.youtube.com/watch?v=vJWlAIhM3so&feature=youtu.be

0   2:27 – 4:45 – 5:03 -8:49

Peer Instruction

https://www.youtube.com/watch?v=DXW8qgXne8o&feature=youtu.be

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Innovations by teachers (voice chart), (voizometer)

Chitra Kapoor Rola Good morning ET611Tx team , here is the picture of Voizometer that has been used in class to control the noise level . Arrow shows the level as green signifies peaceful class, yellow- little noisy and red- very noisy class. This is placed near the switch board as the class become noisy I mark the arrow to red and switch off the fans & light . Children immediately understand why is that happen , what teacher is expecting and how to bring the level back to green .
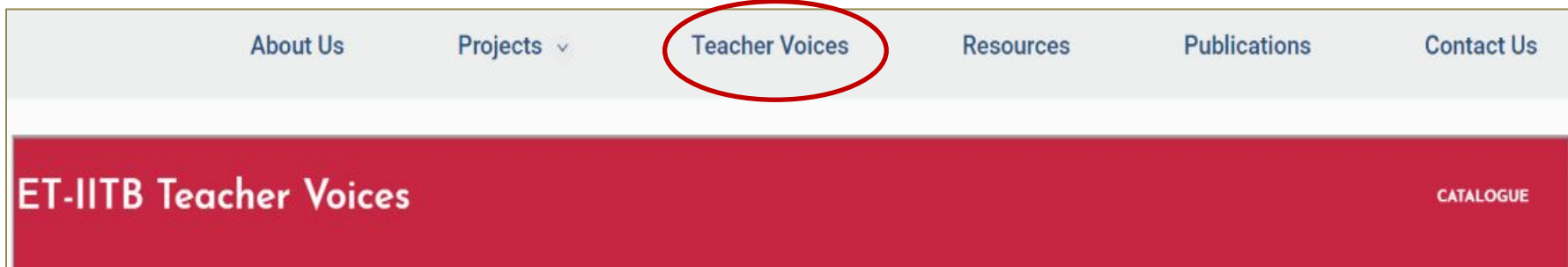
ET611Tx MOOC : Teacher Testimonial

I am teaching Biology to the Higher Secondary Classes since last 17 years….. When I was teaching, the whole class was always calm and cool. I used to ask few questions to the students and also clear the doubts of the students. Students were satisfied with my teaching and also appreciated me many times. I was getting job satisfaction. In fact this was not the real story

When I joined the course and completed the Module-2 i.e. Active Learning and Classroom Strategies, I found myself awakened from the dark night and said that "I have to work hard for students till the next 17 years". Past 17 years my teaching was Teacher Centric, which was wrongly appreciated by my students. **For the last 17 years students were listening to me, now for the next 17 years I have to listen to the students. Now on wards my each class will be noisy and found to be engaged**. atul1975

Contribute to Teacher Voices

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ET-IITB Teacher Voices   CATALOGUE

Send stories of learner-centred teaching-learning from your school : nexteducationrlab@gmail.com

PEER INSTRUCTION IN A PRIMARY CLASSROOM

ET611 MOOC TOPIC : ACTIVE LEARNING STRATEGIES,
EDUCATIONAL LEVEL: PRIMARY,

ET MOOCs: Catering to Diverse Skill Sets

Effective Design of MOOCs (IIT BombayX + NPTEL)
Learner-centric Design of E-content (NPTEL)

ET701x

Elements of Learner-Centric MOOCs

Archived
Starts : May 03, 2018

Designing Learner-Centric MOOCs

Prof. Sridhar Iyer, Prof. Sahana Murthy, Dr. Jayakrishnan...

IIT Bombay

NPTEL

4 Weeks (Starts: 29-07-2019)
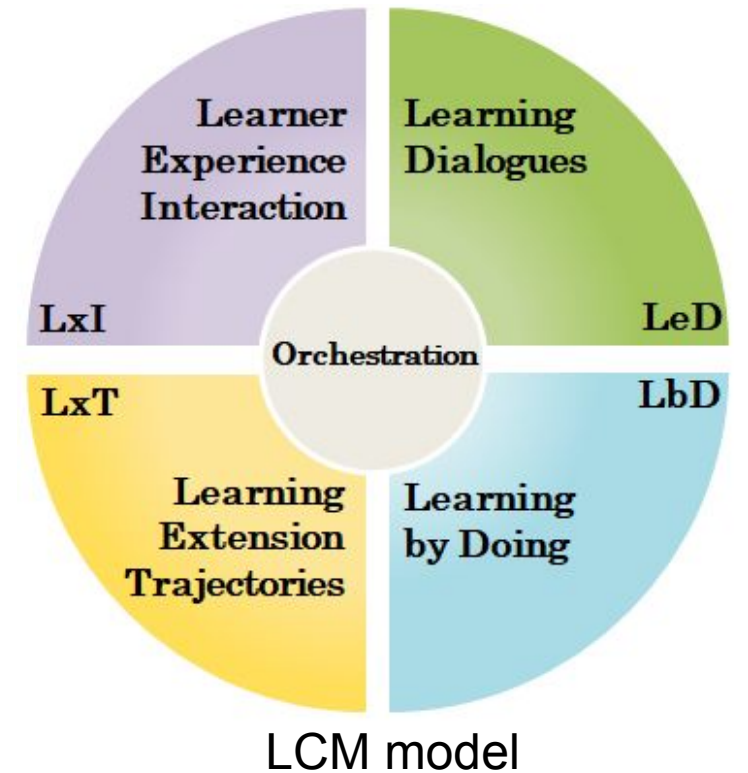Exam Date: 29 Sept, 2019

Designing learner-centric e-learning in STEM...

Prof. Sahana Murthy

IIT Bombay

NPTEL

4 Weeks (Starts: 29-07-2019)
Exam Date: 29 Sept, 2019

LCM model

Providers: IIT BombayX & NPTEL

Thank you

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