

MINI-MOOCs BLENDED LEARNING AND ITS EFFECTS



By:
Prof. Susheel Mittal
CChem FRSC
Thapar University, Patiala, India

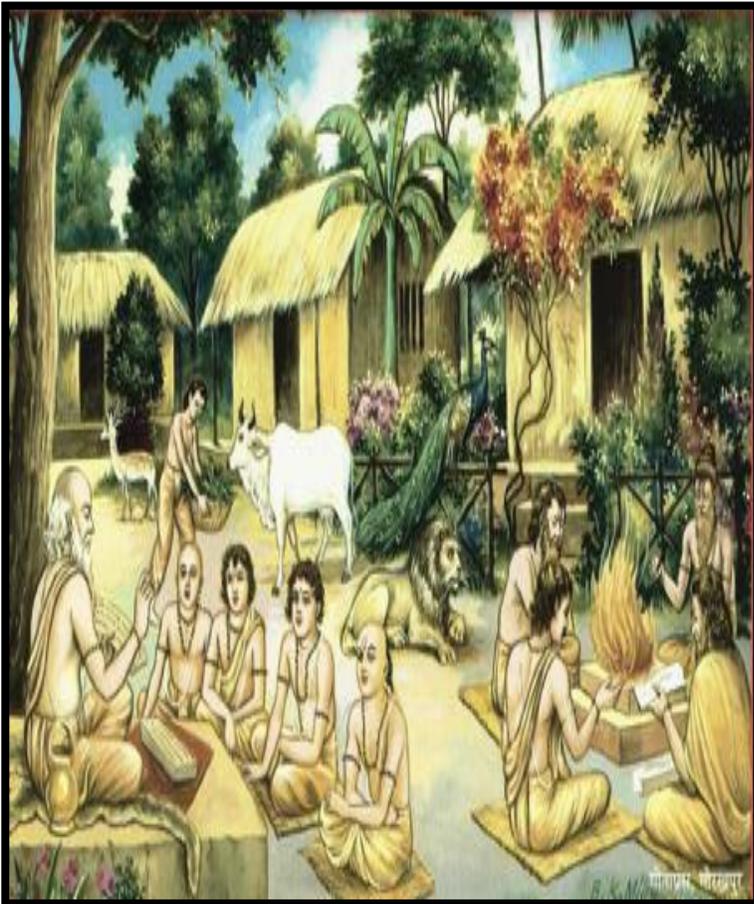
What is Excellent Teaching?

Addressing the issues:

- ❑ Improvement in **Engineering Education**
- ❑ Sharing success stories of **Industry-Academic Partnerships**
- ❑ Help meet the UN's **Sustainable Development Goals**
- ❑ Building **networks** amongst participants
- ❑ Showcasing upcoming **funding opportunities** available for international industry-academic partnerships

Changing Phase of Indian Education

The Gurukul System



- Anyone who wished to study **went to a teacher's (Guru) house** and requested to be taught
- **If accepted** as a student stayed at the guru's place and help in all activities at home
- The student **stayed as long as the guru felt** that he taught everything he could teach
- **Learning was closely linked to nature and to life**, and not confined to memorizing some information

Changing Phase of Indian Education

Classroom based Education



- Teacher is the only source of knowledge, one who makes the un-understandable of the books understandable and beyond whom there is no source of knowledge
- All the students were at equal learning level and from the same strata of society

Challenges to Classroom Model

The first assumption of **singularity** of knowledge source has **withered** in the latest century

The present classrooms are microcosm of the larger society and includes **student from different strata of society** having **varying intellect** and capacities

..Challenges to Classroom Model

- Internet based education is emerging as a challenge to established model of classroom education
- From the elementary level to the higher education internet based education is expanding its roots in various ways:



Pre-recorded
lectures



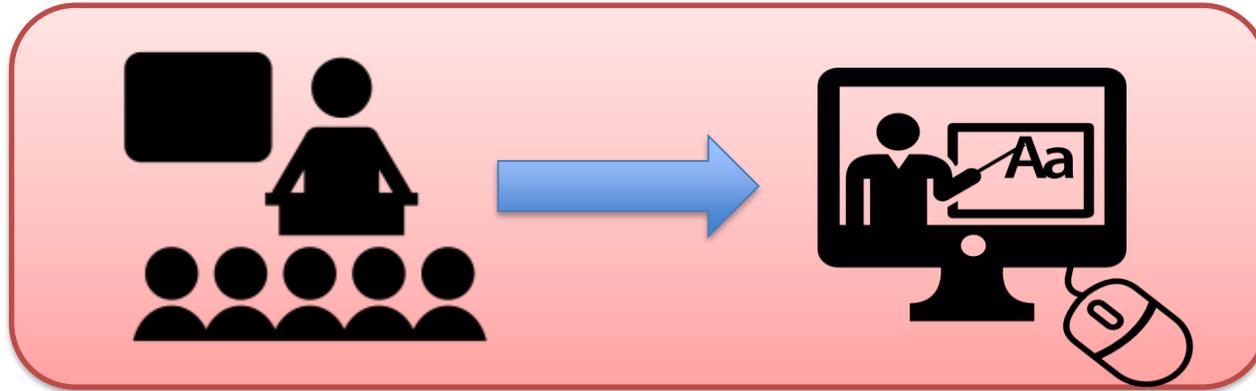
Flipped Classroom
Approach



Virtual Labs



Should Classrooms be Seized ?



Should the classroom education give way to the internet based education?

Or if we are still willing to continue with the classroom based education what should be its role?

..Should Classrooms be Seized ?

Although **Internet** has revolutionized the way we learn, but it does not in any way replace the utility of classroom. Why?

- The class not only impart the knowledge but are also the 2nd biggest stage of socialization after family
- The class room helps us learn how to act (**Experimental Component of Technical education**)without which the entire knowledge becomes meaningless.

“The great aim of education is not just knowledge but action.”

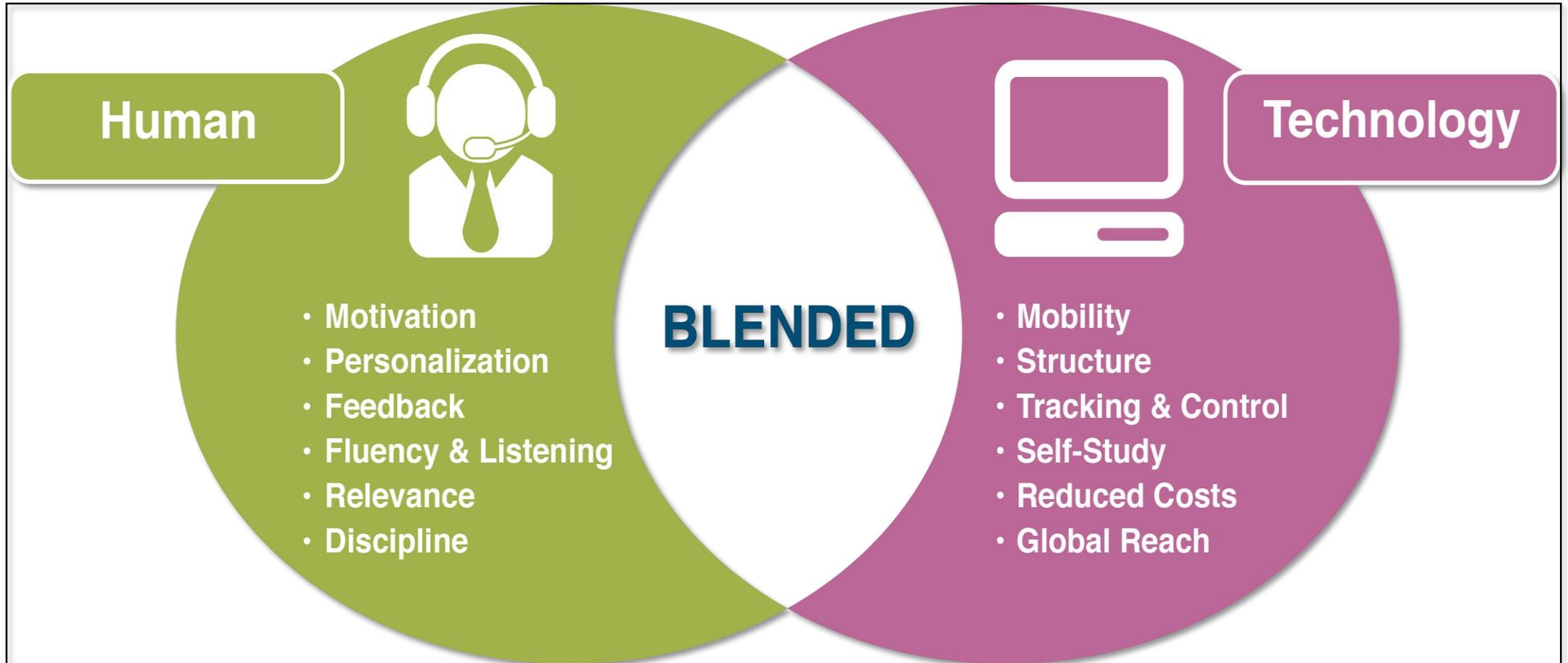
The solution - Need of Big Transformation



*“To follow a **Blended Approach** such that the entire system of classroom education and internet based education should complement each other.”*

- Internet based education as prime educator and classroom teaching as facilitator, as a coach, a trainer, an inspirer
- They should guide and channelize the energy of student in right direction leaving the path travelled and the pace of travel entirely on the student

Blended/Hybrid/Flipped Approach



The Alternative Mode of Internet Based Education : MOOCs

- MOOCs (Massive Open Online Courses) is one of the latest developments in the methodology of Teaching-Learning process.
- Thousands of MOOCs in different versions are available online, both in free access and on payment with a certificate.



- ❖ MOOC - Also known as Mass Adoption of Distance Learning
- ❖ Leverage and get the best of Expert Resources Available
- ❖ Flexible Learning Approach in terms of time, methods and pace

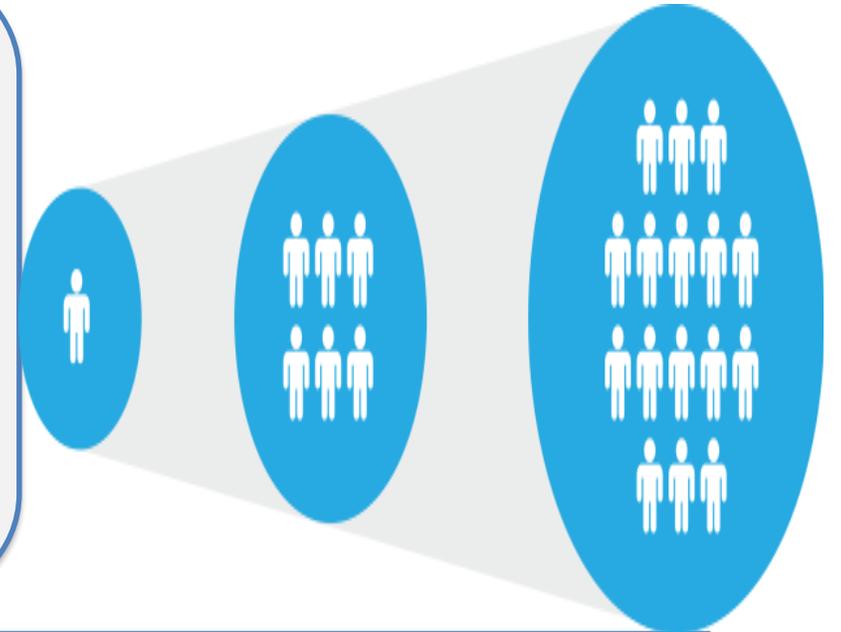


MOOCs Characteristics

- ❖ Not a replacement for on-campus taught degrees, but also not in conflict or competition with them
- ❖ A different educational space – Open Education
- ❖ It builds reputation as an early adopter of Educational Technology
- ❖ Exploration of a new pedagogical space
- ❖ Helps in reaching as widely as we can with our courses
- ❖ Sharing experiences with peer Universities

Glimpse and feel of the Scale

- ❖ Over **5000 such courses** are now available on the Internet. Out of them around 50% are from Coursera
- ❖ Around **15 million people** who have used this content with different perspective
- ❖ Around **5,00,000 Instructors, Assistants, Technical Staff** has been involved in the development, delivery and analysis of these courses

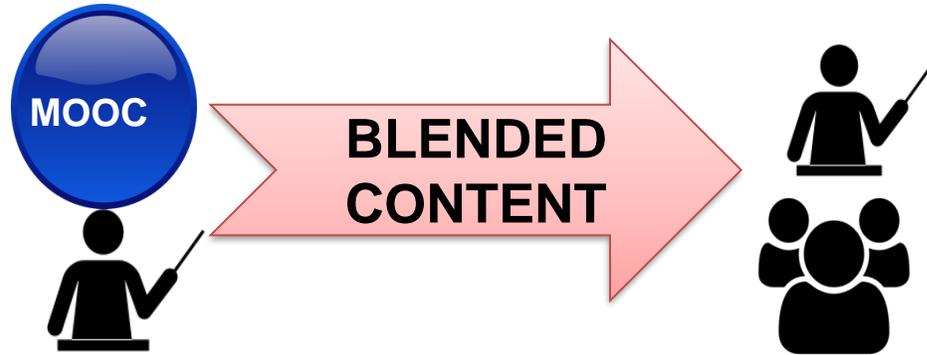


Feedback: “One big difference between a MOOC and a traditional course is that a MOOC is completely voluntary. You decide:

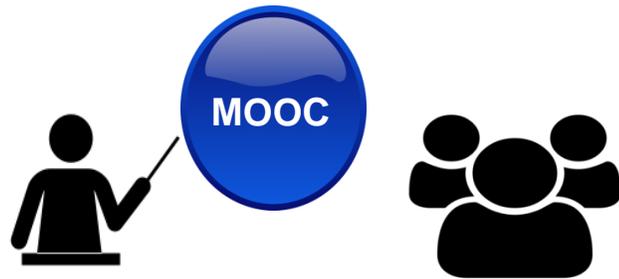
- *that you want to participate,*
- *how to participate, then you participate.*
- *If you're not motivated, then you're not in the MOOC.”*



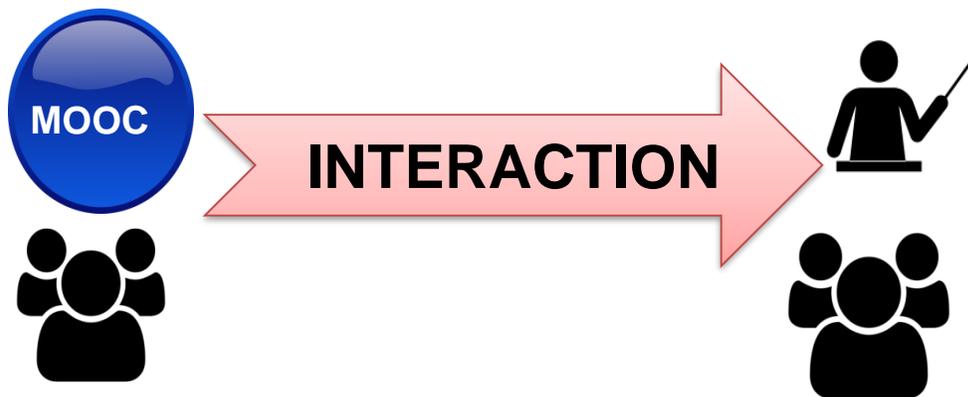
Blending MOOCs with Classrooms



- ❖ Instructor takes the MOOC at his own pace
- ❖ Blend his own material with MOOC content



- ❖ MOOC may be fully or partially used directly in the class



- ❖ Students are advised to go through specific contents from MOOC
- ❖ Interactive session/ problem solving in classrooms



Challenges of MOOCs in Indian context

- ❑ Localization and **Language Issues**
- ❑ Quality and **motivation of the faculty** as role is changing to facilitators, enabler and Guide
- ❑ **Teacher training is required on a massive scale**
 - to transform from contemporary teaching practices to new teaching learning pedagogy
- ❑ Innovation is required in the **recognition and accreditation of skills**, that allows students to learn in different ways **to gain equally valuable qualifications.**
- ❑ **Teachers** to be at the heart of **designing and leading these changes**, as empowered and valued partner in reform.

Journey of

“Innovative Research in Pedagogy for mini-MOOCs blended with Instruction Strategies to enhance Quality of Higher Education”

Project

Objectives



To inculcate Innovative Pedagogy in Engineering Education and cutting edge MOOC Instructional design blended with appropriate face to face instructional strategies to enhance Engineering Education. This will be done by designing Mini MOOCs with the help of Future Learn (UK) and then further scaling up the activity with the help of lead zonal institutions. The Main initiative will be to develop Mini-MOOCs Designing and Developing Mini-MOOCs.



To make the initiative as PAN-India initiative by having 11 zonal lead institutions who will further take up the lead to train the Tier-2 and Tier-3 Institutions in their region.



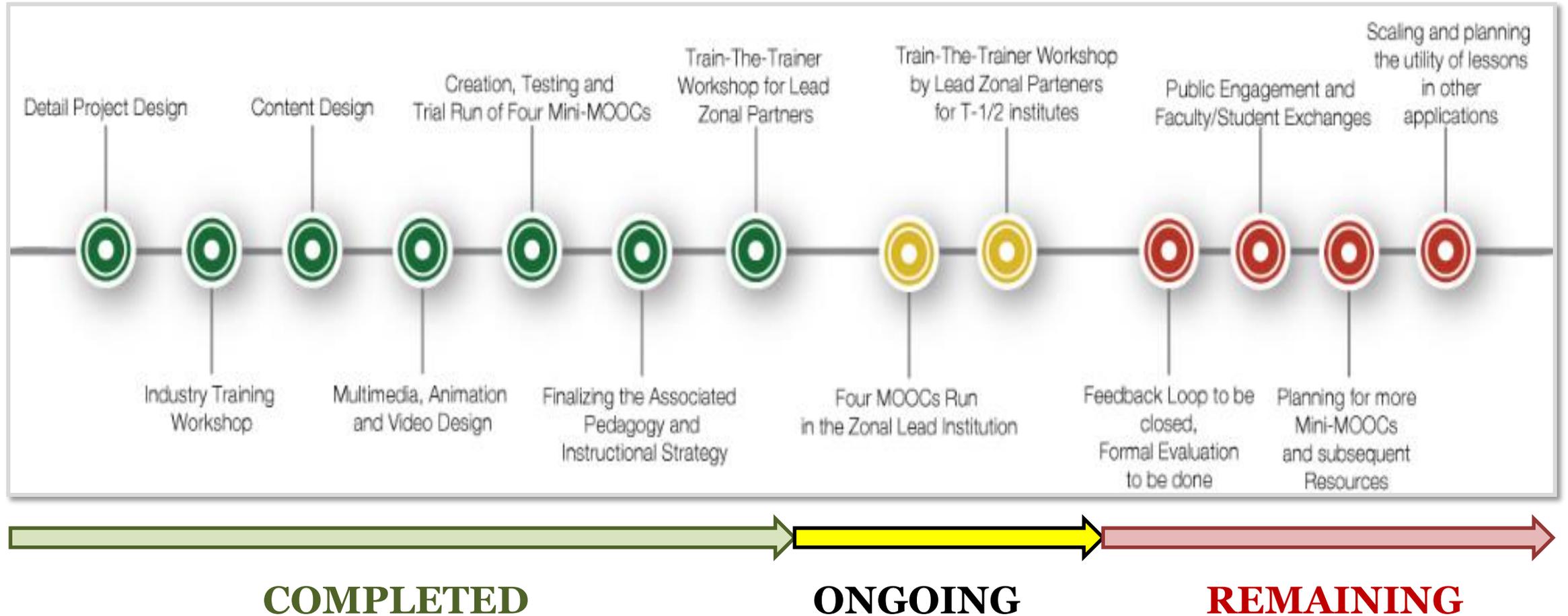
To enhance the capacity of the teachers and driving technology enhanced education adoption in Universities. We will be introducing the technology, skills, resources and training required for developing such MOOCs at the institutional level.

11 Zonal Institutes of India



- Chitkara University, Baddi, HP
- Amritsar College of Engg & Tech., Amritsar
- PSIT, Kanpur, UP
- NIT Silchar, Assam
- Bhilai Institute of Technology, Durg, Chhatisgarh
- FCRCE Mumbai, Maharashtra
- NIST, Odisha
- SR KR Engineering College, Andhra Pradesh
- VIIT & Keerti College
- Amrita University, Kerala
- Marwadi Education Foundation, Rajkot

Series of Activities Performed



What has Now been Enabled ?



Designing of world class contents for Mini-MOOCs (4 No.)



Running of mini-MOOCs on FutureLearn Platform for their use by the institutional partners.



Testing the efficacy of these mini-MOOCs for further improvements.



Training of instructors for creation of more mini-MOOCs via Train-The-Trainer workshops.



The destined mini-MOOCs with quality content have been developed and their first run has been launched starting from 4th and 11th September 2017.

Main Achievements



Workshops have been completed across 11 zones covering the whole country with outstanding feedback.



Titles of the Four mini-MOOCs are:

- MOOC Life Cycle**
- Beginning SQL: A Simplified Approach**
- Programming using Basic Python**
- How to create a Great Online Course**



An extensive framework has been designed to the deep learning from the collected data.

4 Mini-MOOCs

An Online Course at International Future Learn Platform

MOOC Life Cycle

From Inception to Delivery

COMING SOON...

Course Contents

- Pedagogy of Hybrid Mini -MOOC's
- Frequency, Certification, Cost models and Technology framework
- Selection issues and prerequisites

Building
Frame and get certified

Deploying
Running the framework

Inception
Life cycle of MOOC and the pedagogy of delivery

Administering
Resolve market related issues

About the Instructor

Dr. Deepak Garg is a Professor at Computer Science and Engineering Department at Bennete University, Greater Noida, India. As the Chairperson of IEEE Education Society of India, he has 18+ years of teaching experience.




An Online Course at International Future Learn Platform

How to Create a Great Online Course

Design an online Learning Platform

COMING SOON...

Course Contents

- Identify opportunities for creating learning experiences from subject content
- Discuss learning design and course design practices
- Reflect on created or existing courses and identify areas for improvement
- Apply social learning concepts marrying FutureLearn's approach and functionality
- Design an effective online course

About the Instructor

Nigel Smith is Head of Content at FutureLearn, the leading international MOOC platform for social learning. Nigel manages a large team of online learning experts who train and support universities all over the world to develop and deliver great courses on FutureLearn.




An Online Course at International Future Learn Platform

PROGRAMMING USING PYTHON

Master the Language Efficiently

Course Contents

- Introduction to Python
- Basic Functions, Decision And Loop, Statements
- Write full Programs Using Lists, Tuples and Dictionaries
- OOP's Usage of Classes and The Handling

Learn to use decision control statements, loop control statements in Python

Write efficient programs in Python using lists, tuples, dictionaries

Define new functions for performing different tasks

Create classes for modelling real world objects and their relationships using inheritance

Store and manipulate data to and from files in Python

About the Instructor

Dr. Shwari Goyal is Professor at Bennett University, Greater Noida, U.P., India. She has 17 years of teaching experience. Her research areas are Artificial Intelligence, Machine learning, Software Reuse and Programming in various languages.

Tentative Date:
4-Sep-2017




An Online Course at International Future Learn Platform

BEGINNING SQL

A SIMPLIFIED APPROACH

Better Skill. Better Placement. Better Future

QUICK START
Interview and Career based curriculum (1 month course)

BI-LINGUAL
With course available both in English and Hindi

RELAXING
Module based. Watch and Solve at your own pace

INTERACTIVE
Discussion forum providing help from co-ordinators.

Course Contents:

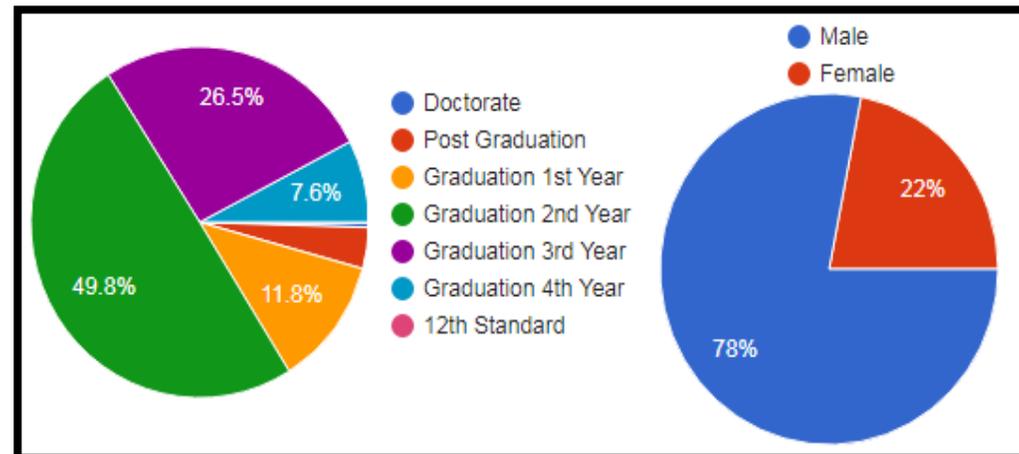
- Week-1: Introduction to SQL and Performing basic operations with SQL
- Week-2: Creation of Tables with Integrity Constraints
- Week-3: Alteration of Tables and Joining of Tables
- Week-4: Grouping of Data

About the Instructor:

Dr. Pardeep Bhatia is Associate Professor in the Department of Computer Science and Engineering at Thapar University, Patiala. He has more than eighteen years of academic experience. He is the author of well read book on database titled as Simplified Approach to DBMS. He has authored another book titled as Beginning with SQL: A Simplified Approach as the outcome of this course. He is acting as Co-PI on Royal Academy of Engineering (UK) funded research project on Innovative Research in Pedagogy with Mini-MOOCs blended with instruction strategies to enhance quality in Higher Education.

Tentative Date:
4-Sep-2017





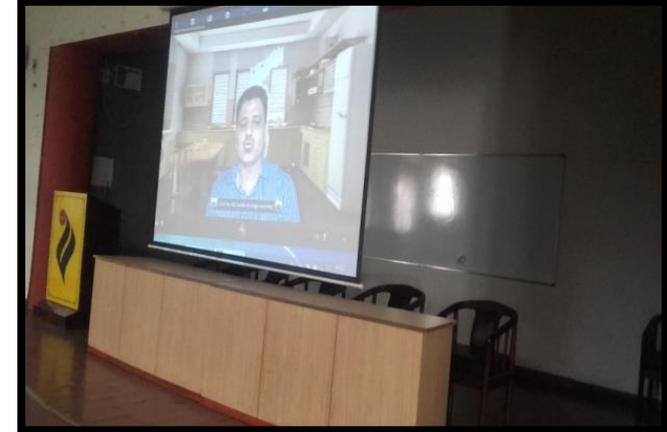
Workshop Photographs



**Training Session By
Dr. Parteek Bhatia**



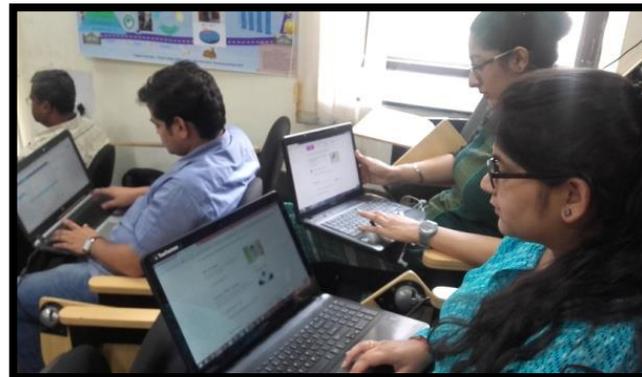
**Training Session By
Dr. Deepak Garg**



**Training on MOOC
Creation Tools**



Preparation of MOOC



**Participants accessing
created MOOCs**



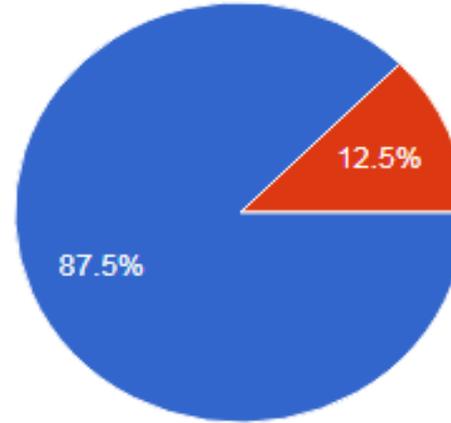
**Statistics on FutureLearn
Platform**

Participants' Feedback

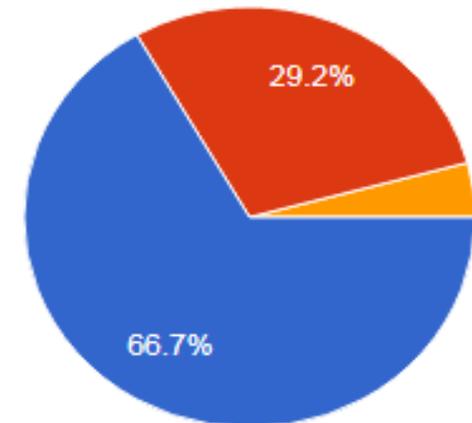
Highest



Interested to attend Follow-up Workshop



Instructors Communication Level



Overall Ratings of the Workshops

Lowest

Workshop Media Coverage

8 CityLine TheHitavada
Tuesday September 19 2017

'Spreading knowledge to masses is responsibility of good teachers'

■ Staff Reporter
DURG, Sept 18

TWO-day workshop on "Innovative Research in Pedagogy for Mini MOOCs Blended with Introduction Strategies to Enhance Quality of Higher Education" commenced today in Computer Science and Engineering (CSE) department of Bhilai Institute of Technology. Chief Guest Dr. Prateek Bhatia, Principal Dr. Arun Arora and Coordinator of workshop Dr. MV Padmavati, Head CSE department inaugurated the workshop in traditional way. Dr. Pawan Patnaik and Dr. Ashok Behra are co-coordinators.

Dr. Padmavati deliberating on objectives of the workshop emphasized the need for teachers to design their own Massive Open Online Courses (MOOCs). Dr. Arun Arora said Mini Moocs itself is not less than any research work.

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Moocs help to bridge the gap between slow and faster learners. Dr. Bhatia said spreading knowledge to masses (billions of Indians) is responsibility of good teachers. Traditional teaching cannot connect with masses in rural parts not connected with technologies BIT Durg is among 11 Zonal Institutes as partner to disseminate this knowledge. These institutes are required to train teachers to develop their own Moocs and to energize 200 students from each institute.

Royal Academy of Engineering, UK and Thapar University Patiala are funding the programme. It involves to design and develop from Mini Moocs to enhance the capacity of teachers to improve education delivery experience. Technical partner is Future Learn. The objective of the program is to develop Adaptive Learning system with Educational Data Mining (EDM) and Learning Analytics. The EDM for students should be used on think, pair and share basis.

Design level of content according to level of students. Levels of education, assignment and content can be prepared according to ability of students. Learning analytics is to improve performance. Adaptive learning system is overall platform. Our education system is not customized so different levels of students read the same course. Hence Adaptive Learning System assumes greater importance.

where. Our day to day learning content can be delivered in an effective way. Courseur developed the idea in 2004 Future Learn, UK is the platform on which videos can be prepared and uploaded. Government of India's initiative is "Swayam" higher education will play significant role. More and more teachers should join this movement and contribute to enhance quality of education.

Direct To Home (DTH) Channel facility allows teaching without internet facility. DTH box is like set top box and can be installed in homes. BIT is among 11 colleges as resource centres across the nation. Future of higher education will play significant role. More and more teachers should join this movement and contribute to enhance quality of education.

Dr. Bhatia

Dignitaries on dais during the workshop.

Audio Visual learning is the most important, says Dr Bhatia

IN an exclusive talk with The Hitavada Dr. Bhatia explained importance of Moocs. It plays major role in teaching billions of population by providing us platform to connect with them and to improve their skills. Contents are according to local languages. Learning is by listening, visualizing and reading. Audio Visual learning is the most important. Video makes learning easier and there is clarity of content. Students can learn at their own pace anytime, any-

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Dr. Bhatia

How Original Objectives have been Met ?

- Main initiative to **design and develop Mini-MOOCs**
 - **Completed**
 - With the help of FutureLearn (UK) running in the main zonal institutes for their efficacy.

- To make the initiative PAN-India and to **enhance capacity** of the teachers and driving technology enhanced education adoption in Universities,
 - **completed**
 - **Train the Trainer Workshops - at zonal institutes across India.**

Our Impact amongst the Masses

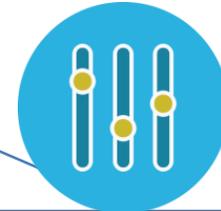
Project Outreach



550 instructors have been trained involving 97 institutions with the help of 11 zonal partners.



2200 learners will complete the 4 mini-MOOCs developed for validating concept of Mini-MOOCs in Indian Context.



Data across 12 parameters is being collected to do the analysis.

Learning and Challenges



Learned the complete process, procedure, technicalities. involved at the backend, for designing of mini-MOOCs along with the expectations and requirements of stakeholders.



Major **challenge**

- how to motivate and encourage the active involvement of instructors throughout the development phase of mini-MOOCs.
- Many stakeholders appreciate the whole thing but somehow don't jump onto it to take the first step in developing and implementing the MOOC system for their respective audience.

Partners-Activities Involvement



UK Partner FutureLearn

- contributed in developing the world class quality content for the mini-MOOCs.
- Provided its platform for mini-MOOCs all across the country



Spoke Universities:

- Contributed by taking active participation for their respective zones and helped in conducting **Train the Trainer workshops** for the training of Tier 2/3 institutes on the latest tools and technologies in developing MOOCs.
- It has helped us **to collect lot of ground data** on the perception of stakeholders, challenges and opportunities.

Contact Persons

Dr. Susheel Mittal CChem FRSC

Senior Professor, Sch of Chem
Biochem & Principal Investigator,
Thapar University, Patiala, India.

 smittal@thapar.edu

Dr. Deepak Garg

Professor,
CSED & Co-PI,
Bennett University, India.

 deepakgarg108@gmail.com

Dr. Parteek Bhatia

Associate Professor,
CSED & Co-PI,
Thapar University, Patiala, India.

 parteek.bhatia@thapar.edu

Dr. Shivani Goel

Professor,
CSED & Co-PI,
Bennett University, G NOIDA India

 shivani.goel@bennett.edu.in

Thank You for your Time

Some Issues



Students who do not have level of understanding in terms of **Prerequisite Completion**, Language, Accent and Technology adoption lag face issues of degraded teaching learning process



Students from Non-IT and Non-CS streams has to become conversant with the flow and delivery of the course in the new format



If the student does not feel good in the **first course**, then it becomes **difficult to bring him back** to take another MOOC Course

Challenges



❖ Faculty conceptualization of MOOCs



❖ IT culture versus Traditional Higher Education



❖ Entrepreneur versus Educator

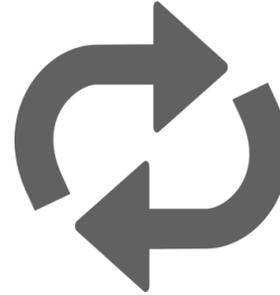


❖ Economic Viability

New Pedagogical Characteristics



- Anytime
- Anywhere



Numerous Times



- Interactive
- Collaborative
- Networked



- Focussed
- Targeted

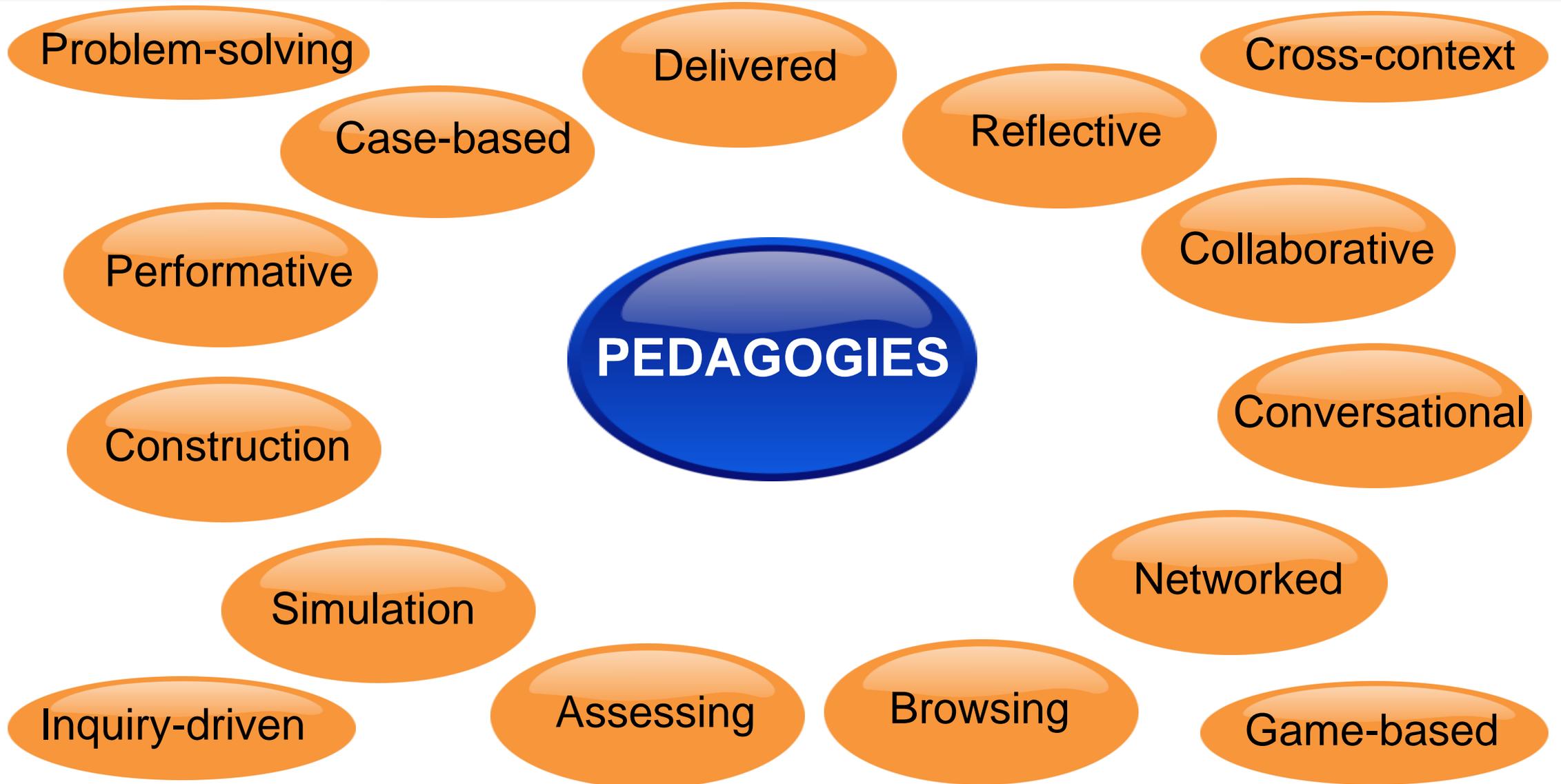


Better Instructors



Abstraction of Merit

Pedagogy Ecosystem



Decision factors for selecting Pedagogy



Theoretical

Practical



Maturity

Background

**OTHER
S**

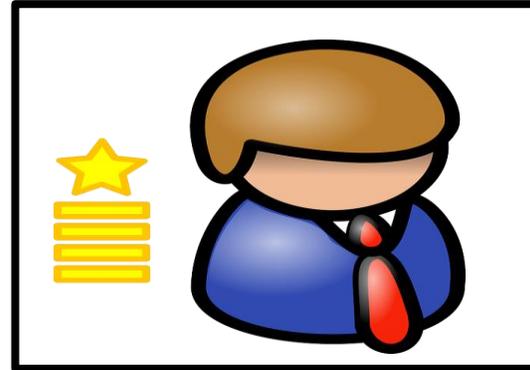
Environment

Content level

Audience based Classification



Skill
Enhancement



Better
Teaching
Practice



Seeking
Jobs



Extra Credits
from Universities