



COMMONWEALTH of LEARNING

MOOC for Capacity Building in Indian Agriculture

NAAS-COL Brain Storming Session

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Background

- Online Learning matures into an Institutional Practice
 - Georgia Tech now offers a full *MS* online
- Access devices have proliferated
 - Highly diverse
- Drive to unbundle the package of Higher Education (North America)

MOOC-Massive Open Online Courses

- Every letter in MOOC negotiable
- Origin: U Manitoba in Canada (2007)
- Widespread notice in 2012
 - Highly integrated platforms
 - *edX*, Coursera, Udacity

MOOC in early 2014

- Total estimated learners in MOOC:
 - about 4 Million
- Large new players:
 - FutureLearn (UK)
 - Tsinghua U (China- highest QS ranked in Asia)
 - NPTEL India

Looking inside a MOOC - World Bank Course on Climate Change

- World Bank Course on Climate Change
 - Offered through Coursera.com, a for-profit MOOC provider
 - “Turn Down the Heat: why a 4C warmer world must be avoided”
 - Concluded on 28th Feb 2014
 - Two co-instructors with a dozen resource persons



Turn Down the Heat: Why a 4°C Warmer World Must be Avoided

by Pablo Benitez, Kanta Kumari Rigaud



Week 1 Video Talks

Help

ABOUT COURSE

- Welcome
- Announcements
- Course at a Glance
- How to Succeed
- How to be Social**
- Discussion Forums
- Map Yourself

WEEKLY TOPICS

WEEK 1: CLIMATE CHANGES AND THEIR IMPACTS

- Overview
- Video Talks 1, 2

4°C Turn Down the Heat

Why a 4°C Warmer World Must be Avoided

4°C Week 1 Video Talks

Observed Climate Changes and Impacts: 650,000 Years to Now

Setting the Context
Duration: 08m 02s
Speaker: **Prof. Hans Joachim Schellnhuber HBE**
Director, Potsdam Institute for Climate Impact Research, Potsdam, Germany

[Video transcript](#)

The Changing State of the Climate
Duration: 13m 08s
Speaker: **Dr. Thomas R. Karl**
Director, NOAA's National Climatic and Data Center, Asheville, North Carolina, US



Forums

Help

Week 1 Discussion

Subscribe for email updates.



Climate changes and their impacts Please read our [forum posting policies](#) before posting or starting a new thread.

Search

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Sub-forum

[Policy and Leadership](#)

[Climate Champions](#)

[Meetup with experts - Google Hangout on the Air \(10:00 am EST on Friday, January 31\)](#)

[Questions and clarifications regarding this week's quiz and exercise/peer assessment](#)

Latest Activity

[Carbon footprint of India and...](#) (33 minutes ago)

[where does your carbon footprint go](#) (7 hours ago)

[How can our traditional knowledge...](#) (20 hours ago)

[Impact of climate change on food...](#) (2 hours ago)

All Threads

Start new thread

Top threads **Last updated** Last created

Methane emissions from land

STAFF REPLIED · Started by [Pablo Torres](#) INSTRUCTOR · Last post by [John Sykes](#) (3 hours ago)

0 points **5 posts** 22 views

Can we really turn down the heat?

STAFF REPLIED · Started by [Akinola A. Babatunde](#) · Last post by [Jennifer Zikos](#) (3 hours ago)

6 points **48 posts** 212 views

Natural gas fracking

Started by [Pablo Torres](#) INSTRUCTOR · Last post by [John Sykes](#) (3 hours ago)

0 points **3 posts** 14 views

Relation between temperature and atmospheric CO2

Started by [Pablo Torres](#) INSTRUCTOR · Last post by [John Sykes](#) (3 hours ago)

0 points **2 posts** 5 views

Climate Change: The most important issue of our time

Started by [Kristin Adkins](#) · Last post by [Kristin Adkins](#) (4 hours ago)

0 points **1 post** 2 views

WEEKLY TOPICS

WEEK 1: CLIMATE CHANGES AND THEIR IMPACTS

- Overview
- Video Talks 1, 2
- Resources
- Quiz



4° Turn Down the Heat

Why a 4°C Warmer World
Must be Avoided

Projected Extreme Temperature


Week 02: Video transcript

Featuring **Dr. h.c. Bill Hare**

In the *Turn Down the Heat Report*, we used the new generation of climate models, the so called CMIP5 climate model and the comparison generation five models to project the consequences of two scenarios: a 2°C world and a 4°C world.

And whilst the 4°C world warms the planet roughly 4°C on average, the regional consequences of that warming are quite different. The climate models show that we expect the warming over land to

MOOC is thus....

- An event
 - not just a face-to-face class that has moved online
- Content is created by instructors AND by learners (in discussion forums)
- Strong presence of online social spaces/norms
-  ***MOOC is not just an event, it is a media event***

MOOC is rooted in technology mediation

- Learner identity management
- Content authoring
- Content delivery
- Online discussions and Forum
- Online socialisation
- Evaluation and grading
- Analytics of participation

MOOC is at the intersection of

- Increased availability of bandwidth
- Diversity of access devices
- Cloud computing
- Business Analytics/Intelligence

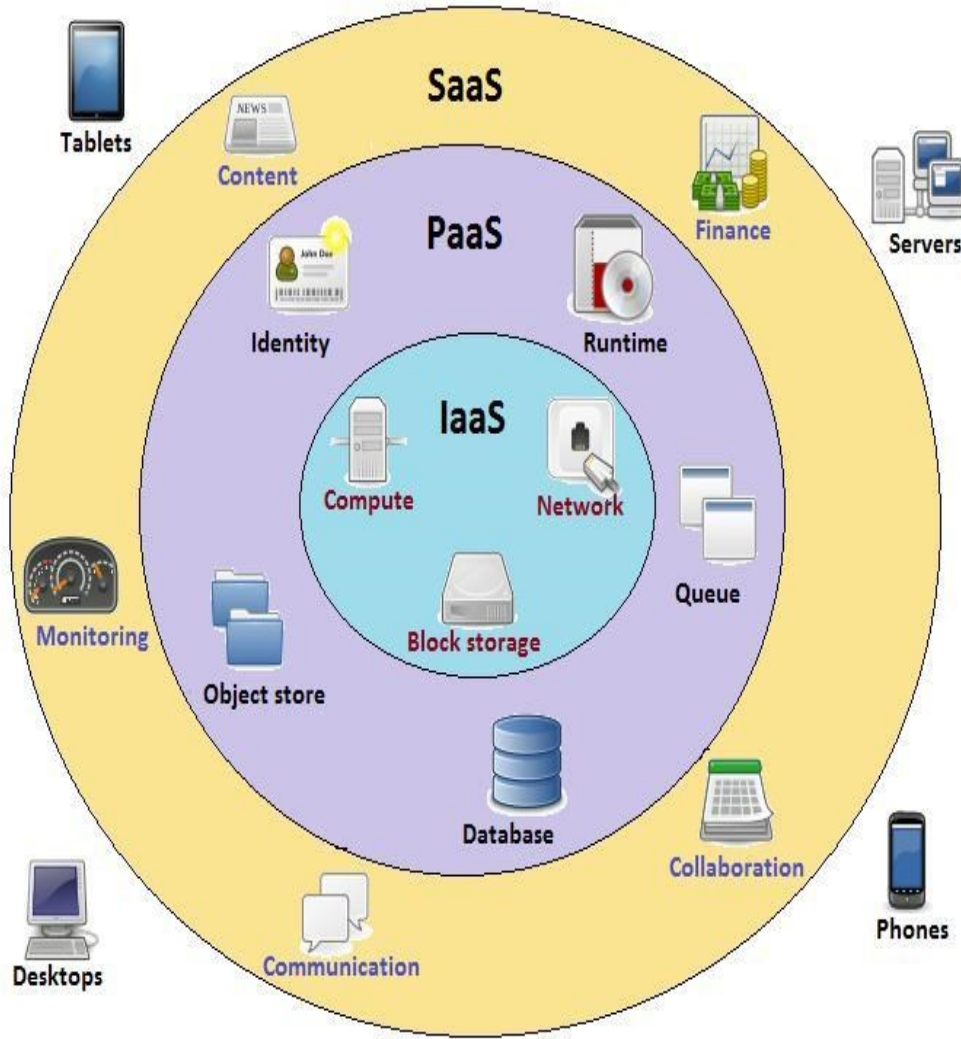
MOOCs | Some Technology Aspects

- Leveraging cloud computing
- Content/learning management systems
- Creation of learning content
- Delivery of learning content
- Engagement analytics
- Role of a MOOC-IT specialist

Cloud Computing

- Deliver computing as utility/service
 - Accessible over a network (Internet or intranet)
- Lower provisioning time and cost
 - On-demand self-service
 - Pre-canned configurations available e.g. a Moodle virtual machine on Amazon
- On-demand scalability
 - Can add more compute power based on application demand
- Control over geographic location of VM
 - Addresses privacy concerns

Clients



Learning Management Systems (1/2)

- Content is central to a MOOC *event*
 - Generated by both instructors and students
 - E.g. lecture videos/slides and forum discussions
- Online *learning* via MOOCs
 - It is more than just watching the lectures
 - Assessment and feedback are crucial components
 - Online interactions among participants is crucial too
- Learning Management Systems
 - Provide necessary infrastructure to conduct a MOOC event

Learning Management Systems (2/2)

- Provides self-service and self-guided services for:
 - Student administration and registrations
 - Reuse of knowledge
 - Quick assembly and delivery of learning material
 - Course event management
 - Engagement analytics
- Typically, it is a web based software application
 - Several open source products available (Sakai, Moodle, Canvas etc.)

Creation of Learning Content (1/2)

- Learning content is mostly in the form of short videos
- Some content creation issues:
 - Where to record? Professional studio or home studio?
 - What tools to use?
 - Is content reuse desired? How to create for reuse?
 - What formats and resolution to choose? It impacts size.
 - Create incrementally or not? Impacts delivery timeline.

Creation of Learning Content (2/2)

- Content creation tools selection
 - Depends on where we want to record
- Media formats are important
 - Need to support variety of clients and bandwidth
- Viewer experience is crucial
 - Plain “voice over slides” is a big repellent
 - Animation, scribbling and mixing enhance viewer experience
 - In-video quizzes and interaction
- Video editing skills are important
 - Editing person should have knowledge of content being edited

Delivery of Learning Content

- Learning content
 - Mostly in the form of short videos
 - Often created incrementally in a new course
 - Can be potentially reused
- Delivery of content
 - Mostly over the Internet
 - Leverage services like youtube (for open content)
 - Network bandwidth issues with students
- Harvesting engagement analytics
 - Depends on choice of streaming service and LMS platform

Engagement Analytics (1/2)

- Measuring students' engagement is crucial
 - For achieving a MOOC's broader objectives
 - For students' assessment and certification
- Can be obtained via analytics services of:
 - the LMS itself
 - content hosting/streaming service

Engagement Analytics (2/2)

- Should be assessed via multiple channels
 - Discussion forums and chatroom participation
 - Click-streams for MOOC's pages
- MOOC's website layout is important
 - E.g. multiple videos on single page or
 - One page per video (learning object)
 - It impacts your ability to extract analytics data
- Students downloading videos for offline viewing
 - Can impact accuracy of analytics data

Role of a MOOC-IT Specialist

- Solid IT support is a must for any MOOC initiative
- Running a MOOC needs specialized IT skills
 - Platform selection, setup and administration
 - Planning and managing content delivery
 - Selection and setup of content creation tools
 - Harvesting analytics
- Plain webmaster's skillset does not suffice
- Desired skillset in a MOOC-IT specialist
 - Hands-on with IT architecture and management
 - Media content creation
 - Exposure to education and learning domain

MOOC in India- NPTEL

- A large online resource of courses
- About 200 courses online, equal to 4600 hours
- Launched a MOOC with industry participation
 - March 3, 2014
- New foundation courses for any interested learners
- Course is free, proctored exam and certificate is Rs 2000
- <http://opencourses.nptel.iitm.ac.in>

MOOC for Development

- A rapidly evolving trend, focusing on human development interests
- Many educationists consider it the real use of MOOC's
- Interest is to
 - increase awareness,
 - build a community of practice,
 - bringing frontline technology topics and HD interests together

MOOC on Mobiles for Development

- Offered and certified by IIT Kanpur and COL
- 2 Oct- 25 Nov 2014
- 2286 participants, 116 countries
- Mobile tech, Ag, education and rural credit covered
- 333 certificates (after assessment)
- About 300 sign ups from Ag, one among top 5 also from Ag
- Large demand for a repeat offer
- <http://m4d.colfinder.org>

MOOC for Ag: India has significant advantages

- E-courses under NAIP: a great asset
 - Largest such source globally (incl. USA)
- Several choices in technology for hosting and for components
 - Mobile theming is no longer a challenge
- Costs are dropping for tech management
- Media centers available in SAU's
- Prior national experience: NPTEL
- Existing thought leadership: UGC

Approaches and Policies

- Multiple stakeholders:
 - Research capacity building
 - faculty improvement
 - extension training,
 - lead farmers/fishers
- Guidelines for quality
 - may have to be audience-specific

MOOC4Ag-Approaches and Policies

- Guidelines for
 - evaluation,
 - ID verification and
 - certification
- Credit for use in recruitment, career advancement and enterprise development

Opportunities for Global Leadership

- NARES in India, both large and diverse
- Reputation for research excellence and coordinated networks
- MOOC may be a new vehicle for masses of learners to take advantage
- Could lead to considerable increase in awareness about food and environmental issues among general population