



Royal Flemish Academy of Belgium  
for Science and the Arts

# *Thinking about Blended Learning*

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## *Thinking about Blended Learning Outline*

- ✧ The drivers and enablers of innovation for blended learning
- ✧ Building the academic community's knowledge of blended learning
- ✧ The MOOC as professional development
- ✧ Professionalising teaching
- ✧ Modelling the teaching costs and learning benefits for blended learning

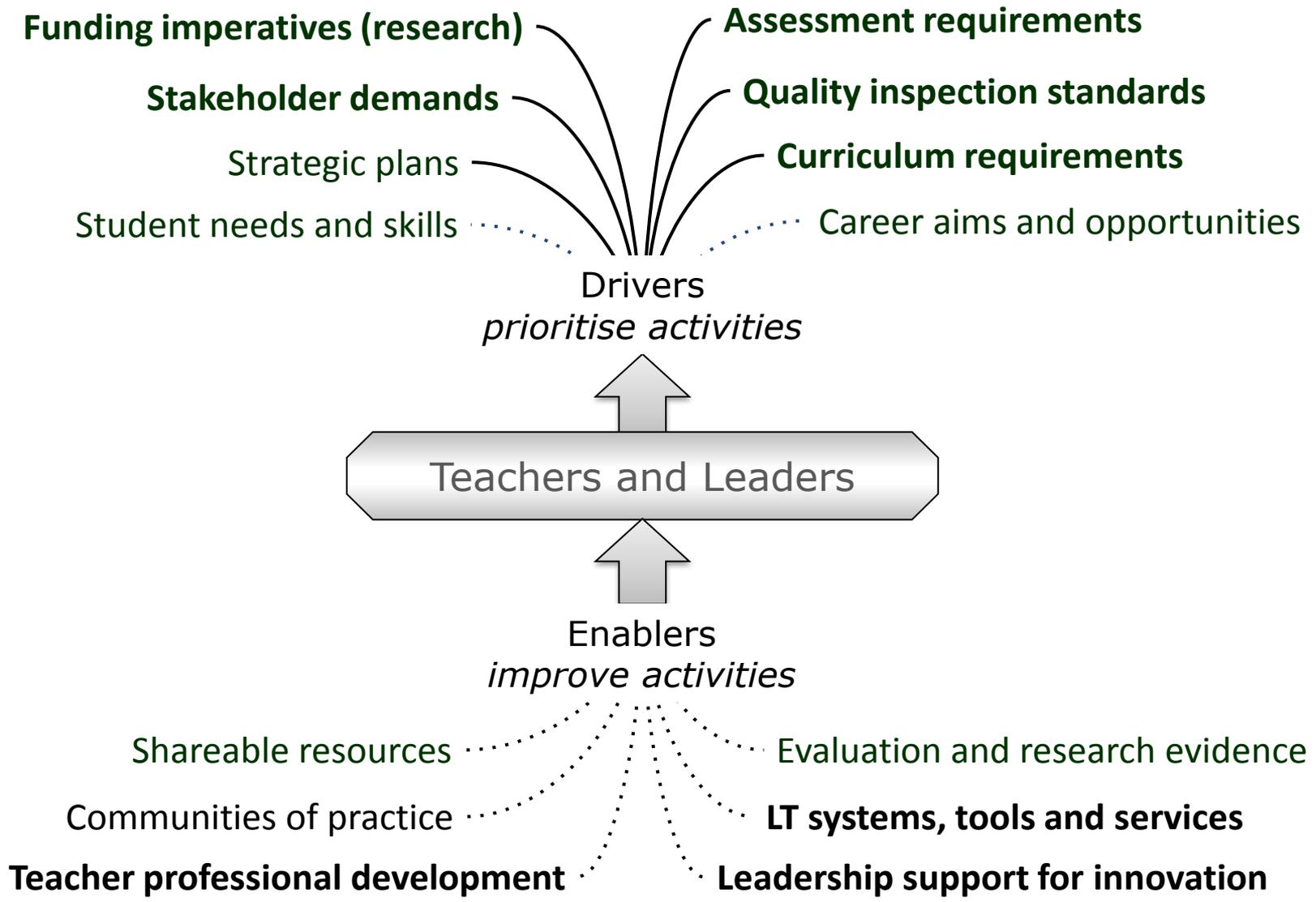
# Learning technology drivers and enablers



Why are the Flemish universities not in the vanguard of teaching, as they so often are in research?

Erik Duval

# Learning technology drivers and enablers



# Updating the drivers

- Funding imperatives
  - **Check** that funding mechanisms use viable costing and investment models for technology-based teaching
  - **Change** funding to be dependent on the quality of teaching
- Students' needs and skills
  - **Check** HE responds to student diversity by using assistive technology for special needs, and online technology for flexible access
  - **Check** HE makes use of students' increasing digital skills and helps them develop the skills of digital learning
- Career aims and opportunities
  - **Change** the standards expected and rewards for teaching excellence to make them dependent on effective use of learning technology
  - **Reward** the personal motivation of the academics who wish to redesign and improve their teaching

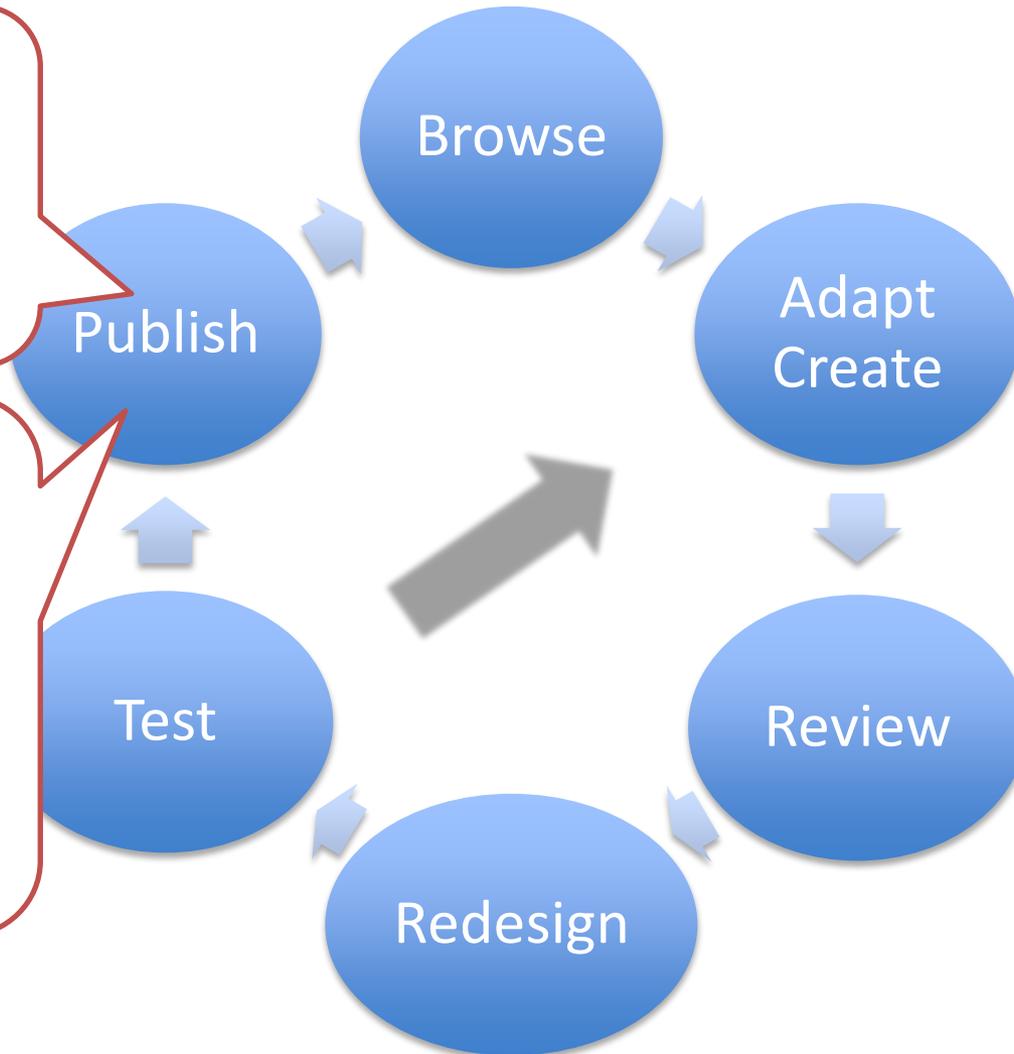
# Updating the enablers

- Teacher professional development
  - Create continuing professional development opportunities to update skills and knowledge of learning technology
- Communities of practice
  - Build mechanisms to support exchange of teaching ideas
  - Promote new pedagogies for using digital technology
  - Create opportunities for peer review of innovative practice
- Shareable resources
  - Promote access to OERs and learning design tools
  - Reduce the costs of innovation
  - Enable teachers to build on each other's work

# Teaching as a design science

Question:  
What is the  
teaching design  
equivalent of the  
journal paper?

Answer:  
A learning  
design that can  
be reviewed,  
adapted,  
improved,  
published,  
reused...



***Building learning technology knowledge***



**Collaborative learning for teachers?**

# MOOCs and Myths

- “content is free”
  - but education is not the delivery of content;
  - the content of courses must be carefully curated
  - student activities must be carefully orchestrated
- “students can support each other”
  - But relying on peer support and assessment does not provide an undergraduate education
  - education is not a mass customer industry, it’s a personal client industry

# The MOOC as undergraduate education

## Profile of students

Figure 3: Coursera survey data of prior level of education, January 2013

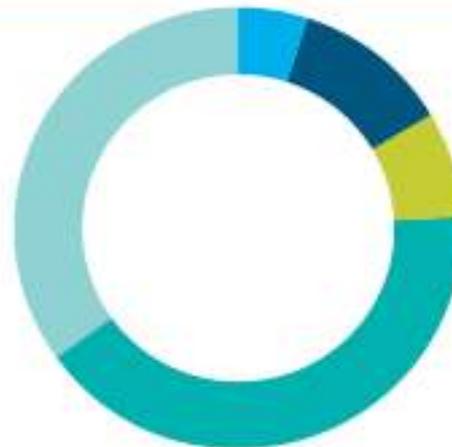
● Doctoral 5.4%

● High school 11.8%

● Associate 8.2%

● Bachelors 42.8%

● Masters 36.7%

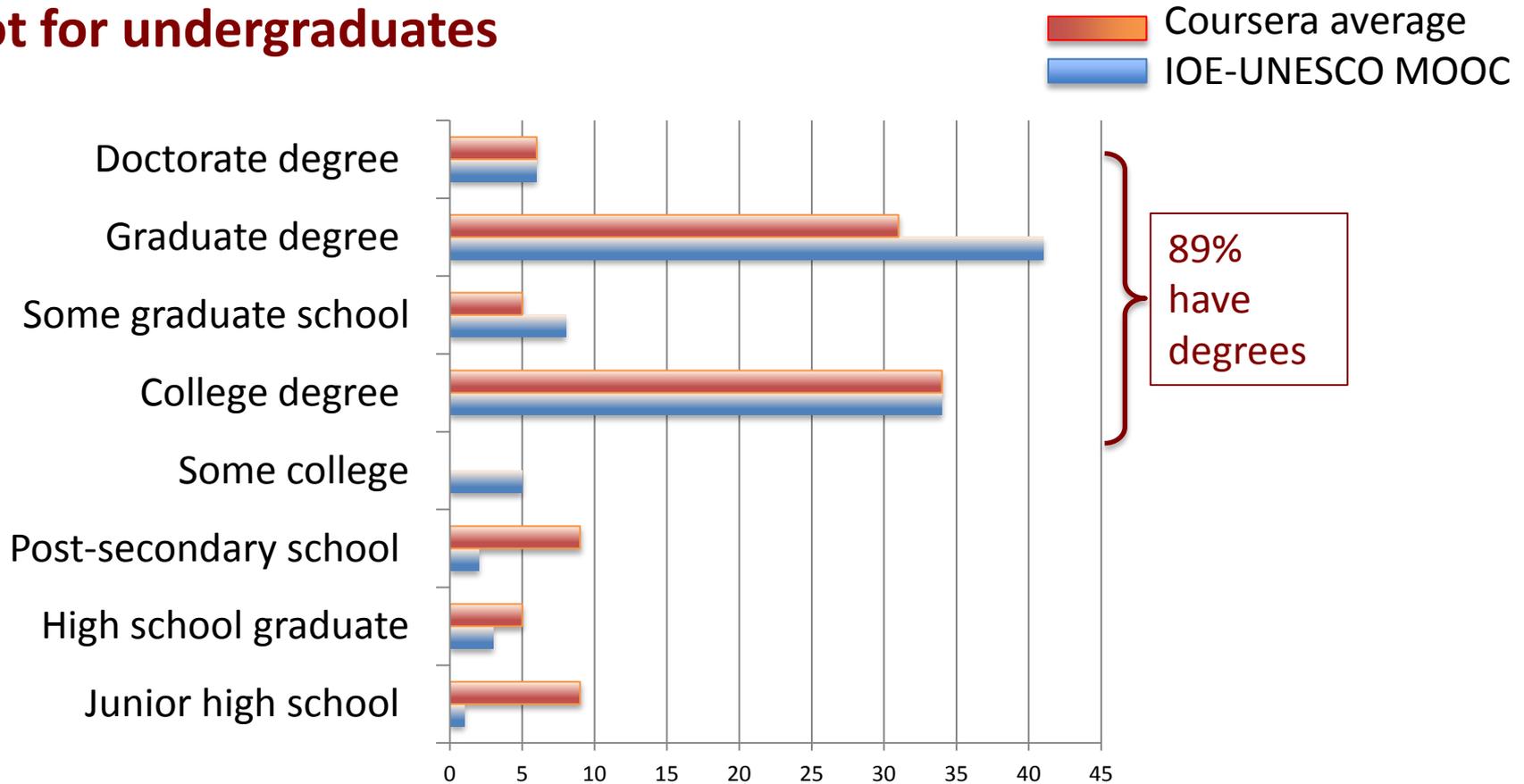


85%  
have  
degrees

*Is this how we learn to provide UG education on the massive scale?*

# The MOOC as professional development

## Not for undergraduates



Enrolled participants

# A MOOC for professional development

<https://www.coursera.org/course/ictinprimary>

The screenshot shows the Coursera course page for 'ICT in Primary Education: Transforming children's learning across the curriculum'. The page features the Coursera logo, navigation links for 'Global Partners', 'Courses', 'Specializations', 'Institutions', and 'About', and a user profile 'Diana Lauril...'. Below the navigation, there are links for 'Edit Course Description', 'Edit Session Descriptions', and 'Edit Session Materials'. The course title is prominently displayed, followed by logos for the University of London, the Institute of Education (IOE), and the UNESCO Institute of IT in Education. A video player shows two children working with a yellow robot, with a 'Watch Intro Video' button overlaid. The course description explains that the course explores how teachers integrate ICT into primary education, featuring examples from schools worldwide and sharing ideas from professional teachers and policymakers. The course is based on studies from the UNESCO Institute of IT in Education in Moscow. Below the description, there is an 'About the Course' section and a 'Sessions' section showing the start date as 'May 27th 2014' and a 'Join for Free' button. A 'Course at a Glance' section is also visible at the bottom.

>9000  
teachers  
registered,  
174 countries

# Curating and orchestrating resources and activities

COURSE

- Announcements
- Syllabus
- Assessment and Grading

WEEKLY STUDY GUIDES

- 1: The 21st Century Primary School
- 2: How does ICT make a difference?
- 3: Pedagogical changes achievable through ICT
- 4: Technology opportunities
- 5: Inspiring examples and implementation concerns
- 6: Making ICT work (from 29th June)

RESOURCES

- Video Lectures
- Discussion Forums
- Quizzes

## 4.1 Orientation to the week

## 4.2 Choosing the technology

**Activity 4.2.1 (Core) - What do other schools do?**

Schools may have different criteria and preferences when choosing new technology to be integrated into their teaching and learning activities.

**Watch** the audio-slide presentation that introduces several issues reported by schools in this context.



ICT in Primary Education  
week 4: Technology opportunities  
**Choosing technology**

Many factors should be respected

- expectations at the school level
- experience and potential of the school
- teaching and learning goals
- safety standards, ergonomics issues, appropriateness...

*Note: The presentation will open in a new browser window, make sure you come back to this page after you watch it.*

**Activity 4.2.2 (Core) - Choosing appropriate technology** 60 mins

In the introductory presentation to Section 4.2 we mentioned the concept of the **developmental appropriateness** of an ICT tool. Here we look further at the set of criteria for considering whether a tool (software or hardware) is developmentally appropriate or not. These criteria come from the Early Childhood Education context, and are published in the UNESCO book 'Recognising the potential of ICT in early childhood education' (UNESCO IITE 2010). However, we believe that they are also relevant for primary education.

**Download** the UNESCO book 'Recognising the potential of ICT in early childhood education'.



Recognizing the potential of ICT in early childhood education

Admin Help

Study guide sequences and orchestrates work with resources and tools linked to forums

Study guide defines activities as Core or Optional and duration

Building a personal portfolio in their Course Journal

# Padlet: sharing ideas on computational thinking

<http://padlet.com/wall/ho8667b77501>

**Experiences on programming and computational thinking**  
Share a visual material (video or image) that illustrates a concrete school experience on using programming with a brief description

**Habs**  
Year 1 Using Beebots in maths



**Habs**  
Using the beebot app alongside the beebots



**Jennifer "My Robotic Friends"**  
<http://csedweek.org/unplugged/thinkersmith>



**Ivan Kalas**  
Programming with Scratch



**Ivan Kalas**  
Programming Beebots in Slovak Kindergarten



**Neeta Nemane**  
Programming with MSW LOGO



**Ivan Kalas**  
Educational robotics



**Neeta Nemane**  
Q.Basic Programming Language



**Ivan Kalas**  
Programming Beebots in Bošany Primary school



**Using Beebots with Year 1 pupils**  
Students program BeeBots to move on the grid according to the activity.  
Examples of activities:  
students have a mathematical question to work out on a card and they programme BeeBot to go on the answer card on the grid  
students program Beebot to go to pictures on grid according to the sequence of a story  
students have to answer a question on a card and program BeeBot to go on the answer card  
<http://connieictjournal.blogspot.com/> - photos of Year 1 students (5 - 6 year olds) using BeeBots in class

**Paola Vallarino**  
Found Shaun the Sheep Academy!  
<http://shaunagameacademy.co.uk/learn-module.php?id=1>  
Enjoy!

**Namita Verma**  
We love to design and draw digitally and it requires lot of patience and digital programming skills  
Our Digital Art:

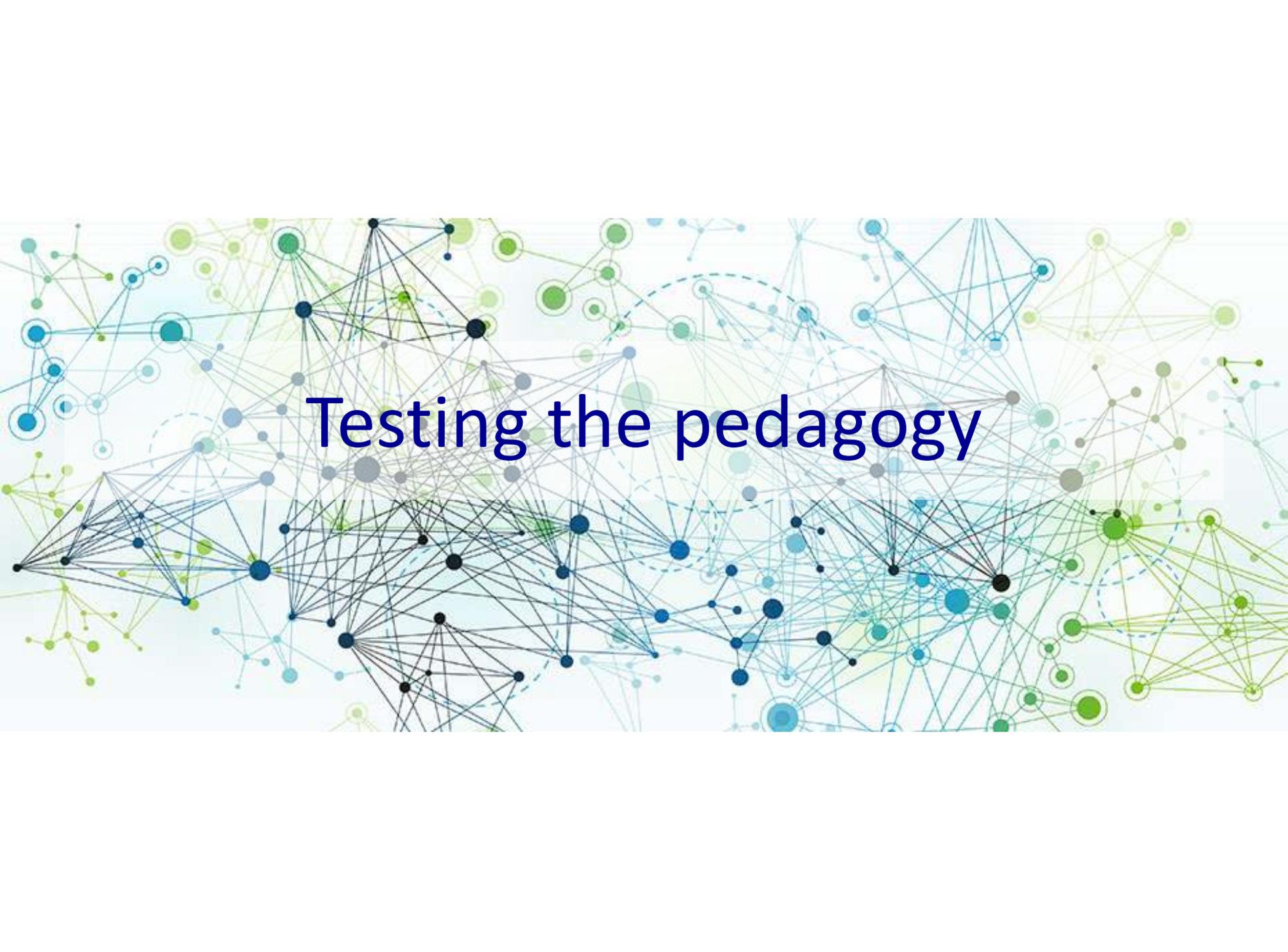


**Namita Verma**  
Our scratch project:



**Sakina Godiwala**  
We haven't used any such programming tools in our school. This is such a unique way to teach and learn along with the students. Will definitely try and use this in my teaching this year.



The background of the slide is a dense, intricate network diagram. It consists of numerous nodes of varying sizes and colors (blue, green, black, and grey) interconnected by thin lines. Some nodes are highlighted with larger, semi-transparent circles. The overall aesthetic is that of a complex system or data network.

# Testing the pedagogy

# Post course evaluation survey

On this MOOC, each week had a **guided sequence** of timed activities.  
Please indicate which statements you agree with below:

I prefer not to have a guided sequence because you always know what you have...

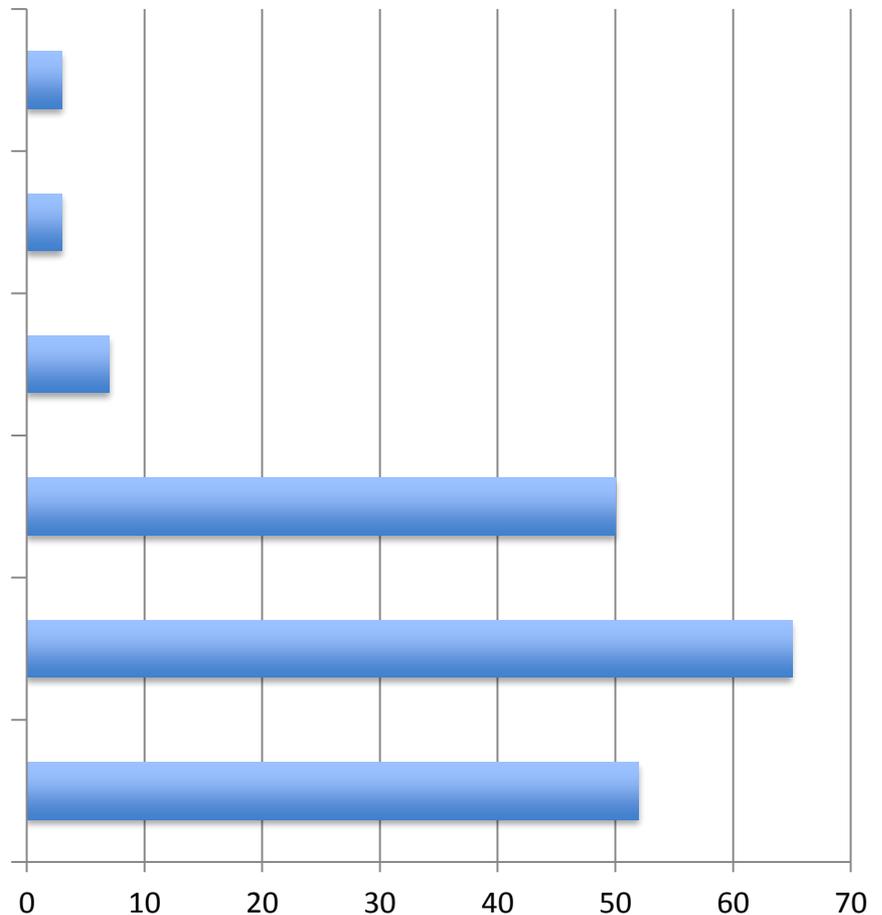
I prefer not to have a guided sequence because it's less complicated

I prefer not to have a guided sequence because then I feel that I can do things in...

I like to have a guided sequence because it helps you get more out of the MOOC

I like to have a guided sequence because it gives an idea of how long each activity is...

I like to have a guided sequence because it's as if the instructor is there guiding you

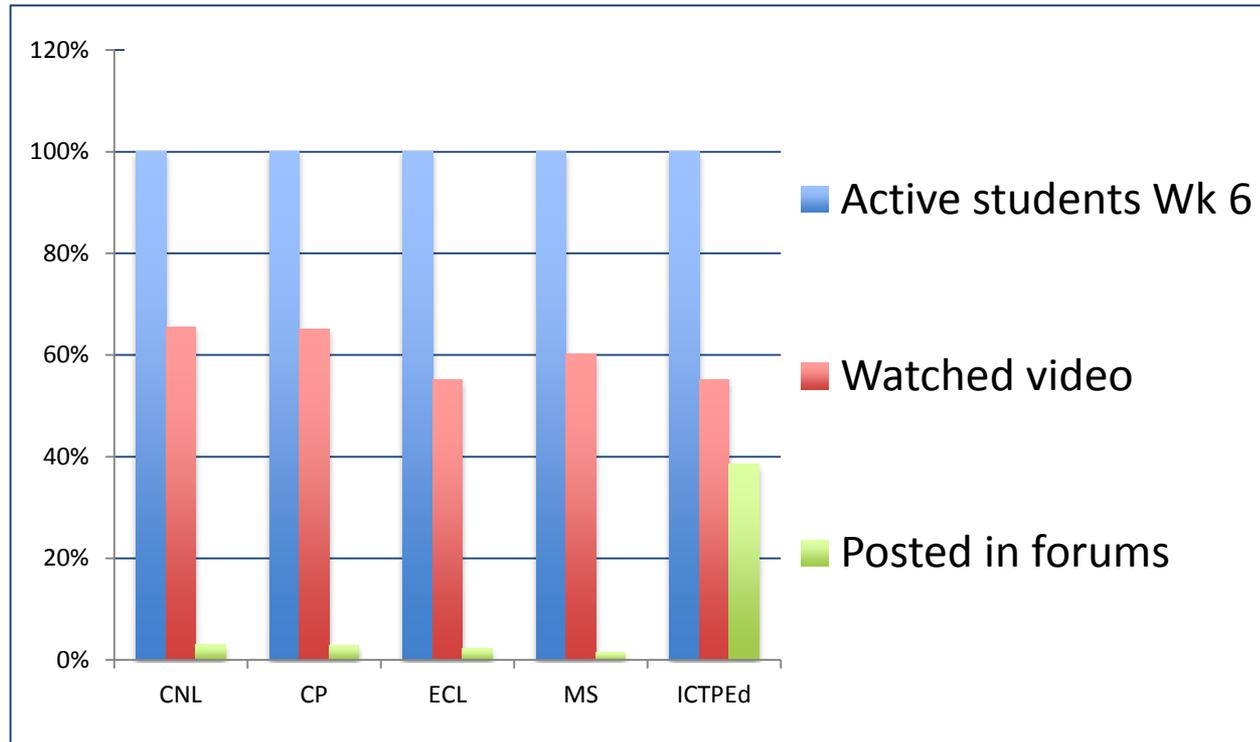


# How useful were these elements of the course material?

## Collaboration activities



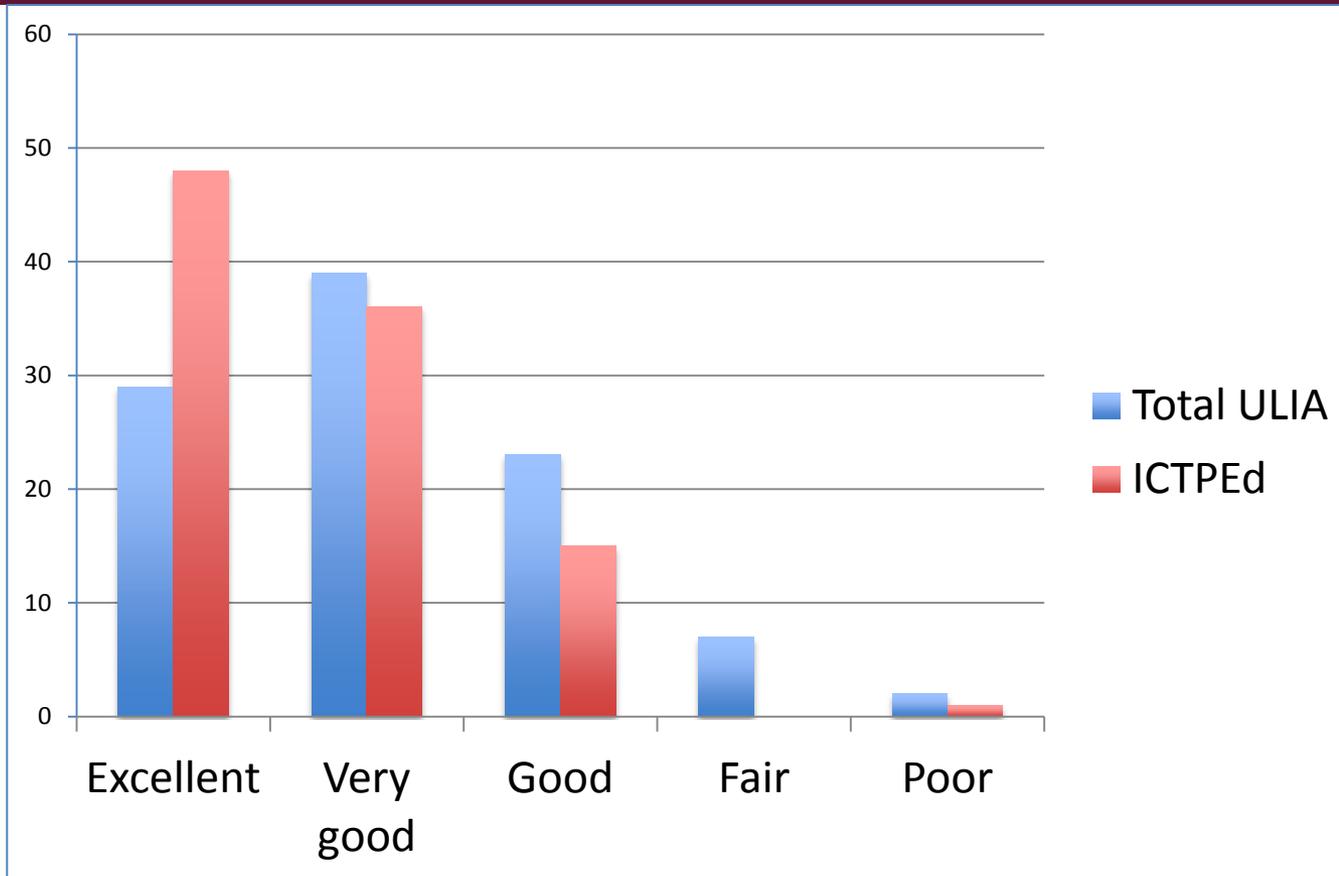
# Comparison with other ULIA MOOCs



Much higher level of engagement in forums, due to

- Cohort
- Study guide

# How good was it?



Did not suffer from low production values  
Benefitted from homogeneous peer group

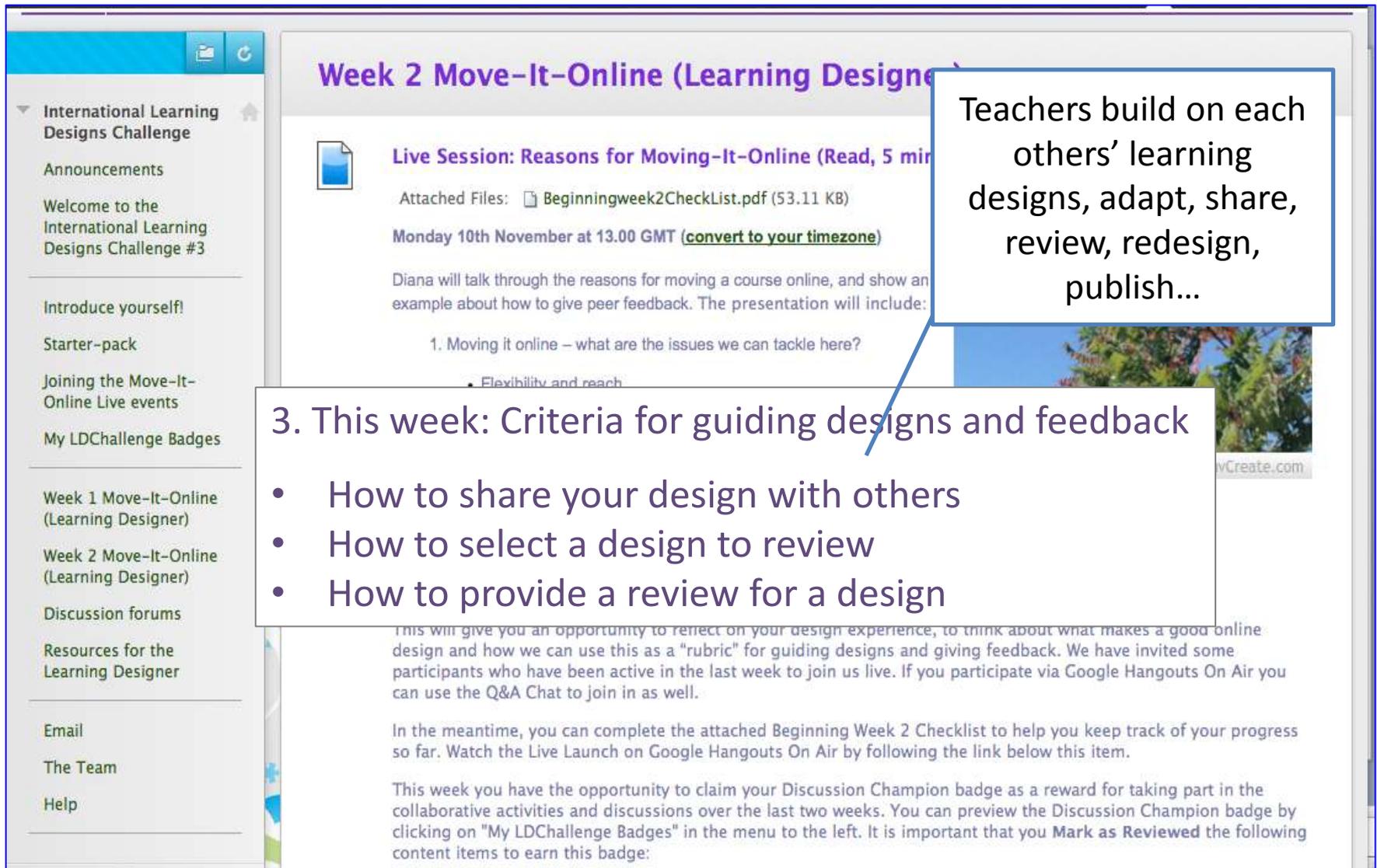
# Problems for which MOOCs are a solution

MOOCs work well for collaborative professional development

MOOCs can support online collaborative learning to professionalise teachers as learning designers *at scale*

# HE lecturers sharing learning designs

<http://www.coursesites.com/s/LDC>



The screenshot shows a Moodle course page for 'Week 2 Move-It-Online (Learning Designer)'. The left sidebar contains a navigation menu with items like 'International Learning Designs Challenge', 'Announcements', 'Welcome to the International Learning Designs Challenge #3', 'Introduce yourself!', 'Starter-pack', 'Joining the Move-It-Online Live events', 'My LDCChallenge Badges', 'Week 1 Move-It-Online (Learning Designer)', 'Week 2 Move-It-Online (Learning Designer)', 'Discussion forums', 'Resources for the Learning Designer', 'Email', 'The Team', and 'Help'. The main content area features a 'Live Session: Reasons for Moving-It-Online (Read, 5 min)' with an attached PDF file 'Beginningweek2CheckList.pdf (53.11 KB)'. The session is scheduled for 'Monday 10th November at 13.00 GMT (convert to your timezone)'. The text describes the session content, including a list of topics: '1. Moving it online – what are the issues we can tackle here?' and 'Flexibility and reach'. Below this, there is a section titled '3. This week: Criteria for guiding designs and feedback' with a bulleted list: 'How to share your design with others', 'How to select a design to review', and 'How to provide a review for a design'. Further down, there is text about reflecting on design experience and using a rubric, and information about a live launch on Google Hangouts On Air. At the bottom, there is text about claiming a 'Discussion Champion badge' as a reward for participation.

Teachers build on each others' learning designs, adapt, share, review, redesign, publish...

3. This week: Criteria for guiding designs and feedback

- How to share your design with others
- How to select a design to review
- How to provide a review for a design

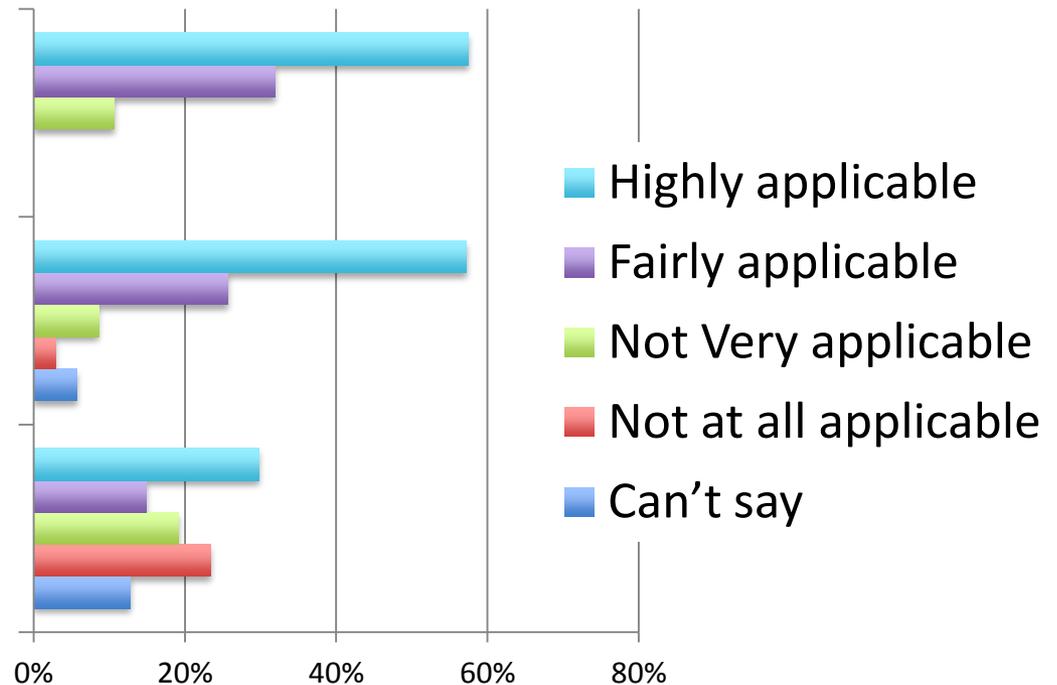
# Does it work? Post-survey

I developed new ideas and had valuable insights about my teaching practice prompted by

... creating a learning design in the Learning Designer

... the process of reviewing a learning design

... feedback I received on my design



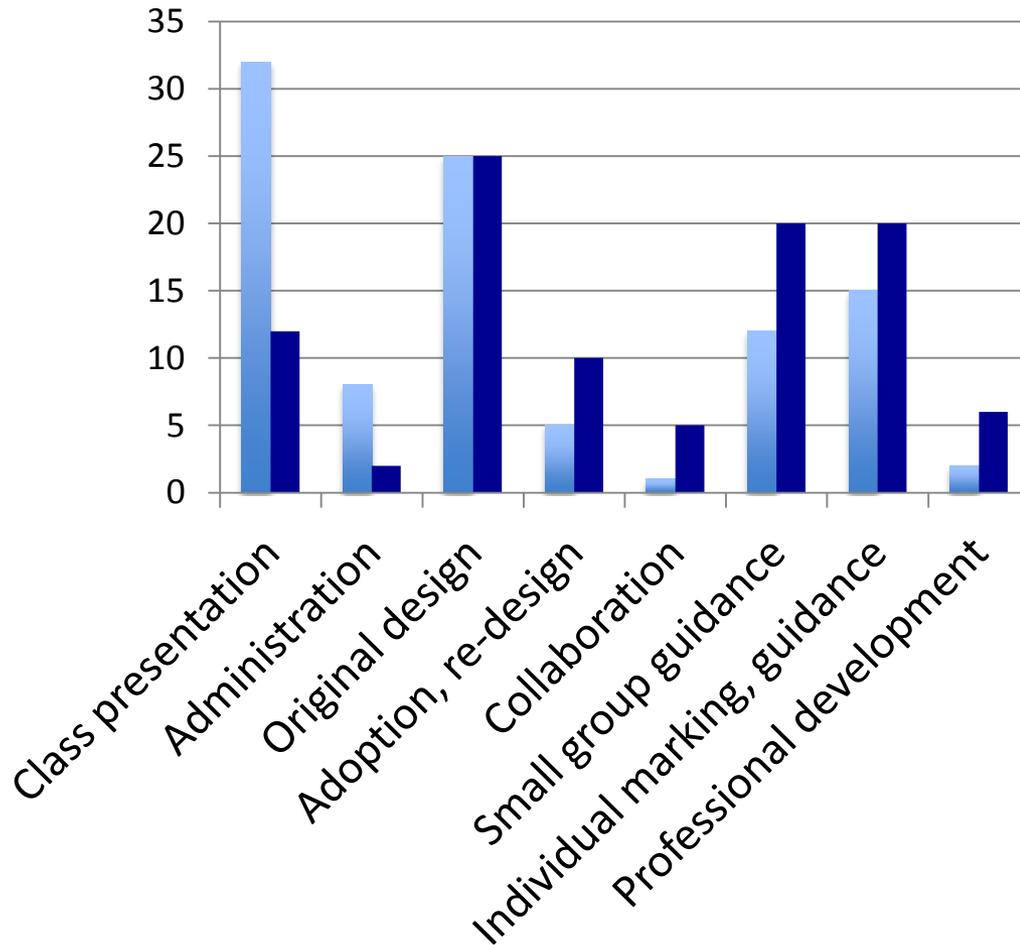


# Professionalising teaching

# A redistribution of teaching activity?

From	To more
Original design and preparation of all learning activities and resources	Collaboration on evidence-based development Specialist original innovative design Generalist re-design of activities and resources
Presentation	Tutor-based individual guidance Tutor-based group guidance
Summative assessment	Peer-based formative assessment Automated formative assessment
Administration	Professional development Teaching evaluation with learning analytics

# Imagining alternative distributions of teacher time

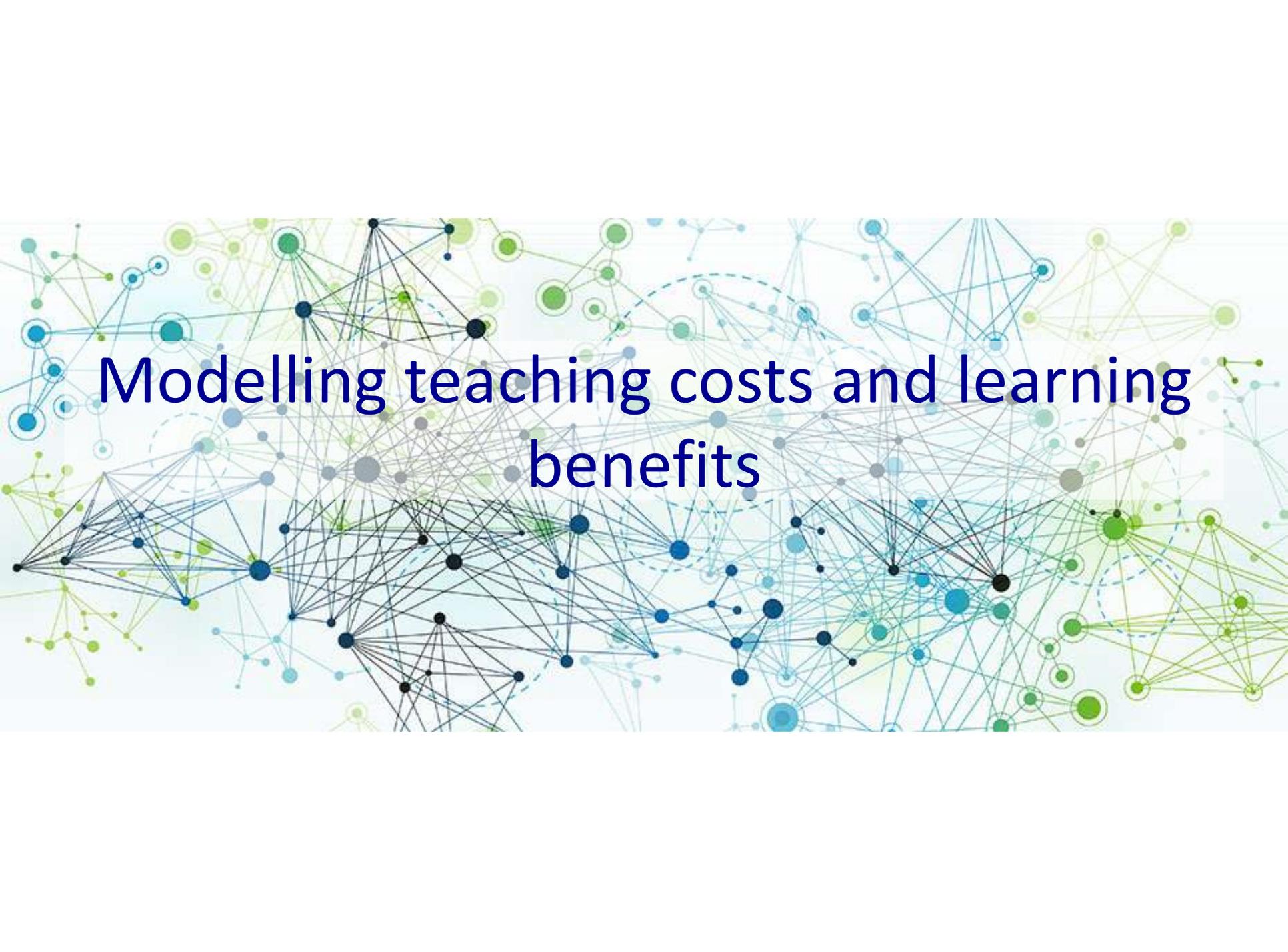


■ Conventional

■ Blended

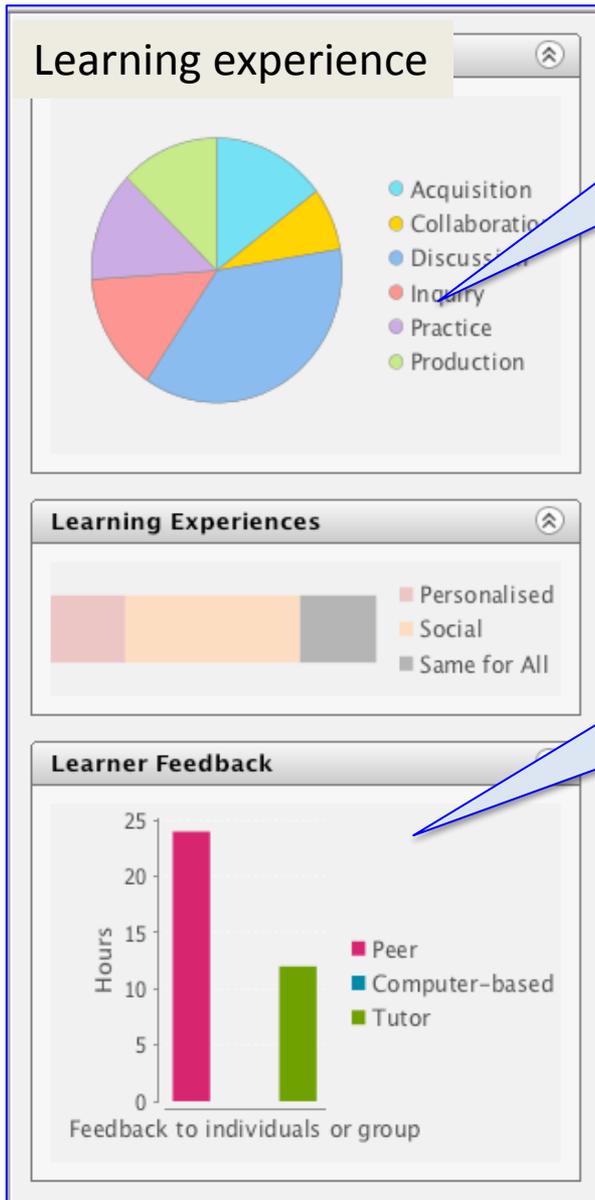
Conventional distribution is an average, with wide variations across individuals, departments and sectors

BL distribution will prioritise:  
specialist original design;  
generalist adoption;  
collaboration;  
more guidance;  
professional development



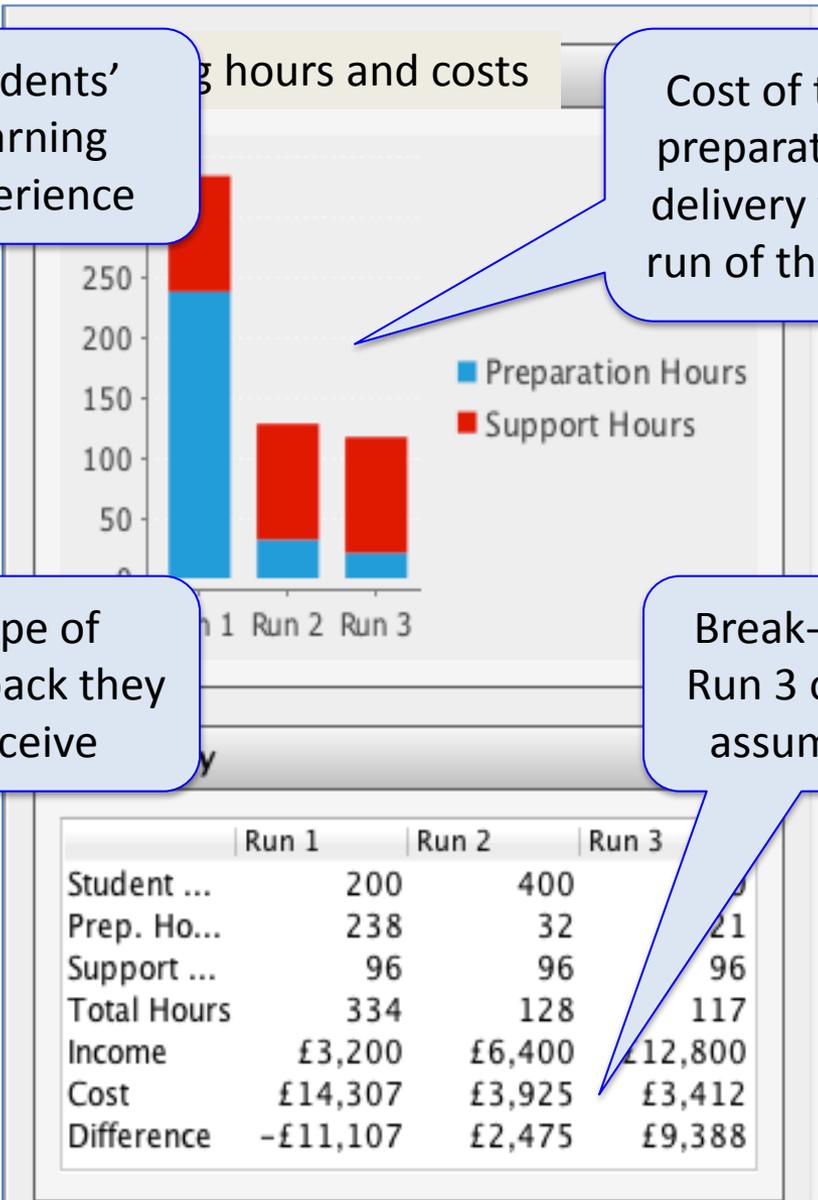
# Modelling teaching costs and learning benefits

# Modelling teaching costs and learning benefits



Students' learning experience

Type of feedback they receive



Cost of teacher preparation and delivery for each run of the course

Break-even by Run 3 on these assumptions

# Reusing or defining learning activities

TLA Creator Wizard

**Steps**

1. Create Teaching & Learning Activity
2. **Select Existing Activity**
3. Activity Details

**Select Existing Activity (2 of 3)**

Browse Existing Teaching & Learning Activities

**Student Interaction**

- Tutor Present
- Online
- Location-Specific
- Time-Specific

**Student Feedback**

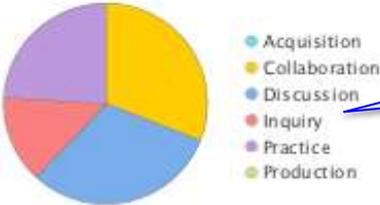
- Tutor
- Peer
- Computer-based
- None

**Pre-defined Activities**

- Digital simulation**
- Exploring interactive resource
- Game
- Quiz

**Your Activities**

Social (size: 10), Online, Computer-based feedback



Pie chart shows proportion of learning types in the selected activity

< Back   Next >   Finish   Cancel

# Estimating teacher time for runs 1, 2 and 3

1. Create Teaching & Learning Activity
2. Select Existing Activity
3. Activity Details

Teaching & Learning Activity Name

Learner' Total Hours  
 No. of Weeks:  of  hours

Teaching Preparation Hours

	Hours per Week	Non-Weekly Hours	Higher Cost Staff	Lower Cost Staff
Run 1:	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="100%"/>	<input type="text" value="0%"/>
Run 2:	<input type="text" value="0"/>	<input type="text" value="3"/>	<input type="text" value="100%"/>	<input type="text" value="0%"/>
Run 3:	<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text" value="100%"/>	<input type="text" value="0%"/>

Teacher support hours per group/student

	Hours per Week	Non-Weekly Hours	Higher Cost Staff	Lower Cost Staff
Run 1:	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="100%"/>	<input type="text" value="0%"/>
Run 2:	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="100%"/>	<input type="text" value="0%"/>
Run 3:	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="100%"/>	<input type="text" value="0%"/>

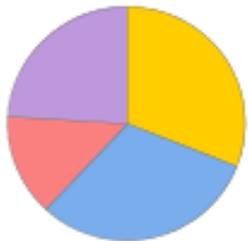
Computer-based feedback

How many student learning hours per week?

How many teacher hours to prepare?

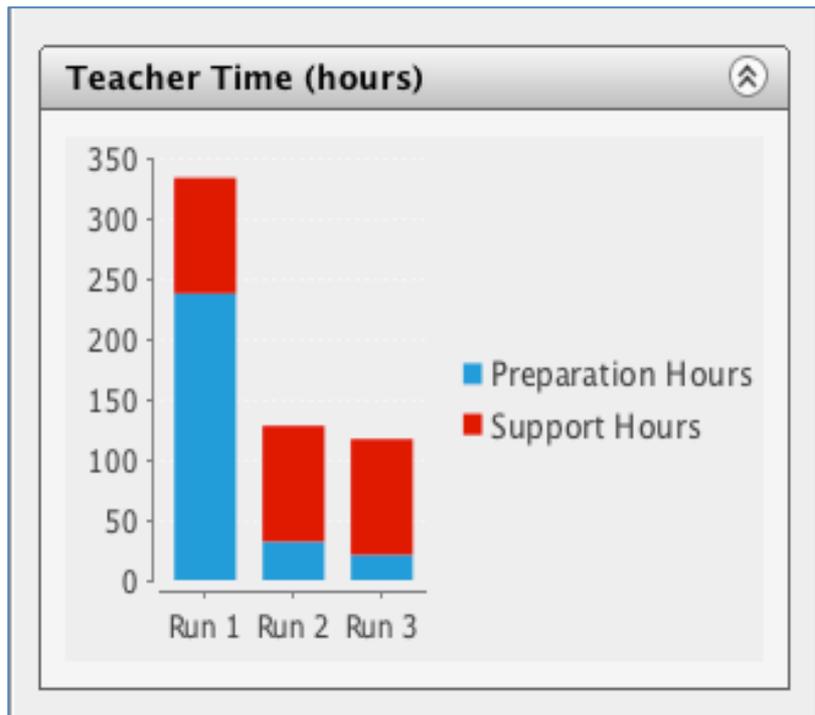
Does it all have to be done by the higher cost staff?

How many teacher hours to support each student/group/class?



- Acquisition
- Collaboration
- Discussion
- 
-

# Modelling teaching costs and learning benefits



To achieve the learning benefits, it is likely that Blended Learning will change:

- the distribution of teaching activities
- the pattern of the teaching workload

It is essential that this is well understood and planned for by

- Academic staff
- Heads of department
- The finance department
- The senior managers

# The financial value of MOOCs

## Business model

Cost \$30,000

Income \$1,000

(from \$49 – Coursera cut – ULIP cut)

Additional students? 3 @ \$12000 pa

- marginal profit? – No-one knows

Marketing? No-one knows anything

Cui bono? Highly qualified professionals being educated for free



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## *Thinking about Blended Learning Summary*

- ✧ The drivers and enablers of innovation for blended learning - *Need to be updated*
- ✧ Building the academic community's knowledge of blended learning - *Model the process for scientific knowledge*
- ✧ The MOOC as professional development - *A good solution*
- ✧ Professionalising teaching - *Essential for our future*
- ✧ Modelling the teaching costs and learning benefits for blended learning - *Essential for academics and institutions*