Available online http://octel.alt.ac.uk/course-materials/

ALT: open course on TEL

What are the BIG QUESTIONS in TEL?

Diana Laurillard

London Knowledge Lab

Institute of Education

Participants' big questions

Pedagogic

- How to plan flipped classroom class teaching via open distance learning with participants from multiple and widely ranging time zones?

- How can I use TEL to engage and support students across a large, lecture-only course?

- What TEL is appropriate to achieve the desired outcomes in the learning and teaching environment?

- How can TEL support personalised learning in a way that works for both teachers and students?

- Where should the balance lie between learner guidance and learner freedom?

- How do we evaluate the technology-enhanced learning impact on the learning experience and outcomes of individual students?

Strategic

- How do we persuade 'reluctant' members of staff to engage with TEL – especially those with limited skills/confidence/time?

Candidate big questions

- **Cultural:** How do we create a culture in which TEL can be effectively used by all staff and learners to improve learning?

- **Management:** Can teachers become a collaborative professional community with responsibility for directing innovation in TEL?

- **Economic:** Which TEL pedagogies will help solve the 1:25 staff-student ratio problem in educating the world?

- **Strategic:** How can we get adequate investment in TEL innovation by teachers themselves?

- **Creative:** Will the new 'computing' curriculum use TEL to build the 'computational thinking' AND the 'digital literacies' all students need?

- **Technical:** What are the emergent technologies that schools, colleges and HE should be working to introduce over the next few years?

The global demand for HE

By 2025, the global demand for higher education will double to ~200m per year, mostly from emerging economies (NAFSA 2010)

UK universities offer TNE, including online distance learning for 75/100k students – 5.3% of undergraduate population (BIS 2011, UUK 2012)

The new UNESCO goals for education:

- Every child completes a full 9 years of free basic education …

- Post-basic education expanded to meet needs for knowledge and skills … (Draft for UNESCO post 2015 goals)

- Implying significant teacher training needs for HE

1:25 staff:students??

Forms of TEL/online and teacher time

MOOC vs standard online course

- Guided TEL resources (model)

- Access to expositions – lectures (videos)

- Automated grading – MCQs, models

- Readings (pdfs)

- Guided collaboration activities (wiki)

- Peer group discussion forums

- Peer grading against criteria

- Tutored discussion forums

- Tutor feedback (e-portfolio)

Preparation time (fixed costs)
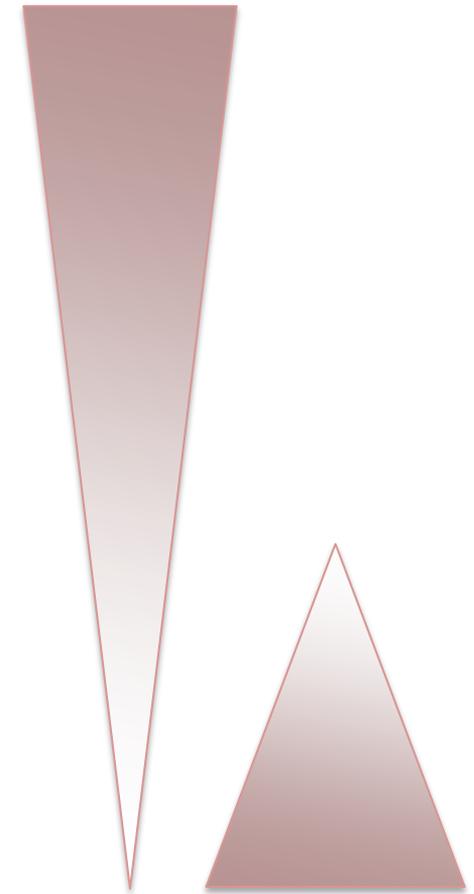
Support time (variable costs)

Comparing teacher hours for a basic MOOC and a guided MOOC (48 hour course)

Total teacher time

Development time = 420 hrs

Support time	50	500	5000
Duke MOOC	20 hrs	200 hrs	2000 hrs
Basic MOOC	0.00	0.00	0.00
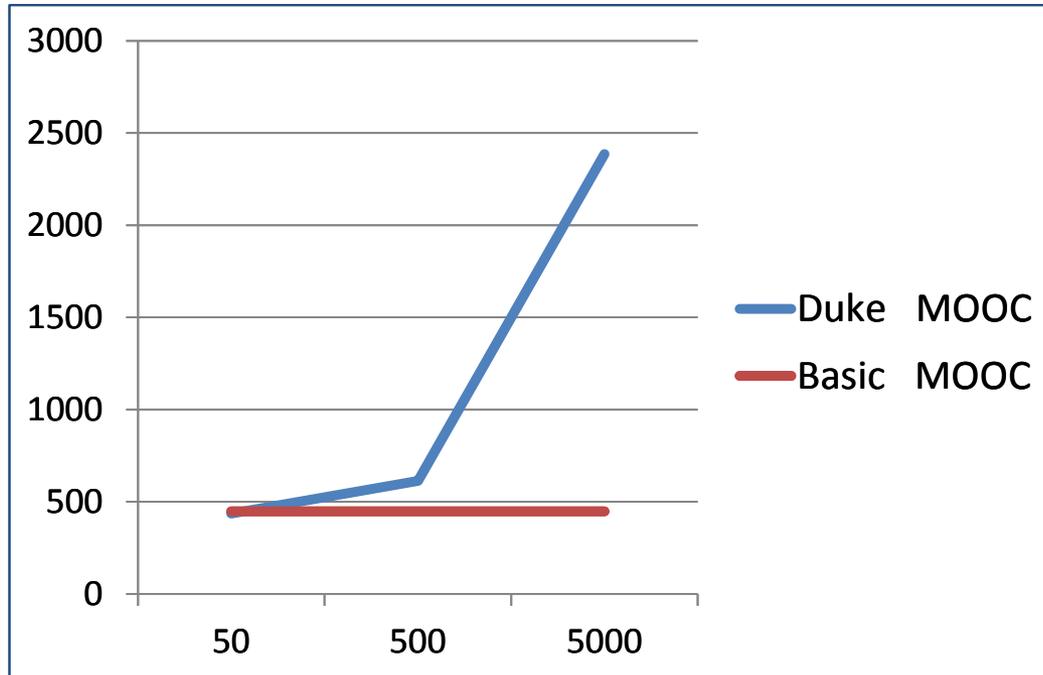
Teacher support time rises to 2000 hours for 5000 students.

2000 hours = 1 year of a tutor for a 5 credit course.

= 24 FT tutors for 120 credit course.

Modelling the benefits and costs

- We need to understand the pedagogical benefits and teacher time costs of online HE

- What are the new digital pedagogies that will address the 1:25 student support conundrum?

- How do we innovate, test, and build the evidence for what works at scale online?

Tools for teachers as learning designers

Pedagogical Pattern Collector

Welcome

The Pedagogical Patterns Collector suite of tools enables teachers to share their good teaching ideas. It is intended to help a subject teacher see how a particular pedagogic approach can be migrated successfully across different topics. There are sample patterns to browse and edit, or you can design your own from scratch. This is an output from the TLRP-TEL research project on a learning design support environment for teachers and lecturers, funded by the ESRC-EPSRC .

'PPC Browser'

offers a collection of generic pedagogical patterns, and their associated instances, which you can redesign for your own teaching practice.

click here for **Browser**

'PPC Designer'

presents the pedagogical pattern template to help you describe your own teaching idea for a session (e.g. student preparation, class activities and homework).
'PPC Abstractor' is a tool that helps you abstract your teaching ideas, expressed with PPC Designer, into a generic, more reusable form.

click here for **Designer**

Tools for teachers as designers - PPC

PPC Browser [home icon] | PPC navigation **Adapt this pattern >**

Learning Outcome - Students will be able to: **Evaluate differing interpretations of an event, artefact or**

Context (e.g. historical monument, building)   Altar of Pergamon

Interpretations (e.g. Classical Historian, Archaeologist etc.)   an archaeologist, a classicist, and a modern historian

Key aspects (e.g. origin, purpose, meaning etc.)   origin, purpose, meaning, references

PPC Inbuilt Collection of Patterns:

- Effects of System Input on Outputs
- Evaluate Multiple Interpretations
- Predict Observe Explain
- Guess my X - Process-Object relationship
- Teach to Learn

V More options to narrow your search

TLA 1 – Briefing
- Read/view the text/presentation illustrating the importance of interpret... - 10 minutes)

TLA 2 – Exploring to compare multiple interpretations of the context
- On your own explore multiple perspectives from an archaeologist, a cla... origin, purpose, meaning, references of the Altar of Pergamon, and not... (Investigate - 25 minutes)
- On your own work through the exercise to test your understanding of the different perspectives on origin, purpose, meaning, references of the Altar of Pergamon, where the feedback will refer you back to the different interpretations (Practice - 10 minutes)
- On your own, produce an outline of the critical differences between the interpretations (Collaborate - 10 minutes)

TLA 3 – Collaborating to reflect on the comparisons in terms of the key aspects
- In pairs, discuss your outlines and agree a joint outline of the critical differences between the interpretations (Collaborate - 10 minutes)
- Discuss with the whole group the ways to appreciate multiple interpretations, making use of your notes from previous activity (Discuss - 25 minutes)

A library of patterns to inspect

Refine by Learning Outcome categories:
- ◯ Knowledge ◯ Comprehension **Reset**
- ◯ Application ◯ Analysis ◯ Evaluation

Refine by keyword/keyphrase:

Show user generated patterns

Examples of this Pattern (click to view)

Altar of Pergamum   Graduate Center   Child Behaviou
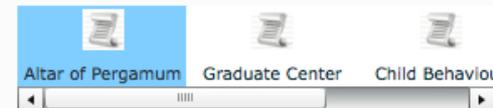
This instance is described and implemented @ Altar of Pergamon (click here to open in new window)

Generic

Teacher adopts and adapts a design

Teacher adopts and adapts a design

Adopt – Adapt – Import resources - Test and re-design – Share what works

Export to Moodle for Ed students
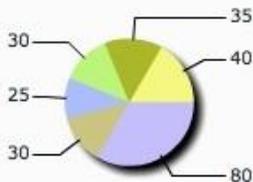
Study the resource attached illustrating the issues you need to consider in deciding on your inputs to the learning design tool to achieve a well-balanced learning design.

📄 Developing a well-balanced learning design

Make notes on they key points to be aware of in assessing the optimal inputs to the learning design tool to achieve a well-balanced design.

Study the resource attached that describes the current performance of the learning design tool.

📄 Improving a learning design

Add to your notes any points that you had not covered, arising from studying the resource.

Go to the Peadgogical Patterns Collector

http://tinyurl.com/ppcollector3

In the Browser, select the 'Understanding Authentic Practice' pattern, choose the Classroom Teaching version, and click on the Adapt button.

Make your edits to the learning design and record your results, in terms of which is closer to achieving a well-balanced design.

Repeat the process until you find what seems to be an optimal design

Now work with a partner to see if you can improve your result.

Ask another student to work with you and arrange when you will collaborate

Re-design for Med students in PPC

Study the resource
ideal blood pressu

Study the resource attached illustrating the issues you need to consider in deciding on your inputs to the learning design tool to achieve a well-balanced learning design.

Achieving th

Ma

Stu

Developing a well-balanced learning design

The process of professional collaboration:
Collecting learning analytics evidence on what works
Creating a culture for improving TEL
Teachers responsible for developing TEL pedagogies
Solving the 1:25 staff-student ratio problem?

Ad

Go

htt

Select the Blood

Make your inputs

Make your edits to the learning design and record your results, in terms of which is closer to achieving a well-balanced design.

Repeat the proces

Repeat the process until you find what seems to be an optimal design

Now work with a p

Now work with a partner to see if you can improve your result.

Ask another stude

Ask another student to work with you and arrange when you will collaborate

Compare your result with your partner – which is closer to achieving a well-balanced design?

Modelling the pedagogic benefits

A computational representation can analyse how much of each activity has been designed in

Conventional

■	Acquisition
■	Inquiry
■	Discussion
■	Practice
■	Production
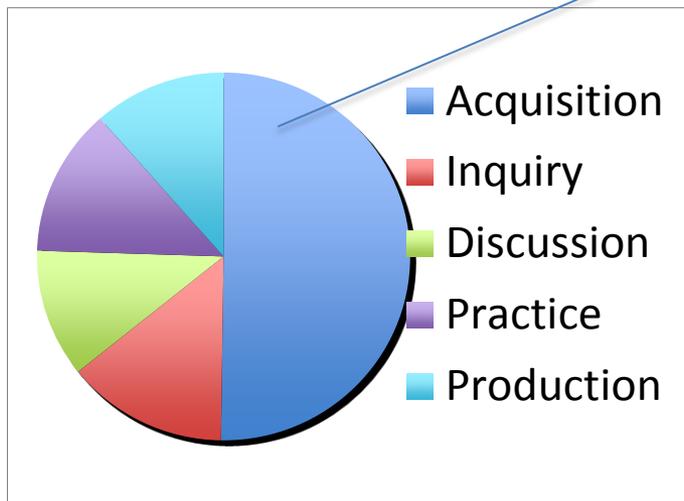
Categorised learning activities

Blended

■	Acquisition
■	Inquiry
■	Discussion
■	Practice
■	Production
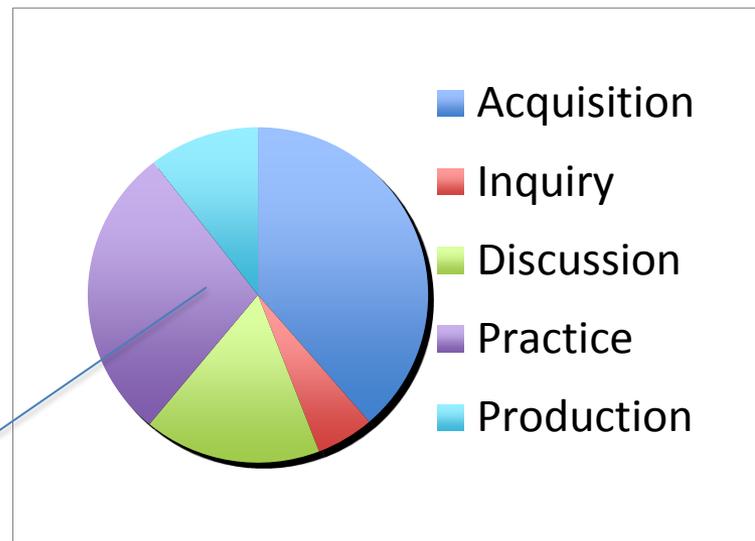
Analysis shows more active learning

Modelling the costs for increasing student cohort size
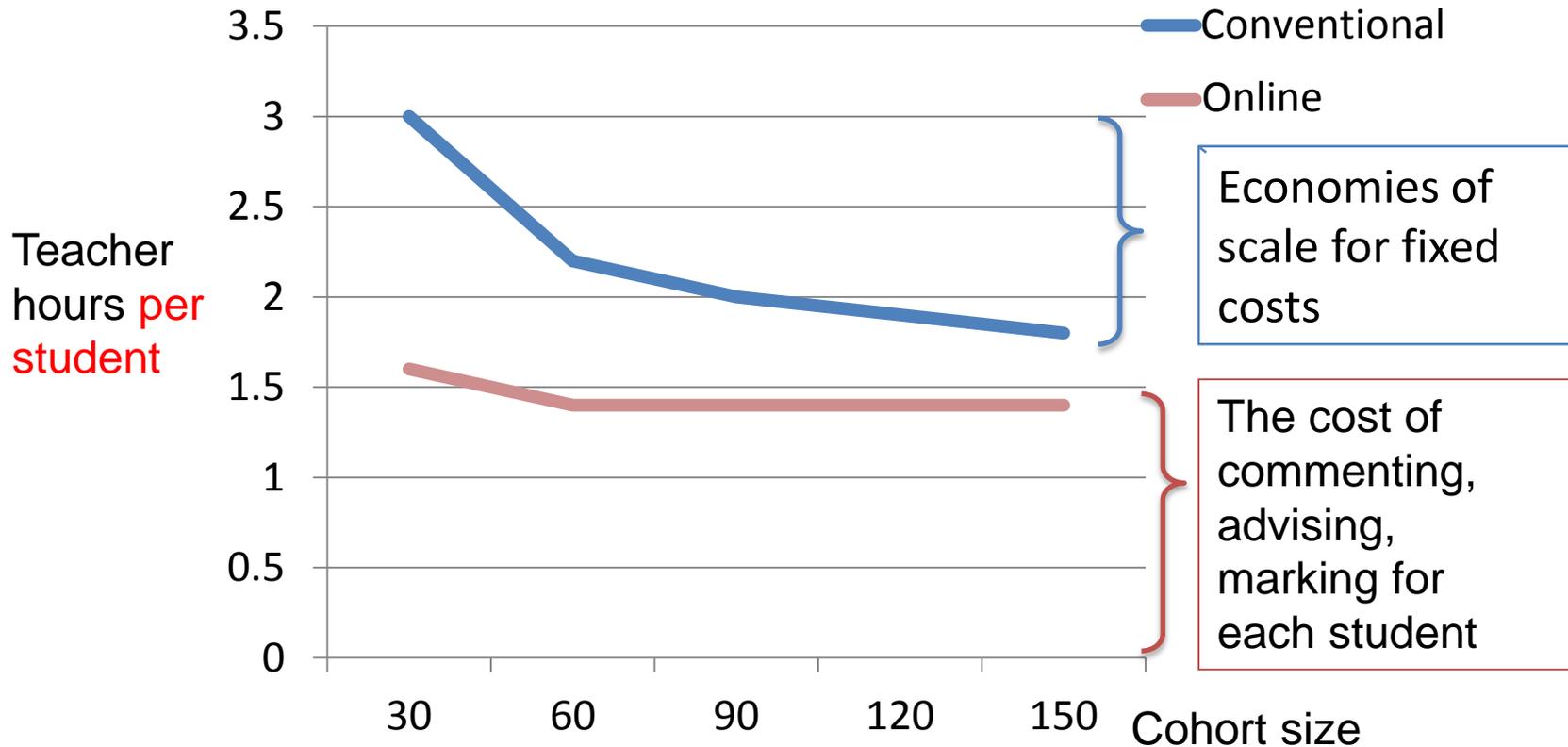
Scaling up will *never improve*
the per-student support costs…
unless we invent some new pedagogies

Teaching as a design science: Tools for professionals teaching MOOCs

The global demand for HE requires investment in pedagogic innovation for MOOCs to deliver

TEL-based pedagogic innovation must support students at a better than 1:25 staff-student ratio

Teachers need the tools to design, test, gather the evidence of what works, model benefits and costs

Teachers are the engine of innovation – designing, testing, sharing their best pedagogic ideas

Candidate big questions

- **Cultural:** How do we create a culture in which TEL can be effectively used by all staff and learners to improve learning?

- **Management:** Can teachers become a collaborative professional community with responsibility for directing innovation in TEL?

- **Economic:** Which TEL pedagogies will help solve the 1:25 staff-student ratio problem in educating the world?

- **Strategic:** How can we get adequate investment in TEL innovation by teachers themselves?

- **Creative:** Will the new 'computing' curriculum use TEL to build the 'computational thinking' AND the 'digital literacies' all students need?

- **Technical:** What are the emergent technologies that schools, colleges and HE should be working to introduce over the next few years?

NMC Horizon Project Short List: 2013 K-12

Time-to-Adoption Horizon: One Year or Less

- Bring Your Own Device
- Cloud Computing
- Mobile Learning
- Online Learning

Time-to-Adoption Horizon: Two to Three Years

- Electronic Publishing
- Learning Analytics
- Open Content
- Personalized Learning

Time-to-Adoption Horizon: Four to Five Years

- 3D Printing
- Augmented Reality
- Virtual and Remote Laboratories
- Wearable Technology

http://www.nmc.org/horizon-project

Participants' big questions

Pedagogic

- How to plan flipped classroom class teaching via open distance learning with participants from multiple and widely ranging time zones?

- How can I use TEL to engage and support students across a large, lecture-only course?

- What TEL is appropriate to achieve the desired outcomes in the learning and teaching environment?

- How can TEL support personalised learning in a way that works for both teachers and students?

- Where should the balance lie between learner guidance and learner freedom?

- How do we evaluate the technology-enhanced learning impact on the learning experience and outcomes of individual students?

Strategic

- How do we persuade 'reluctant' members of staff to engage with TEL – especially those with limited skills/confidence/time?