# Digital technology and Higher Education: delivering benefits for student education

### Neil Morris

Director of Digital Learning Professor of Educational Technology, Innovation and Change, School of Education

University of Leeds

Email: n.p.morris@leeds.ac.uk Twitter: @neilmorrisleeds, @unileedsonline

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### Overview





#### A need for change

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### Learning and Teaching

### "Tell me and I forget, teach me and I may remember, involve me and I learn."

**Benjamin Franklin** 

#### Learning and Teaching





Edgar Dale's Cone of Learning; CC-SA

#### Learning is changing





### The future of digital learning

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## Mobile learning in a blended learning setting









### Deep learning

### Multimodal learning

### Collaboration

### Engagement

Morris et al., 2012; Morris et al., submitted

### Provision of mobile technology



- An increasing number of secondary schools are providing students with access to laptops/tablet devices
- Some universities provide students with smartphones and tablet devices
- Mobile technology deployment:
  - i. Bring Your Own Device (BYOD);
  - ii. Module/Programme/School/Faculty deployment (loan/permanent);
  - iii. Institutional deployment (out of the box / pre-configured).





### University of Leeds students' use of mobile devices

97% own a laptop.

86% own a smartphone

20% own a tablet device

35% are planning to purchase a tablet device for academic and social reasons

N=1363 (Nov 2012; Middleton and Caperon, 2013)

50% use a mobile device frequently for research or assignments

23% use a mobile device

frequently to read e-books

70% likely to use a mobile

device to read articles or books online

87% use a mobile device frequently to use a search engine

### University strategies for Digital Learning



### Digital strategy for Student Education

### **Blended Learning Strategy**

Policy on Audio and Video Recordings for Educational Purposes

MOOC vision and strategy

Open Educational Resources policy

### **Digital strategy**



### Strategic alignment

- Distinctive experience
- Standardised processes
- Increased quality and efficiency
- Integrated systems
- Seamless access to content

### **Principles**

- Support Education strategies
- User focussed
- Offer consistent experience
- Use common data set
- Available on all major platforms

### Blended learning strategy

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# Staff perceptions of lecture capture



49% of respondents had between

**1-6 years experience** of lecture capture.

56% of participants believed that

lecture capture had a high or very high impact on student learning

Participants from **medicine and health** were most likely to believe lecture capture had a high impact on student learning

#### Main concerns:

#### Student experience:

- evidence of pedagogic value of lecture capture;
- benefits of video capture versus audio and slide capture;
- impact of recording on student interaction in lectures;
- Impact on attendance.

Copyright Data quality Workload Student recording Guest lecturers

(n=226 academic staff surveyed in June 2013; Morris et al., In Preparation)

# Multimedia resource production





- Ubiquitous capture
- Seamless and automated capture
- Controlled publication
- Widespread delivery
- Multimodal playback





### Capturing video for education





# Attendance is not affected by lecture capture









### Digital learning channel portfolio



#### Futurelearn





### MOOC Provider Futurelearn Rockets Past One Million Learner Milestone

UK-Based FutureLearn Becomes a Top-Five MOOC Provider in a Little Over a Year

### Pedagogy of Futurelearn



Based on Laurillard's Conversational Framework:

"a continuing iterative dialogue between teacher and student, which reveals the participants' conceptions and the variations between them... There is no escape from the need for dialogue, no room for mere telling, nor for practice without description, nor for experimentation without reflection, nor for student action without feedback". (Laurillard, 2002)





#### Water-cooler discussion

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Ferguson, R., & Sharples, M. (2014). Innovative Pedagogy at Massive Scale: Teaching and Learning in MOOCs. In *Open Learning and Teaching in Educational Communities* (pp. 98-111). Springer International Publishing.

# Discussion promotes social learning



4	Discussion Board						
F	Forums are made up of individual discussion threads that can be organised around a particular subject. Create Forums to organise discussions. More Help						
Create Forum						3	Search 14
	P	Delete					
<	. (	Eorum		Description	Total Posts	Unread Posts	Total Participants
	1 (	Question: the modu	about e 🐸	Use this forum to ask questions about the administration of the module e.g. exams etc. Remember to look in the module outline before posting questions. Students are encouraged to use this forum to post questions and answer other students' questions.	51	2	20
	1 0	Scientific guestions	*	use this forum to ask scientific questions about the module. Students are strongly encouraged to post questions/comments to this forum. Students can post anonymously and can rate posts. Students are also able to subscribe to the forum so you can receive email alerts when it is updated.	95	3	23
	4	Delete					

"The greater the percentage of the course grade that was based on discussion, the more satisfied the students were, the more they thought they learned from the course, and the more interaction they thought they had with the instructor and with their peers."

Shea, P., Fredericksen, E., Pickett, A., Pelz, W., and Swan, K. Measures of learning effectiveness in the SUNY Learning Network. In Online Education: Proceedings of the 2000 Sloan Summer Workshop on Asynchronous Learning Networks. Volume 2 in the Sloan-C series, J. Bourne and J. Moore, Editors, Needham, MA: Sloan-C Press, 2001.

### Our MOOC pedagogy

	Social constructivist	Participatory	Active learning	
	Research- based	Teacher- and participant- focused	Digital literacy support	Entre 1
			1 11	
	Multi-format content	Accessible content	Social	18. 9
The second second		A CONTRACTOR OF THE OWNER		



### Futurelearn MOOC portfolio













### Key elements of MOOCs



#### Key elements of MOOCs

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#### Your assignment

Type your assignment here

Please check your assignment carefully before submission as it cannot be edited afterwards.

# Interactivity and sharing in MOOCs

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### Contribute to a repository of hinge-point questions

As Dylan has explained, hinge-point questions can be reusable between teachers in a way that lesson plans, tasks, and activities are often not.

This re-usability means that while writing effective hinge-point questions takes time and practice, there are great opportunities for STEM teachers to share the questions they have developed and collaborate to further improve them.

In this step we encourage you to share in the comments section hingepoint questions you have written, as well to reflect upon how your participation in this course and your use of the questions has helped you to further develop them.

You may find that one or both of the questions you wrote to be peerreviewed during Week 3 would make a good starting-point.

#### The Science Learning Network hinge-point question area

We hope very much that participants in this course will also contribute to the Science Learning Network's newly established hinge-point question area.

100

Inde Course

#### Your exhibition

Having watched Mary create her exhibition now it's your turn to curate your own exhibition of heroism in paintings.

Your task is to choose a selection of paintings of war heroes or heroines that you find particularly inspiring.

You may choose to do this by adding the images to your course pin-board or log. We have provided a number of sources in the See also section below; you will find plenty of paintings to choose from.

Alternatively you can use the BBC Your Paintings website demonstrated in the previous step. We have provided a short animated video above to show you how to do this. You will need to register with the BBC to do this but there is no charge.

The educators will also be completing this challenge over the weekend and will share their exhibitions with you at the beginning of next week. They will also explain why they chose the paintings they have included.

You will have the opportunity to share your exhibition next week, so take your time over the weekend to explore the resources. Please use the comments option if you have any questions about this task.

We hope you enjoy having a look at the wide range of paintings of war heroism that are available online.

23	1 am 1	raving real difficulty getting this sorted. I am a bit of a Luddite	, so will try again later.
	Like	Reply	٨
0	Liane	Degville	Follow 37 minutes
201	The o http:/	fficial reports of my 17 year old great uncle's death at Messine //static.awm.gov.au/images/collection/pdf/RCDIG10647371-	pdf
	Like	Reply	▲
a,	Gerar	d Macklin	Follow 52 minutes
-	Here	are my thoughts	
	http:/	//bbc.in/1NNUZDt	
	Looki	ng forward to your thoughts.	
	Like	Reply	▲
	Penel	ope Bell	Follow 9 hours
	http://padlet.com/pbell3/slbcripm/me Here is my collection which looks largely at the ANZAC experience. I don't know whether it deals with the theme fully but I enjoyed putting it togethert.		
	Like 3	3	
	0	lan Kemp	Follow 3 hours
	Print 1	Nice work Penelope. The maori buildog is quite surreal!	
		Like	♪
		Gerard Macklin	Follow 50 minutes
	-	the second second second second	

#### 3.2 Prepare to share + 50 comments If you have created an artefact that you would like to share this is your opportunity. If sharing a text reflection you can just cut and paste it to the discussion. If sharing a video or image there are a number of options for you. We have created a Facebook event where those of you with Facebook accounts can post your video clips or images. You can find out more information about sharing images or video on the Social media tips and tools FAQ page If you decide to use Facebook to document your artefact please make sure you have considered your own Facebook privacy settings. If you don't have a Facebook account you can still join the event and review postings from other learners or use a site of your choice such as Instagram or Flickr. Take the time to reflect on the postings. In the next step you have the opportunity to view Jonathan's reflections and provide a full review of one or more of the postings.







### Try out online learning / Futurelearn Improve career Learn prospects new Supplement existing studies Interact with other people things Prepare for future studies Add a fresh perspective to work

\*Based on data from pre-course survey (n=1975)

### Value of MOOC elements



72% spend between 30 mins

and 2 hours online per visit.

37-53% satisfied with

discussion as a learning tool

90-97% satisfied with

video as a learning tool

86-92% satisfied with

**QUIZZES** as a learning tool

Post course survey data for first three MOOCs (n= When Worlds Collide: Fairness and Nature (n=241); Exploring Anatomy: the human abdomen (n=424); Introduction to Physical Actor Training (n=83).

#### Learner disengagement





### Introductions and motivations

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Download video: standard or HD

Feedb

View transcript (PDF)

+ 1966 comments

Ξ

#### Welcome to the course

This video introduces you to Dan Trowsdale, the lead educator for the course, and his colleagues who will support your learning during the next three weeks.

#### Introduce yourself

Having watched the video spend a few minutes introducing yourself and finding out more about your fellow learners; share your reasons for joining this course and your expectations for the journey ahead. Simply click on the comments option below and start typing.

We have taken the information from the pre-course survey to create a map that shows the countries represented by learners on this course (it does not represent the number of learners from each country). If your

R,	james idowu hi, i'm james and this is my first online learning course . Glad to be here	wollow	17 JAN
	Like • Reply		A
$^{\circ}$	Charles Ofuonye Fe I am Ofuonye Charles and I would like to know more about innovations not just in busin everyday life. I am very optimistic that this would be an eye opener.	o <mark>llow</mark> ess bu	15 JAN ut in
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<u>°</u>	kateryna semenova Fo Hi everyone, my name is Kateryna. I am an entrepreneur and I am interested in all busine innovations that can bring profit and broaden my outlook. I am amazed by the perfect g professors, looking forward to get as much as I can from their lectures!	ess roup (	05 JAN of
	Like • Reply		A
	GOMEZGANI PRECIOUS LONGWE Fe Hie everyone, I just graduated recently with an Honours degree in Business, I am so obs innovation, hence explains my intentions to broaden my knowledge in Innovation topics looking forward to this	essed I am	10 DEC with
	Like • Reply		⚠

### Teacher led dialogic learning (Mercer)

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Instruct	Confirm	Discussion shot: is British et 152 comments democracy broken?
		In this video, Victoria and Stuart debate the evidence that British politics is broken. Among the key questions they discuss are:
		<ul> <li>Is the emergence of new political parties evidence of voter dissatisfaction or a sign that politics is alive and well?</li> </ul>
Challenge	Correct	<ul> <li>What does Russell Brand's message that people should 'break the system' tell us about political attitudes in 2015?</li> </ul>
		<ul> <li>Is the political system broken for everyone, or just certain sections of society?</li> </ul>
		• Why do the mainstream parties all sound the same?
Stimulate	Community	Join the discussion Do you think Stuart is right to argue that British democracy is broken? Do you agree with Victoria that we get the democracy we deserve? Once you've watched the video, join the debate.

# Peer to peer dialogic learning (Mercer)



Encouraging peer to peer dialogue can support engagement, motivation and learning, and can take a number of forms:

Opinions	Convergence of views	Evidence based reasoning
Problem	Co-	Shared
solving	construction	purpose

Mercer

### Types of discussion in MOOCS

-

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A

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Conversation between two individuals

# Educator and participant comments on MOOCS



### Participants who COMMENT do more steps

### Participants who COMMENT do better on tests

Elston, C. & Morris, N.P. (2015) Making MOOCs collaboratively: working effectively with stakeholders. eMOOC Summit, proceedings.

Morris et al., In Preparation (5 courses, analysis of 1<sup>st</sup> week of course only; P<0.01)

Enrolments	Total number of comments (average per learner)	Total number of educator comments (average per educator)
5,554	9,923 (6)	381 (381)
3,514 (rerun)	4,320 (6)	304 (304)
3,468	3,873 (6)	455 (455)
8,590	6,045 (5)	1142 (1142)
12,903	11,920 (5)	555 (278)
14,959	13,749 (6)	495 (165)
7,035	12,440 (9)	682 (134)

### Who are MOOC completers?



**Older** learners more likely to complete our courses

### **Better qualified**

learners more likely to complete our courses

### Experienced

online learners more likely to complete our courses

## Non working

learners more likely to complete our courses

No gender differences in completing learners, but there are course-level differences

## MOOCs for professional development, business growth and sustainability

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### France's unemployed are prescribed a Mooc

#### 14 MAY 2015 | BY CHRIS PARR





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### MOOCs on campus

MOOC content embedded into module and programmes

New MOOC style blended modules created

MOOC content used to create new distance learning programmes



# Towards a Flipped Learning vision





### The future of digital learning





#### **Email**: n.p.morris@leeds.ac.uk

**Twitter**: @neilmorrisleeds, @unileedsonline

**References**: http://education.leeds.ac.uk/acade mics/morris

News: http://www.scoop.it/t/moocs-by-neil-morris

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