

Proposing an expansion of FutureLearn metrics for the prediction of student engagement



Dr Michael Kilmister,
Learning Designer,
Online Learning Initiatives



Background: UON

- University of Newcastle, Australia
- Online Learning Initiatives
 - team of five
 - translating undergraduate courses in humanities to FutureLearn



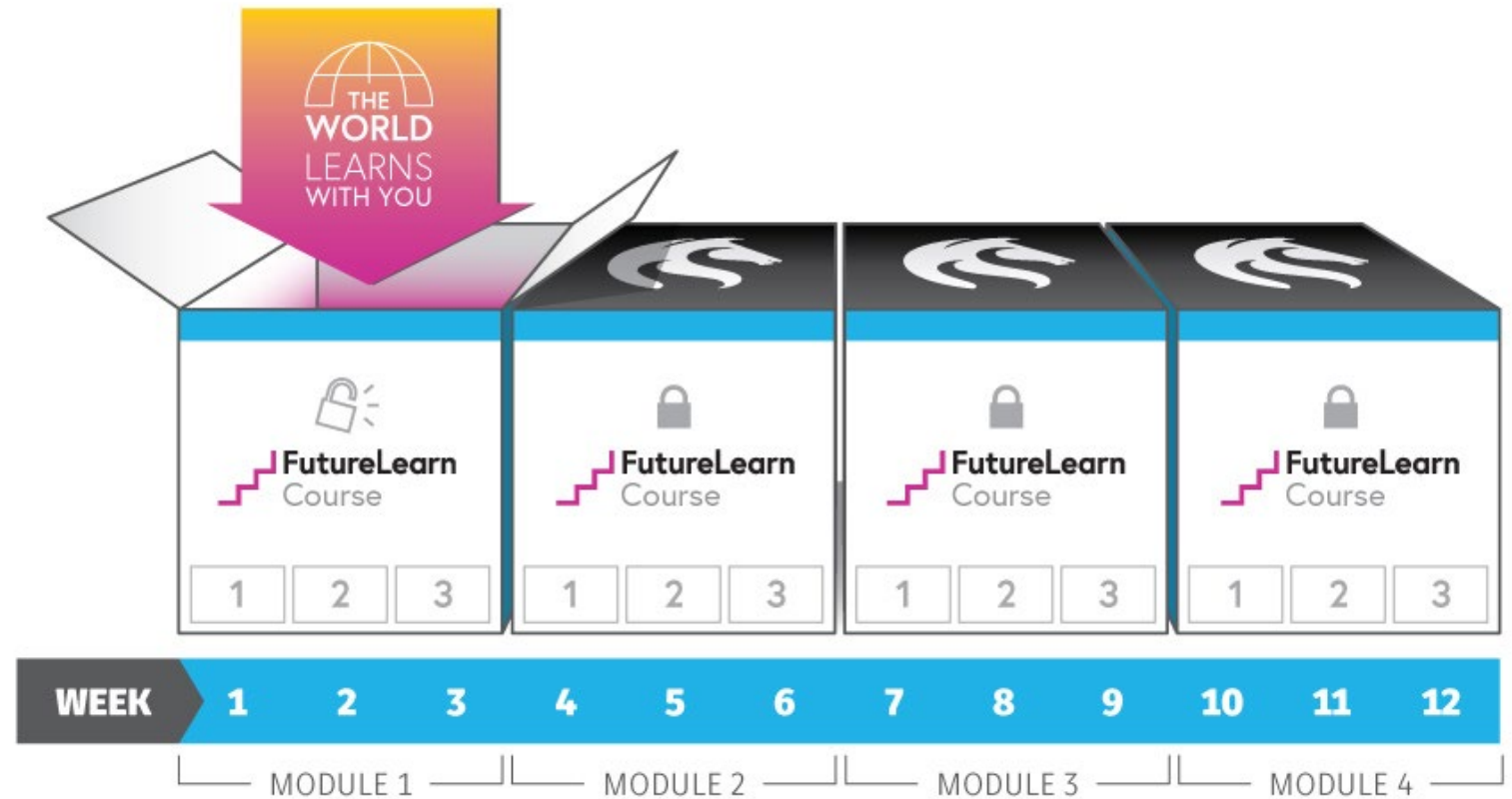
Newcastle city light rail station with the UON 'NewSpace' building in the background © MDRX, Wikimedia Commons

Background: UON's Bachelor of Arts Online

- A strategic initiative of the Deputy Vice Chancellor Academic
- Offers a complete BA degree over three years through FutureLearn
- Four majors offered, with three 'core courses'
- Comprises open and closed courses
- Thirty four programs total
- *Nine programs so far launched in 2019*

UON program with an open module

BA ONLINE HOW YOUR COURSE IS ASSEMBLED



Background: Initial research aims

- Evaluate the video content in six undergraduate courses in the BA Online
- Uncover any differences/similarities in viewing patterns between humanities and STEMM courses
- Revise UON's existing video production guidelines
- Disseminate research findings to wider audience

Background: Research team

- Collaboration between:
 - Blended and Online Learning Design (BOLD Lab); and
 - Online Learning Initiatives
- Current team members:
 - Paul McDonald (Instructional Media Producer)
 - Andrew Yardy (Senior Learning Designer)
 - Dr Clare Lloyd (Academic Director, OLI)

THE BOLD LAB

Online Learning Initiatives





[View transcript](#)

Download video: [standard](#) or [HD](#)



[View transcript](#)

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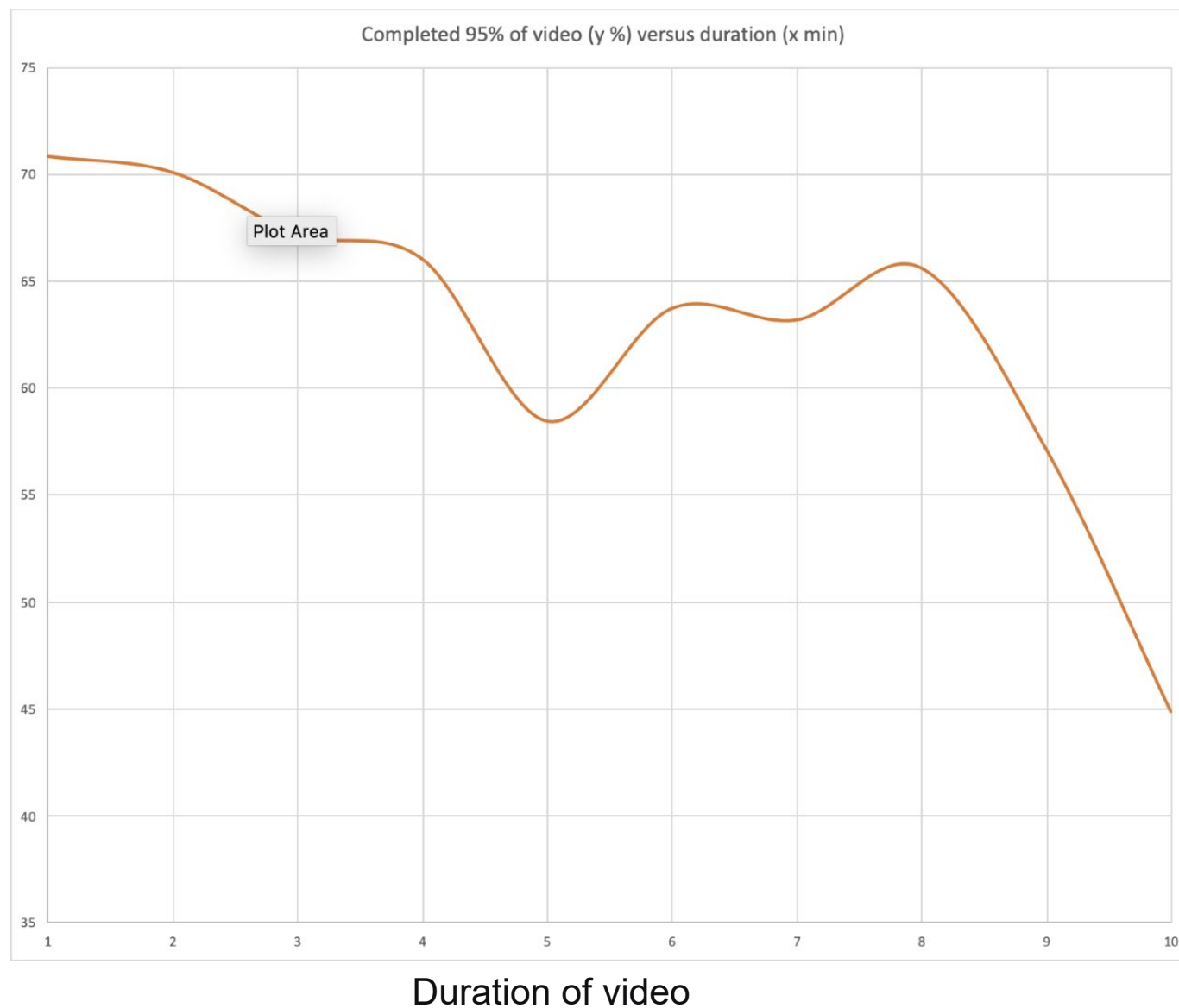


Download video: [standard](#) or [HD](#)

- (left) – *Film and Television Studies* (program)
- (upper-left, right) – *What is Poetry?* (course)

Current data

Percentage of students
viewing 95% of video

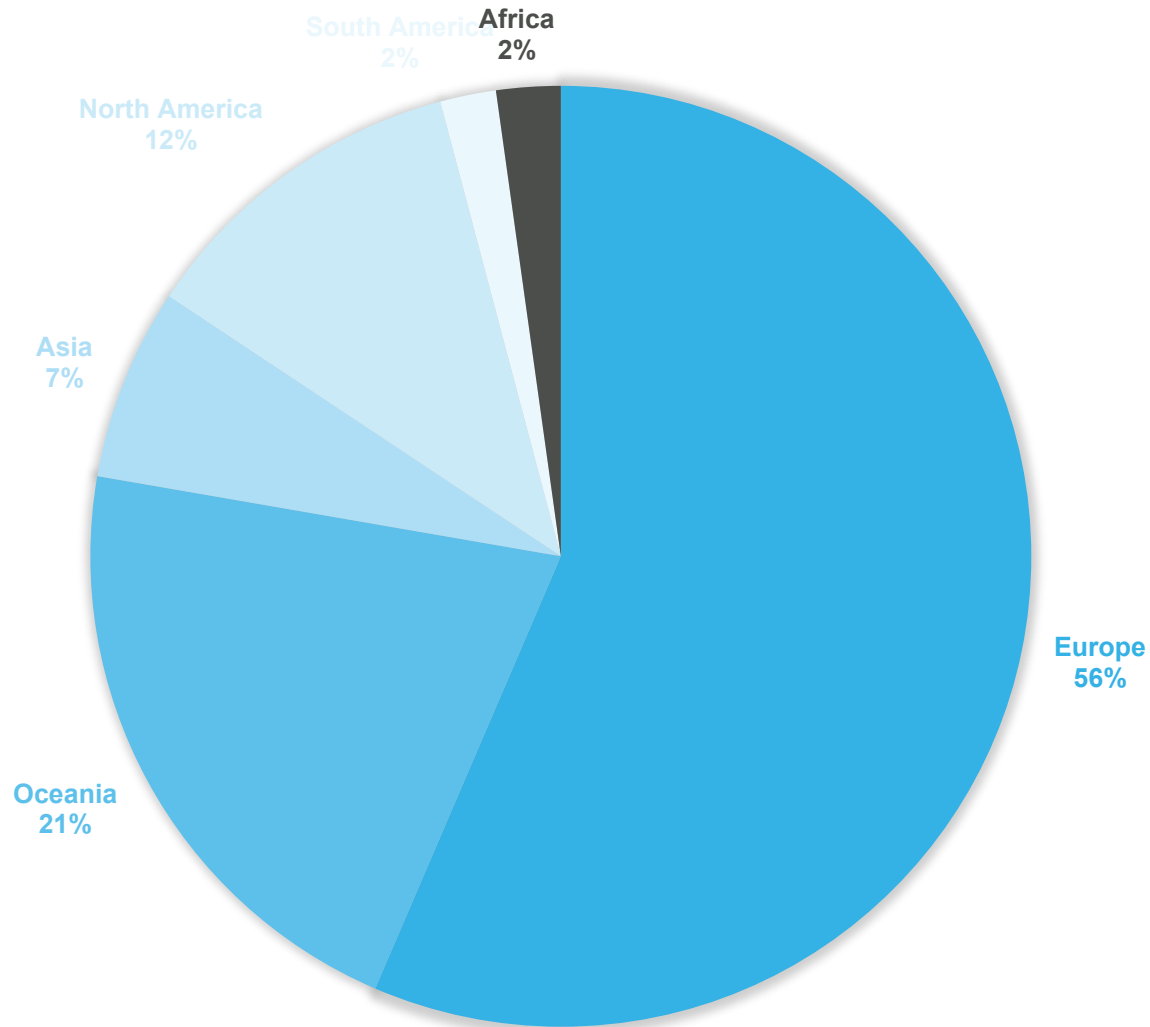


Current data

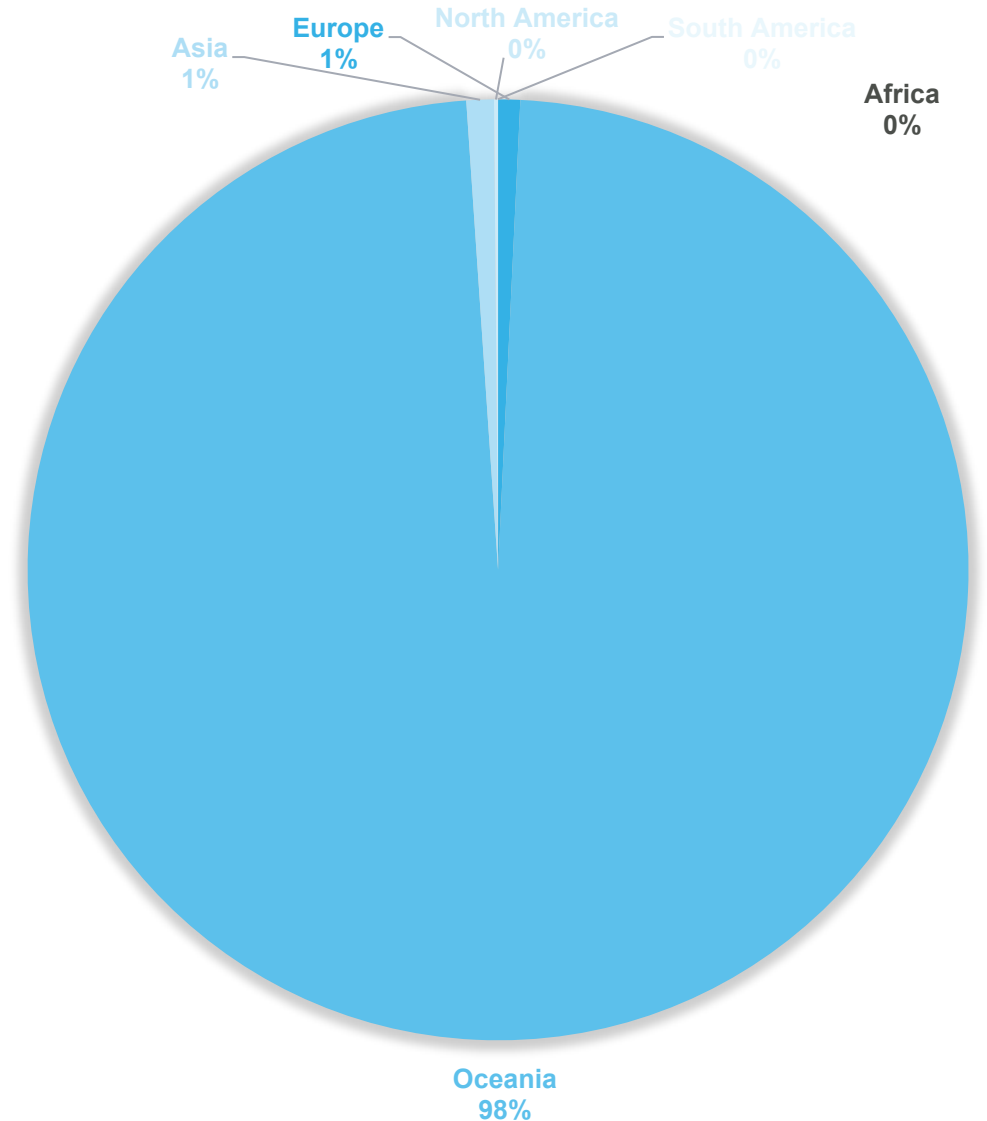
Video Number	Duration (secs)	Total Views	Total Downloads	Total Transcript Views	Viewed 5%	Viewed 10%	Viewed 25%	Viewed 50%	Viewed 75%	Viewed 90%	Viewed 100%
1	90	681	30	166	85	85	83	85	77	74	70
2	130	481	35	191	100	100	100	50	50	50	50
3	130	640	28	163	97	95	93	89	87	87	83
4	432	761	38	240	80	77	72	69	68	67	65
5	90	379	6	80	88	88	85	84	83	82	78

Utilisation of the current data

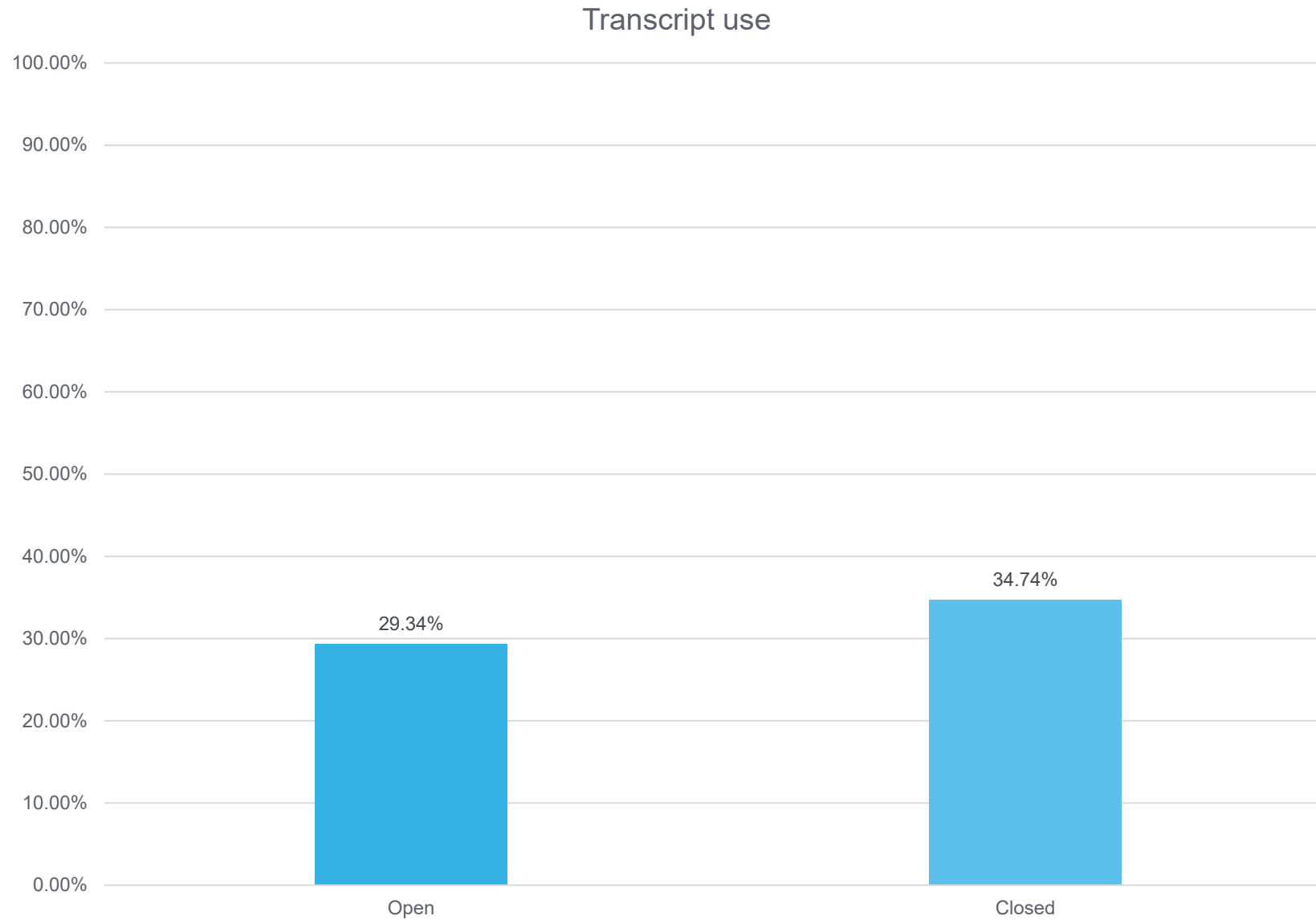
CONTINENT OF STUDENT – OPEN COURSE



CONTINENT OF STUDENT – CLOSED COURSE

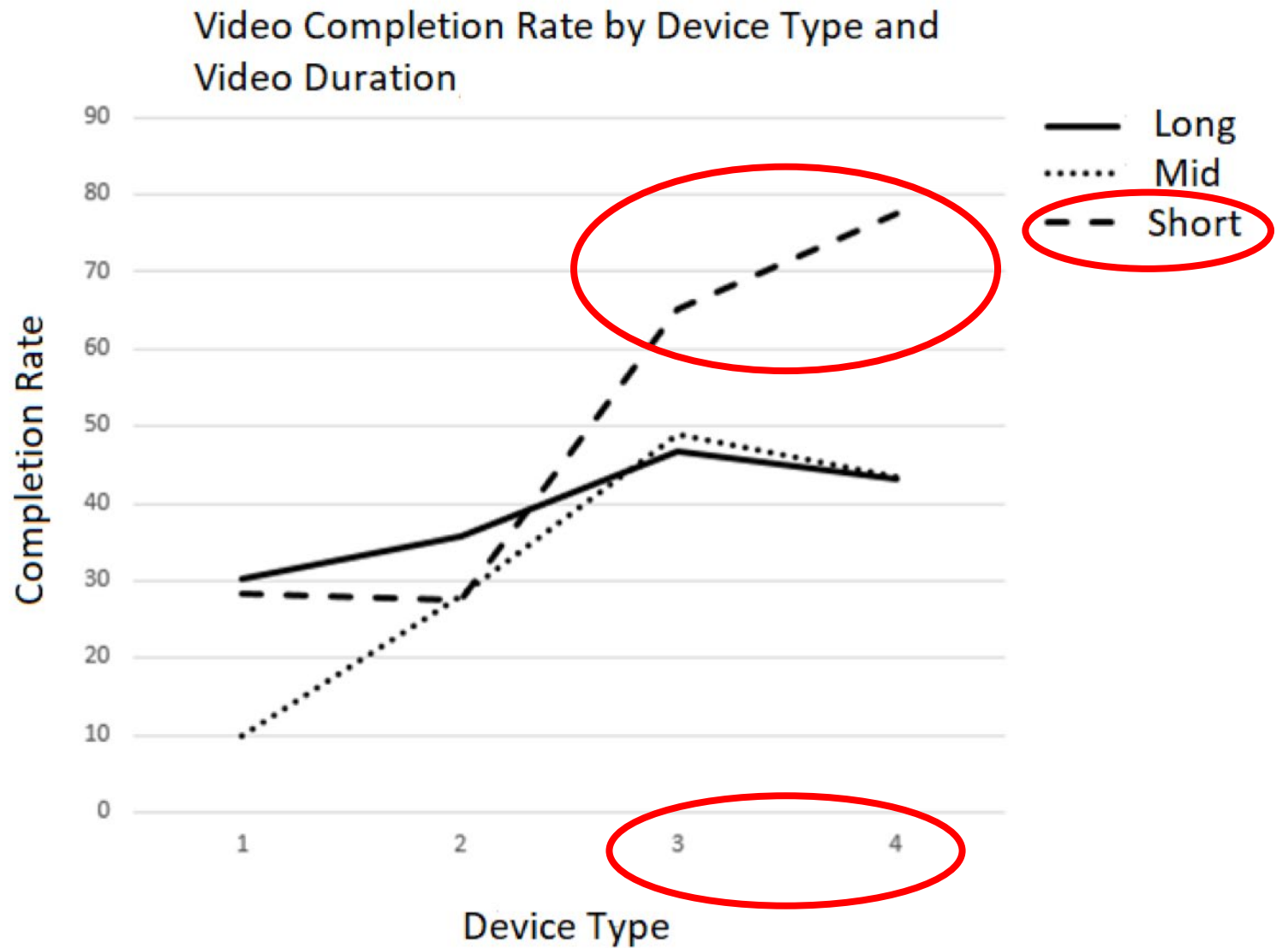


Utilisation of the current data



Output potential

Parameter Estimation				
Parameter	B	Std. Error	95% Wald Confidence Interval	
			Lower	Upper
(Intercept)	-.169	.1460	-.455	.116
Duration (secs)	-.131	.1249	-.376	.114
Background	.298	.1401	.023	.573
Device type	-.093	.1007	-.290	.103
(Scale)	1.014			



Output potential: proposed metrics

Student number	Video Number	Duration (secs)	Viewed			Downloaded			Transcript	Viewed		% Video Completed		Location	etc. etc.		
			Total	90	Total	Y	Views	N		5%	10%	N	25%			50%	100
1	1	90	681	130	30	Y	166	N	85	85	N	83	85	100	77	74	70
1	2	130	481	432	35	N	191	N	100	100	N	100	50	100	50	50	50
1	3	130	640	90	28	N	163	Y	97	95	Y	93	89	100	87	87	83
2	4	432	761	90	38	Y	240	N	80	77	Y	72	69	96	68	67	65
2	5	90	379	130	6	N	80	N	88	88	N	85	84	0	83	82	78
2	3		130			N		N			N		0		1		
2	4		432			Y		N			Y		0		1		
2	5		90			Y		N			N		50		1		
3	1		90			Y		Y			N		100		2		
3	2		130			N		Y			N		100		2		

Where to begin

- **Access is necessary, but not sufficient:**
 - Collaboration with technical staff
 - Embracing statistical input/advice
 - Novice-friendly formatting of data
 - Working collaboratively across disciplines
 - Opportunities for training in simple research methods
 - Encouraging research-focused development

Thank you!
Questions?



THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

References

Guo, PJ, Kim, J, & Rubin, R. (2014). How video production affects student engagement: An empirical study of MOOC videos. *Proceedings of the first ACM conference on learning @ scale*. Online.

Wilder, A & Ballesteros, M. (2016). Recommendations arising from performing data analytics on FutureLearn courses. *Proceedings from FutureLearn Academic Network Meeting, University of Leicester, 2016*. Online.

Links

The BOLD Lab: <https://bold.newcastle.edu.au/home/>

UON on FutureLearn: <https://www.futurelearn.com/partners/university-of-newcastle-australia>

Contact me: michael.kilmister@newcastle.edu.au