

# Learning Analytics and Language MOOCs: Are we teaching strangers?

E. MARTÍN-MONJE – UNED (Madrid. Spain)

M. DOLORES CASTRILLO – UNED (Madrid. Spain)

J. MAÑANA-RODRÍGUEZ – Spanish National Research Council (Madrid. Spain)

UNED

GID2016-10: GLOBE

“Innovative Didactic Group for Languages  
in Open and Blended Environments”



1

# CONTEXT

UNED, MOOCs & Learning Analytics

2



## SOME FACTS



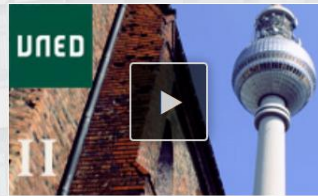
- Spanish National Distance Education University.
- Over 200.000 students.
- Methodology based on principles of distance learning, technology-enhanced learning.
- Largest offer of virtual courses in Spain .
- Pioneering work in Open Educational Resources & Practices.
- Around 250 MOOCs (Massive Open Online Courses) created at UNED since 2013.



# Language MOOCs at UNED

Alemán para hispanohablantes: nociones fundamentales II #MoocAlemán UNED

INSCRIBIRSE EN ESTE CURSO



UNED

How to succeed in the English B1 Level Exam - 2ed

## Español para viajeros



Inglés Profesional / Professional English UNED

INSCRIBIRSE EN ESTE CURSO





# Our 1<sup>st</sup> ~~failure~~ experience with Learning Analytics

Lack of flexibility



Difficulties to access database

	A	B	C	D	E
1	Product	Customer	Qtr 1	Qtr 2	Qtr 3
2	Alice Mutton		\$	702.00	\$
3	Alice Mutton		312.00	\$	-
4	Alice Mutton		-	\$	-
5	Alice Mutton		-	\$	-
6	Alice Mutton		170.00	\$	-
7	Alice Mutton		-	\$	-
8	Alice Mutton		62.40	\$	-
9	Alice Mutton		-	\$	93
10	Alice Mutton		-	\$	92.80
11	Alice Mutton		-	\$	-
12	Alice Mutton		-	\$	9.90
13	Alice Mutton		-	\$	877.50
14	Alice Mutton		-	\$	-
15	Alice Mutton		-	\$	-
16	Alice Mutton		-	\$	-
17	Alice Mutton		-	\$	-
18	Alice Mutton		544.00	\$	-
19	Alice Mutton		-	\$	-
20	Aniseed Syrup		-	\$	600.00
21	Boston Crab Meat		-	\$	14

Missing data



Lack of communication



Challenges in coordinating various teams



**BUT**

“ Failure is simply the opportunity to begin again, this time more intelligently.

*(Henry Ford)*





## SECOND TRY with Learning Analytics

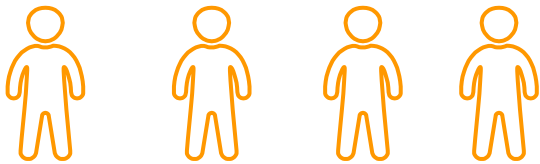


### PURPOSE

*To get a clearer understanding of students' behaviour in a Language MOOC. as a result of the Learning Analytics process*

# Are we teaching strangers?

## A CASE STUDY







## Research questions

### RQ 1

In the context of Language MOOCs, what **types of learning objects** do students engage with most?

### RQ 2

What aspects of **online interaction and participation** relate more strongly to **course completion & success**?

### RQ 3

What are the most prominent **student profiles** in a Language MOOC?

# 2

## METHOD

### Participants & procedures



# Relevant information about MOOC



UNED

How to succeed in the English B1 Level Exam -

## MOOC

1<sup>st</sup> edition of “How to succeed in the English B1 Level exam”  
6 weeks  
Nov-Dec 2015

## Social interaction

- Course forums
- Facebook group

## Learning resources

- Video-lectures (16)
- Downloadable documents (12)
- Online texts (2)

## Gamification

- Badges (up to 7)

## Evaluation tasks

- Quizzes (4)
- P2P activities (4)
- Online texts (2)

## Target group

EFL (English as a Foreign Language) students with B1 level (CEFR)



# Data collection procedures

## Qualitative techniques

Initial & final questionnaire  
(Google Forms)

## Quantitative techniques

- MOOC platform recorded online activity
- Data set processed with MS Excel & SPSS
- Descriptors used:

Learning objects used by participant	Online interaction & participation	Course success
<ul style="list-style-type: none"><li>- 'video-access'</li><li>- 'article-access'</li><li>- 'book-access'</li></ul>	<ul style="list-style-type: none"><li>- 'task-submit'</li><li>- 'assess-submit'</li><li>- 'peer-feedback-submit'</li><li>- 'forum-message-comment'</li></ul>	Tracking. Course success established at +5 on scale 0-10



## Data analysis

**SOME SLIDES WITH THE DETAILED DATA HAVE BEEN OMITTED UNTIL THE PAPER ON WHICH THIS PRESENTATION IS BASED BECOMES PUBLISHED IN THE *CALL JOURNAL*.**

**(PLEASE SEE REFERENCE AT THE END OF THE SLIDE SHOW)**

# 3

## CONCLUSIONS TO THE CASE STUDY



## What we have learnt about our LMOOC participants

- They prefer **videos** as learning materials.
- Students in their **40s download** resources significantly more. Maybe different age groups have different intentions when signing up for an LMOOC.
- There is a strong association between **mark** obtained & number of **video** accesses.
- There is a strong association between **mark** obtained & access to **online materials**.
- There is **no** significant correlation between **forum** interaction & **course success** in an LMOOC.
- The most prominent profiles are “**Viewer**” & to a lesser extent “**All-rounder**”.



# 4

**OUR NEXT STEP:  
INTEGRATING LEARNING  
ANALYTICS IN OPEN edX**





## What do we want to analyse? Triple perspective:

**1. To get a general idea of how our MOOCs are going**



**2. To analyse each of the elements that compose the MOOC (learning objects)**



**3. To control the activity of the participants individually**





# How to do it using an open source platform? Some tips based on our experience

## The tools:



<a href="#">Course Info</a>	<a href="#">Membership</a>	<a href="#">Cohorts</a>	<a href="#">Student Admin</a>	<a href="#">Data Download</a>	<a href="#">Analytics</a>	<a href="#">Email</a>	<a href="#">Certificates</a>
<b>Open Responses</b>							
Open Responses							
<b>UNITS</b>	<b>ASSESSMENTS</b>	<b>TOTAL RESPONSES</b>	<b>TRAINING</b>	<b>PEER</b>	<b>SELF</b>	<b>STAFF</b>	<b>FINAL GRADE RECEIVED</b>
5	5	809	60	11	0	0	730
<b>Unit Name</b>	<b>Assessment</b>	<b>Total Responses</b>	<b>Training</b>	<b>Peer</b>	<b>Self</b>	<b>Staff</b>	<b>Final Grade Received</b>
Submit First Draft: ...	Peer Reviewed Pair...	292	52	1	0	2	237
Grading and Feedb...	Peer Reviewed Pair...	118	0	2	0	1	115
Submit Final Draft:...	Peer Reviewed Pair...	178	8	1	0	3	166
Submit First Draft: ...	Peer Reviewed Pair...	84	0	3	0	1	80
Submit Final Draft:...	Peer Reviewed Pair...	137	0	4	0	1	132



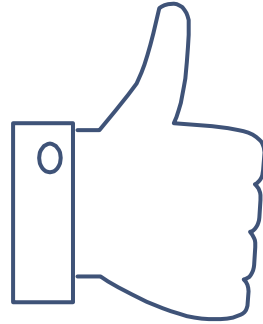
## The WHATs? & the HOWs

Some examples:	INS	CSV
Number of <b>registered students</b> since the opening of the course, age, sex, country and studies	Blue	Green
Number of <b>students who have passed</b> the course	White	Green
Number of participants who have attempted to solve the <b>1st quiz or activity</b>	White	Green
Statistics of all students who have <b>at least seen a video or completed a task</b>	Blue	White
Individual <b>analysis of videos</b>	Blue	Green
<b>Data</b> related to students who have passed or failed <b>sorted by exam and type of user</b>	White	Green



## REFERENCES

- Anderson, A., Huttenlocher, D., Kleinberg, J. y Leskovec, J. (2014). Engaging with massive online courses. In *WWW'14 Proceedings of the 23rd international conference on World wide web* (pp. 687-698). New York: ACM.
- Gimeno-Sanz A., Navarro-Laboulais C., Despujol-Zabala I. (2017). Additional Functionalities to Convert an xMOOC into an xLMOOC. In: C. Delgado Kloos, P. Jermann, M. Pérez-Sanagustín, D. Seaton, S. White (eds) *Digital Education: Out to the World and Back to the Campus. EMOOCs 2017. Lecture Notes in Computer Science, vol 10254* (pp. 48-57). Cham, Switerland: Springer.
- Martín-Monje, E., Castrillo, M.D. & Mañana-Rodríguez, J. (in press). Understanding online interaction in language MOOCs through learning analytics. *Computer Assisted Language Learning*. doi: <http://dx.doi.org/10.1080/09588221.2017.1378237>



# THANKS!

## **Any questions?**

You can find us at  
[emartin@flog.uned.es](mailto:emartin@flog.uned.es)  
[mcastrillo@flog.uned.es](mailto:mcastrillo@flog.uned.es)  
[jorgemarod@gmail.com](mailto:jorgemarod@gmail.com)



## CREDITS

Special thanks to all the people who made and released these awesome resources for free:

- Presentation template by [SlidesCarnival](#)
- Photographs by [Startup Stock Photos](#)