

A Data Visualization Tool for Monitoring Learners in a MOOC

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THE MOOC : “MANAGE YOUR PRICES !”

- ▶ A course on *“the economics of price discrimination and revenue management”* ([link here](#))
- ▶ A 4 weeks course on Futurelearn platform
- ▶ 16 months of development
- ▶ Total cost $\simeq 170$ k €
- ▶ A great platform (FutureLearn) with data sets available daily
- ▶ First run on 16th of January, 2017 ; second 24th of April ;
→ next run 13th of November, 2017

THE MOOC : “MANAGE YOUR PRICES !”

Pedagogical approach

- ▶ Experiment (economics) first
Learn (economic) principles second
- ↪ each course week starts with either a case study (animates)
or a pricing simulation game (partnership with *economics games*)
- ▶ Each step engage learners in a discussion page (comments)
↪ *conversational learning*
- ▶ Many different steps types : animations, simulation games,
cartoons, interviews, case studies, videos, articles,
quizzes...
- ↪ *Telling stories ; provoking conversation ; celebrating progress*

THE MOOC : “MANAGE YOUR PRICES !”

ONLINE COURSE

Manage Your Prices: an Introduction to Pricing Strategy and Revenue Management

Learn to use pricing strategies to increase your firm's revenue, and set the right price for the right person at the right time.

Join now – starts 13 Nov



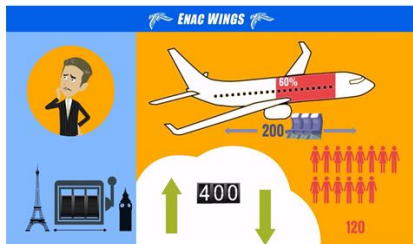
[Overview](#)

[Start dates](#)

[Requirements](#)

[Educators](#)

THE MOOC : "MANAGE YOUR PRICES!"



THE MOOC : “MANAGE YOUR PRICES !”

Resource Type	FL identifier	Description/Content	# of steps
Article	AR	Articles with theoretical content or week wrap-ups	14
Video	VI	Videos with week introductions, theoretical content, case study cartoons or interviews of experts	23
Discussion	DI	Specific discussion steps (discussions are also present in all steps)	6
Game	AR	The game is hosted on a partner platform, and accessible through an 'article' step.	4
Tests or quiz or assignment	TE, QU or AS/RV/RE	We group here all forms of assessment: tests, quiz or assignment	13

Week 1	DI	VI	VI	VI	DI	VI	VI	VI	DI	QU	VI	DI	AR	AR	TE	DI					
Week 2	AR	AR	DI	VI	VI	VI	AR	AR	QU	VI	AR	TE									
Week 3	VI	VI	VI	VI	VI	AR	QU	AR	QU	AR	AR	QU	AR	AR	VI	VI	AS	RV	RE	AR	TE
Week 4	AR	VI	AR	TE	VI	VI	VI	VI	AR	TE	AR										

THE MOOC : "MANAGE YOUR PRICES !"

Some numbers on the first session :

- ▶ \simeq 6000 registered
- ▶ \geq 3000 learners visiting at least once
- ▶ \geq 2000 learners considered as "active"
- ▶ 60 different steps (resources)
- ▶ \geq 5000 comments on these steps
- ▶ One lead educator, one teacher, 2 facilitators (1h/day)

WHY IS IT IMPORTANT TO “MONITOR” LEARNERS ?

- ▶ During the course run, **educator(s) should be able to :**
 - ▶ Follow (silently) active discussions
 - ▶ Check/answer misunderstandings/confusions (errors)
 - ▶ Engage learners in discussions
 - ▶ Provide additional resources

But :

- ▶ Learners do not all follow "linear paths"
(see *Nathalie Lenoir's* talk tomorrow)
and learners spread all around the 60 steps in no time !
 - ▶ Some steps are more "lively" than others at some point in time
- ↔ How to "*be there*" ?
- ▶ Efficient allocation of human resources (facilitators & educators) is not easy.
- ↔ How to "*be there when it matters*" ?

WHY IS IT IMPORTANT TO “MONITOR” LEARNERS ?

Questions educators should be able to answer :

- ▶ Where most of the learners currently are ?
 - ▶ Which steps are mostly watched/completed ?
 - ▶ Since the beginning
 - ▶ For the last 24h ?
 - ▶ For the last 48h ?
 - ▶ Last week ?
 - ▶ Which steps are mostly commented ?
 - ▶ Since the beginning
 - ▶ For the last 24h ?...
 - ▶ Can I see all the comments ?
 - ▶ Where did the team intervene already ?
- ↪ Self monitoring
- ▶ What's new since my last connection ?
 - ▶ At what time of the day did the student visit/comment ?
 - ▶ ...

FUTURELEARN'S DATASETS

The monitor uses Futurelearn's stats dashboard measuring learners' progress/activities/comments (updated nightly).

Stats dashboard

DATASETS

COURSE MEASURES

TOTALS

BY WEEK

- **Campaigns** 29.8 KB *last updated 1 Sep 2017*
- **Comments** 1.71 MB *last updated 12 Mar 2017*
- **Enrolments** 736 KB *last updated 1 Sep 2017*
- **Peer Review Assignments** 295 KB *last updated 12 Mar 2017*
- **Peer Review Reviews** 142 KB *last updated 12 Mar 2017*
- **Question Response** 2.47 MB *last updated 12 Mar 2017*
- **Step Activity** 4.11 MB *last updated 12 Mar 2017*
- **Team Members** 1.02 KB *last updated 1 Sep 2017*

Find out more about **datasets** including how they are generated, what they contain, and how to use them.

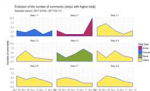
THE R-SHINY MONITORING TOOL

Stats dashboard

DATASETS COURSE MEASURES TOTALS BY WEEK

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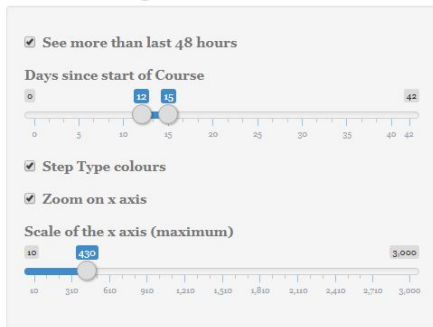


ONLINE DEMO

- ▶ Based on data from the first run
- ▶ Let us assume we are on day 32 of the first run of our MOOC
- ▶ What happened recently ?
- ▶ Shiny Monitor
- ▶ There is also an **online version** for sharing

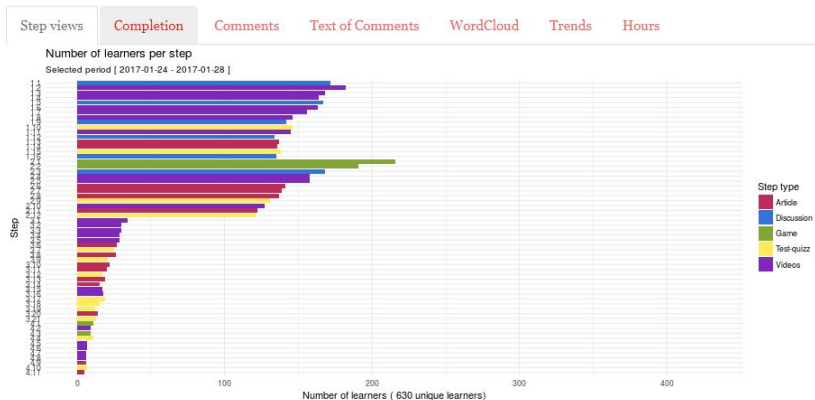
THE R-SHINY MONITORING TOOL : PANEL

Monitoring Learners in a MOOC



THE R-SHINY MONITORING TOOL :

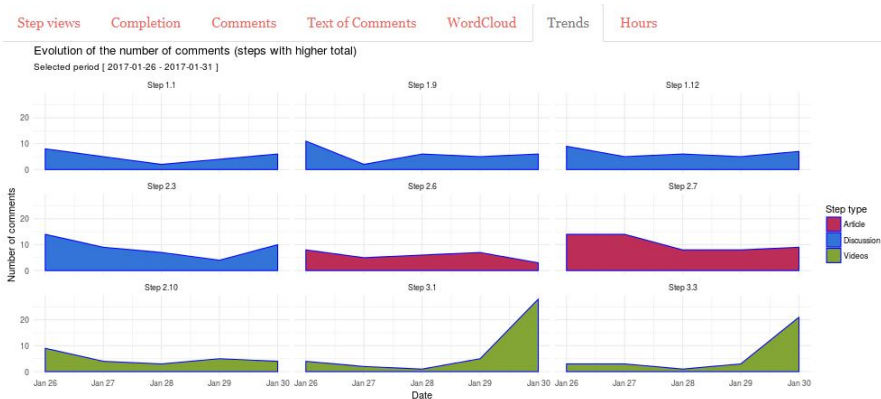
STEP VIEWS



THE R-SHINY MONITORING TOOL : COMMENTS (MINE AND THEIRS)



THE R-SHINY MONITORING TOOL : COMMENTS RECENT TRENDS



THE R-SHINY MONITORING TOOL : ALL COMMENTS IN A WORDCLOUD

[Step views](#)[Completion](#)[Comments](#)[Text of Comments](#)[WordCloud](#)[Trends](#)[Hours](#)

Words from 809 comments (176 learners)

"Pric(e-s-ing)" and "Demand" removed



PARTIAL CONCLUSION

- ▶ Work in progress (comments welcome) \leftrightarrow to be fully tested in November
- ▶ Our data visualisation monitoring tool :
 - ▶ Dynamically provides both a bird-eye view of global features and a micro view (at the individual level) of learners activities
 - ▶ Facilitates interactions with learners *when and where they are on the platform*
 - ▶ Helps engaging/reactivating discussions
 - ▶ Alleviates educator burden during a course run
 - ▶ Increases efficiency of human resources (facilitators/educators)

PARTIAL CONCLUSION

- ▶ Educators can empower the data and follow learners by thousands.
 - ▶ Technically :
 - ▶ The data visualisation tool can be used on any course on FutureLearn
 - ▶ It runs locally on any computer (R installed) or on a website
 - ▶ Note that FutureLearn recently introduced a facilitation dashboard.
- ↪ Proof of interest for data visualisation tools for educators

