

MocViz: A Large Scale, Open Access, Collaborative, Data Analytics Platform for MOOCs

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Abstract

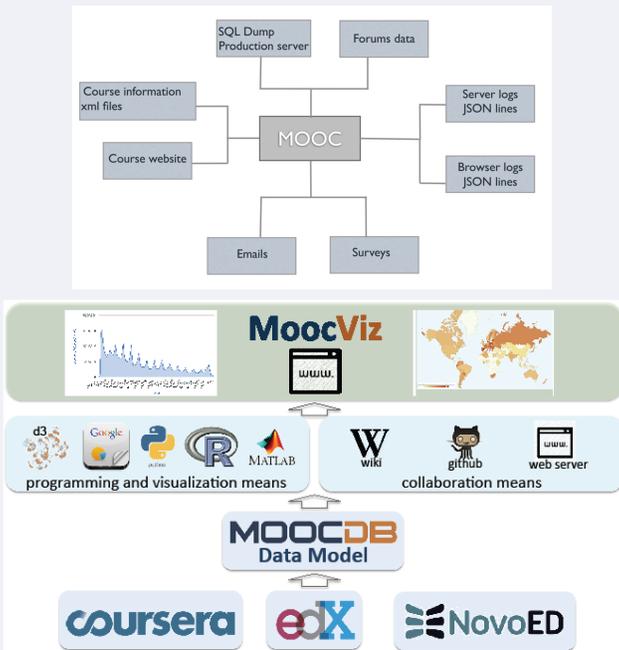
We present an **open access large scale analytics platform** that helps researchers analyze MOOC data from multiple platforms without the need to share the data.

The platform allows researchers to **share their scripts and effort**, compare results and attempts to engage the community to achieve shared educational science goals.

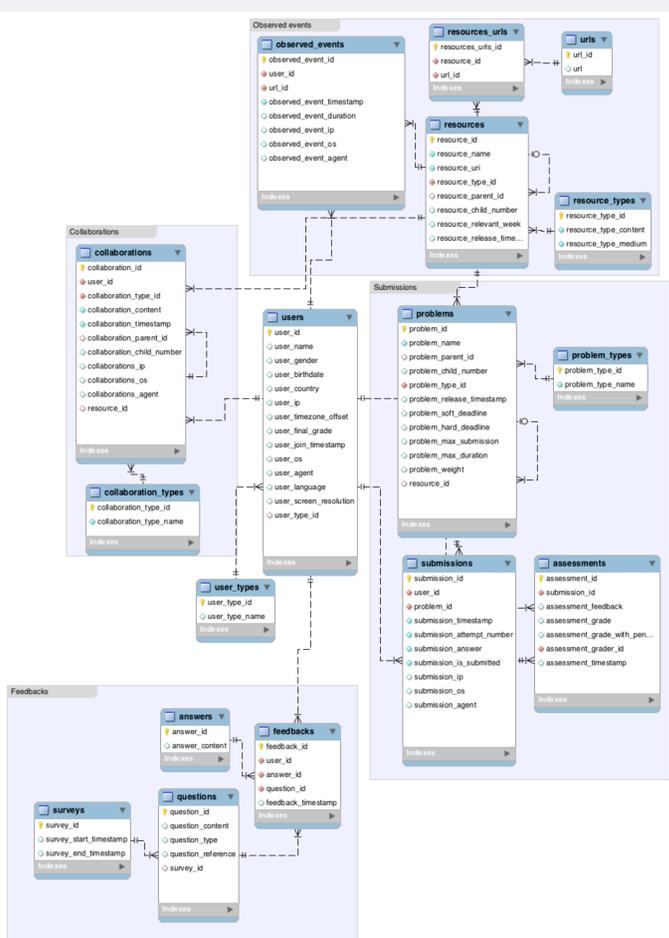
We demonstrate the platform's capability by **analyzing data from two MOOCs**, one from Coursera (offered by Stanford University) and one from edX (offered by MITx).

1. Introduction / Motivation

Conducting MOOC research with one or multiple platforms' behavioral data, or interacting with the data in even simple ways is an overwhelming challenge.

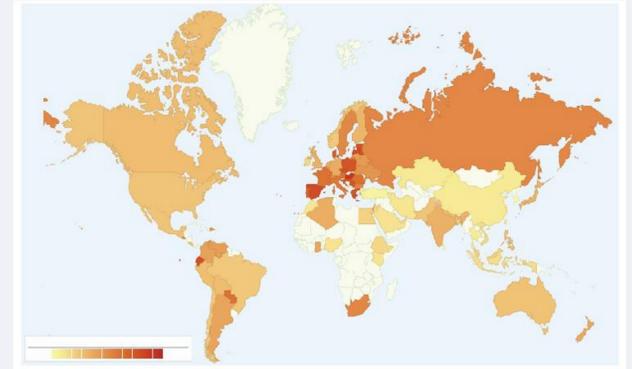
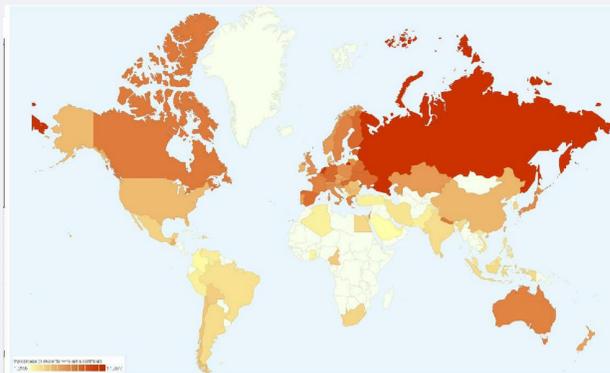


2. MOOCdb schema

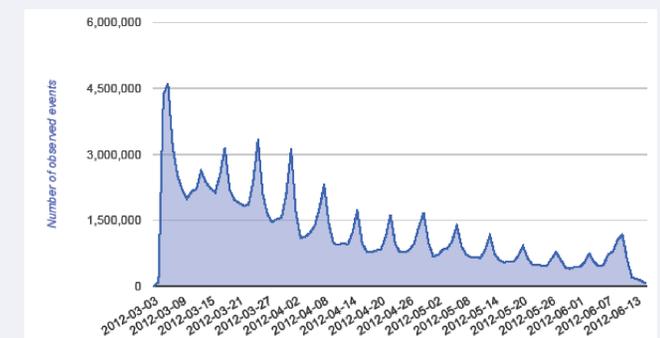
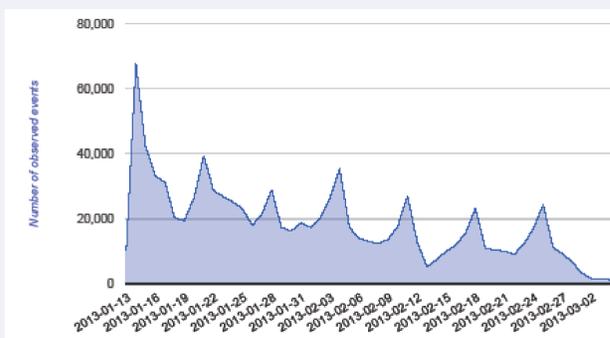


3. Results

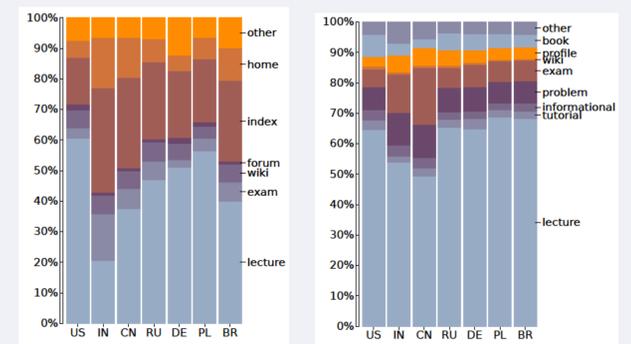
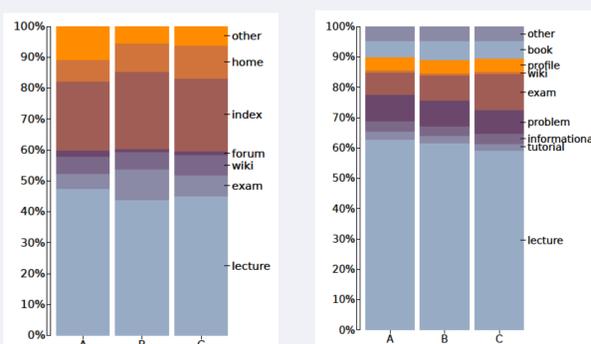
	Coursera course	edX Course
Title	Cryptography I	Circuits and Electronics (6.002x)
Instructors	Dan Boneh	Anant Agarwal, Gerald Sussman, Piotr Mitros
University	Stanford University	MIT
Length	6 weeks	14 weeks
Platform	Coursera	edX
Start date	Jan 13th, 2013	March 5, 2012
Registrants	21,744	154,763



Left plot shows the colored plot for the ratio of certificate winners to the number of registrants on a per country basis for the course offered via Coursera. Right plot shows the colored plot for the ratio of certificate winners to the number of registrants on a per country basis for 6.002x offered via edX platform.



Example of interactive visual analytics for data from a MITx course offered on the edX platform and a Stanford course offered via Coursera platforms. Left plot shows the number of observing events by day for the Stanford course. Right plot shows the number of observing events by day for the MITx course.



Differences in relative use of resources by students that got different grades (left: Coursera ; right: edX)

Differences in relative use of resources by students from different countries. (left: Coursera ; right: edX)

	Lecture		Exam	
	l	u	l	u
BR vs.DE	-28253	-1117.2	-1024.1	592.15
BR vs.IN	-461.58	21961	-1335.2	0.2361
BR vs.RU	-20329	3236.1	-758.69	644.88
BR vs.US	-24271	-2475.1	-685.78	612.37
DE vs.IN	15939	34930	-1017.1	114
DE vs.RU	-4025.8	16302	-446.33	764.43
DE vs.US	-7811.2	10435	-364.14	722.64
IN vs.RU	-25998	-12595	211.44	1009.8
IN vs.US	-29106	-19138	333.96	927.65
RU vs.US	-10989	1337	-346.88	387.29

	Lecture		Exam	
	l	u	l	u
A vs. B	20131	25304	577.26	877.79
A vs. C	11348	21823	-264.72	343.8
B vs. C	-11341	-924.13	-990.56	-385.41

Analysis of the duration spent on resource type by country and grade based student cohorts for the Coursera course

	Lecture		Exam		Problems		Book	
	l	u	l	u	l	u	l	u
BR vs.DE	-35405	138970	-2563.1	9993.1	-7198.3	12247	-37926	13293
BR vs.IN	165720	287580	-1668.5	7106.2	2319.2	15908	-8910.5	26882
BR vs.RU	-60298	94243	-1072.3	10056	-5549.5	11684	-29058	16336
BR vs.US	-113120	4533	-5271.2	3201	-16114	-2993.5	-53044	-18485
DE vs.IN	102530	24721	-6205	4212.7	-1477.3	14656	55,123	42550
DE vs.RU	-121360	51742	-5455	7009.4	-9108.7	10195	-19468	31378
DE vs.US	-176650	-35499	-9832.1	332.03	-19948	-4207.7	-44179	-2717.7
IN vs.RU	-269690	-149660	-2548.6	6094.8	-12739	646.57	-32976	2281.4
IN vs.US	-313990	-247900	-6133.3	-1374.5	-22352	-14982	-54456	-35045
RU vs.US	-129150	-13383	-9695.1	-1358.9	-19076	-6166.2	-46405	-12401

	Lecture		Exam		Problems		Book	
	l	u	l	u	l	u	l	u
A vs. B	-16144	22245	-1346	1117.5	-3689.6	315.26	-13797	-3978.9
A vs. C	64383	119560	3935.6	7476.6	8216	13972	-2728.8	11383
B vs. C	59184	118660	3912	7728.6	9679	15884	5609.6	20820

Analysis of the duration spent on resource type by country and grade based student cohorts for the edX course