Data Analytics on VLE Access Data How much can we mine from a mouseclick ?

John Brennan
Owen Corrigan
Aly Egan
Mark Glynn
Alan F. Smeaton
Sinéad Smyth

@glynnmark

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Dublin City University

Outline

- Motivation and goals
- Selecting the modules
- Study by numbers
- The interventions
  - What the student sees
  - What the Lecturer sees
- What the students said
- The results

Motivation

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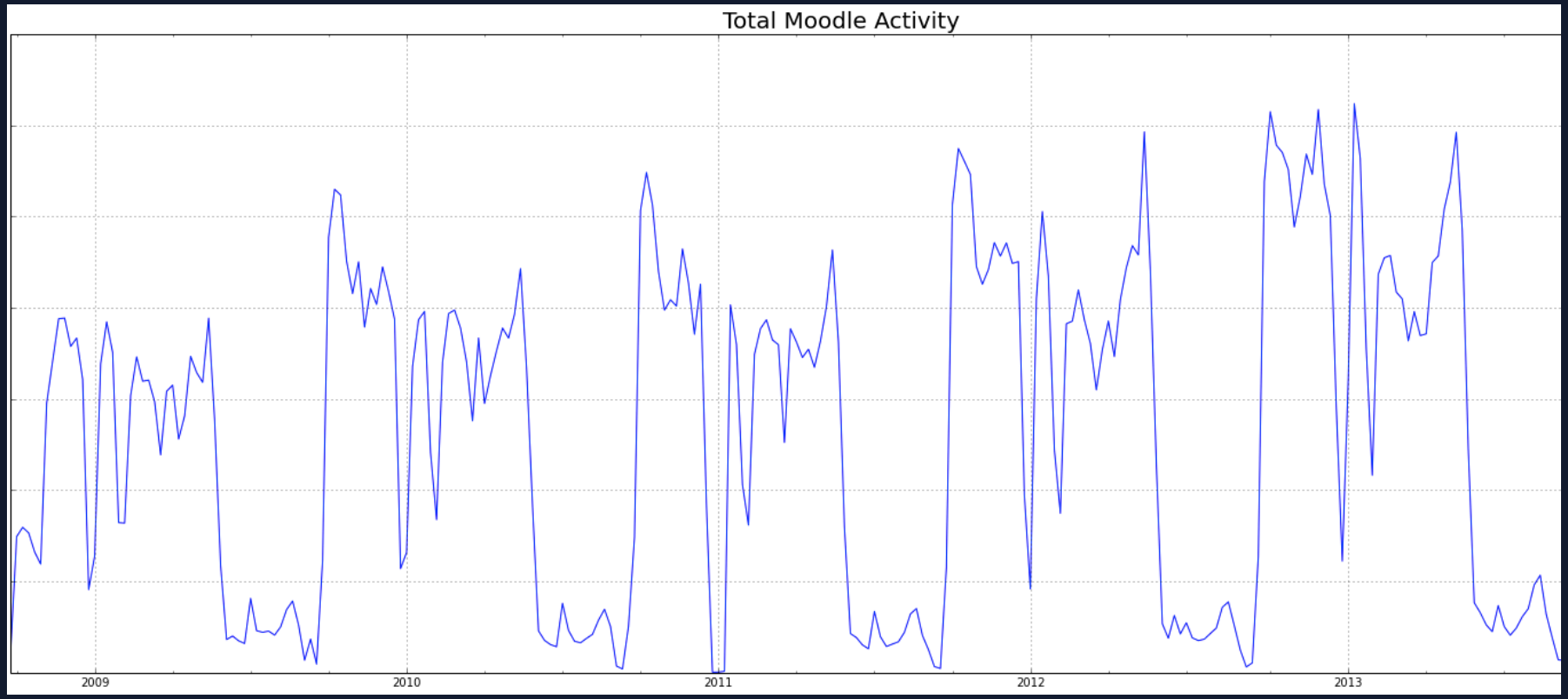
Total Moodle Activity – notice the periodicity



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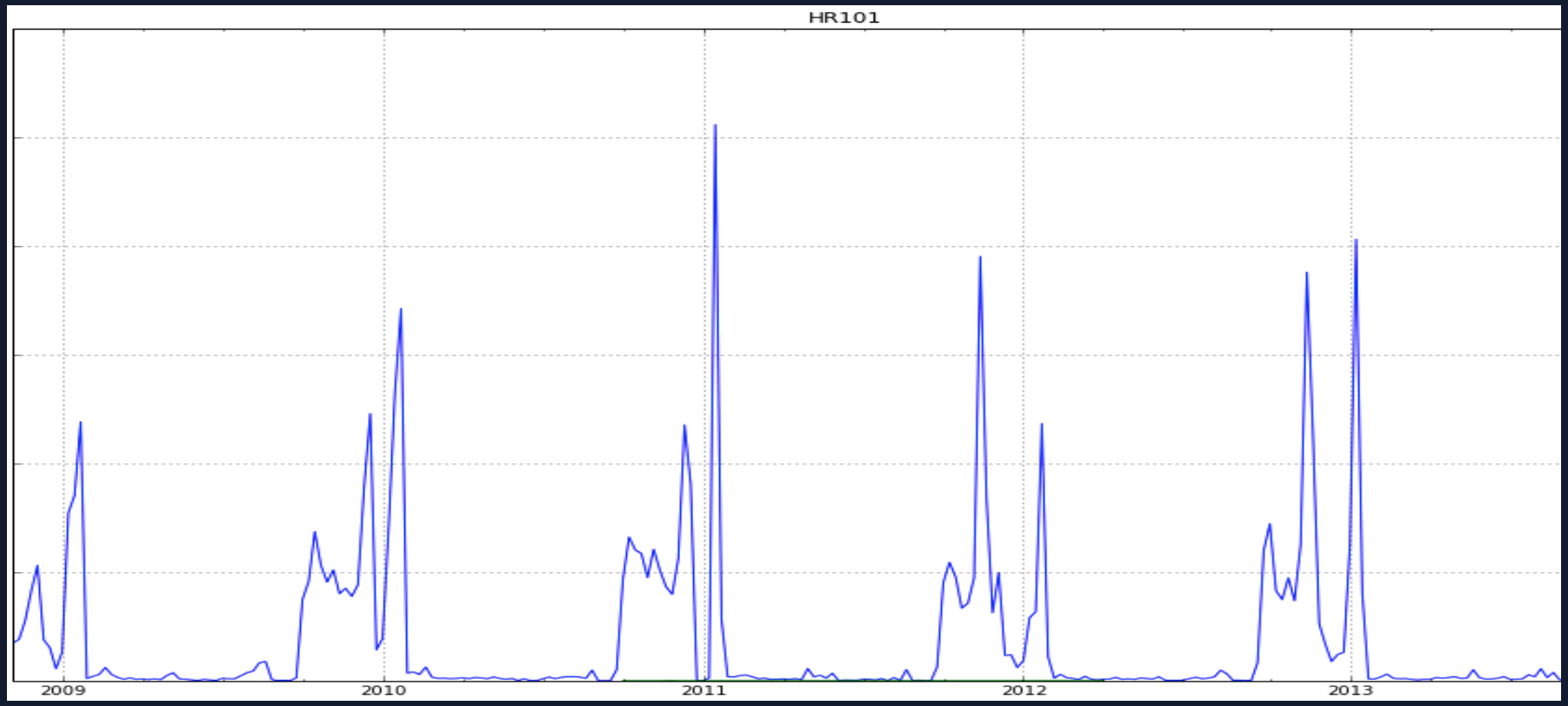
One example module – ideal !



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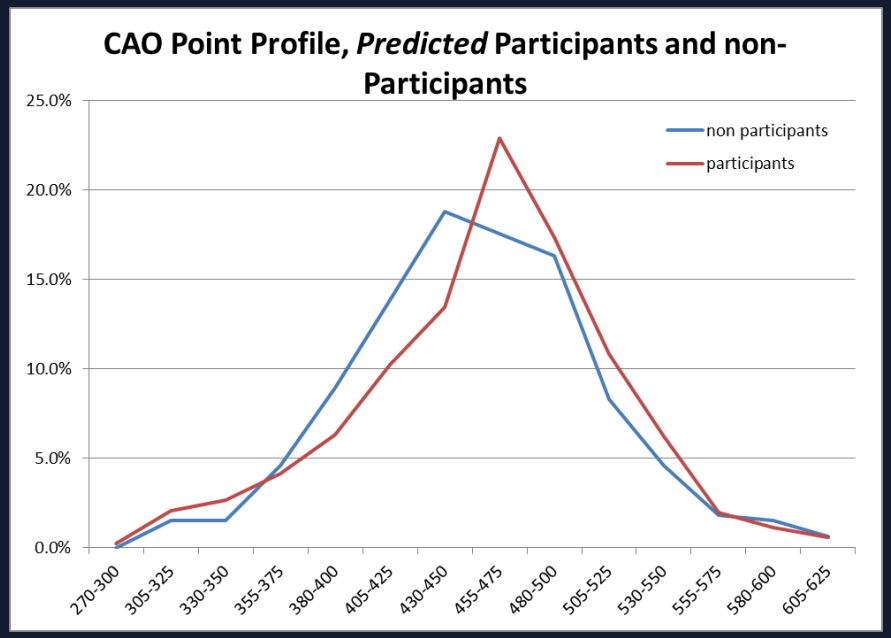
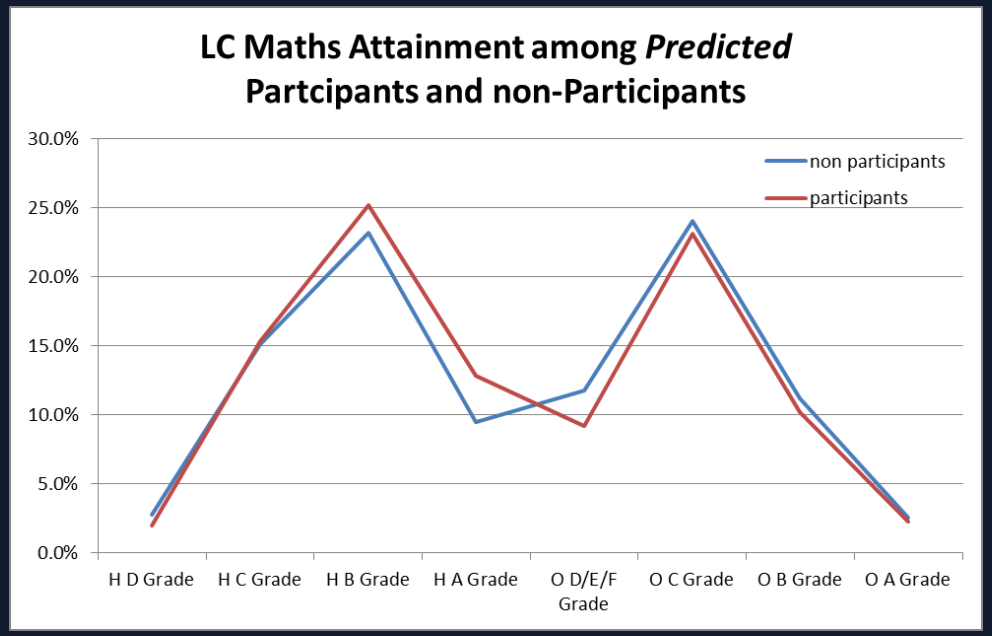
Study by numbers

- 17 Modules across the University (first year, high failure rate, use Loop, periodicity, stability of content, Lecturer on-board)
- Offered to students who opt-in or opt-out, over 18s only
- 76% of students opted-in, 377 opted-out, no difference among cohorts
- 10,245 emails sent to 1,184 students who opted-in over 13 weekly email alerts

PredictEd Participant Profile

No significant difference in the entry profiles of participants vs. non-participants overall





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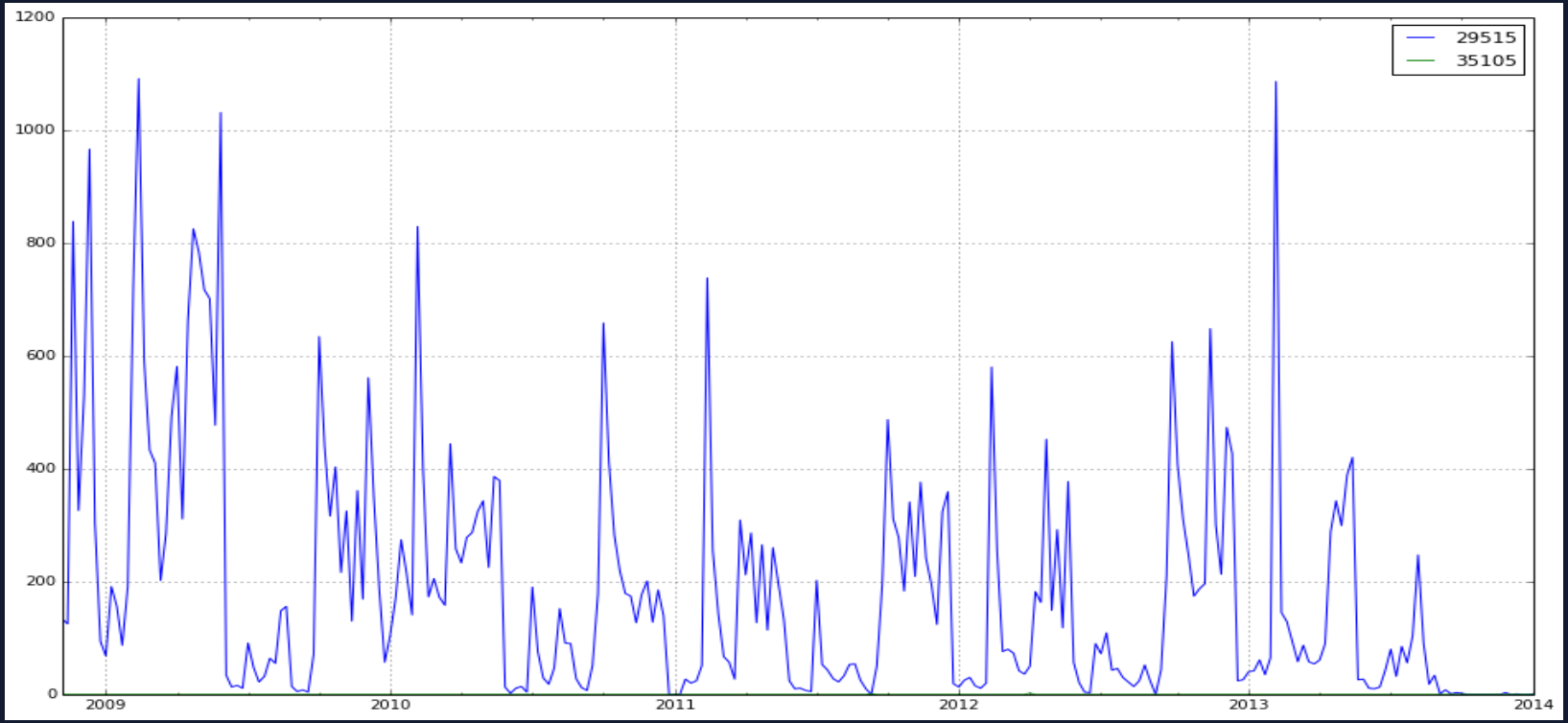
Modules which work well …

- Have periodicity (repeatability) in Moodle access
- Confidence of predictor increases over time
- Don't have high pass rates (< 0.95)
- Have large number of students, early-stage

LG116: Introduction to Politics

Students / year = ~110
Pass rate = 0.78



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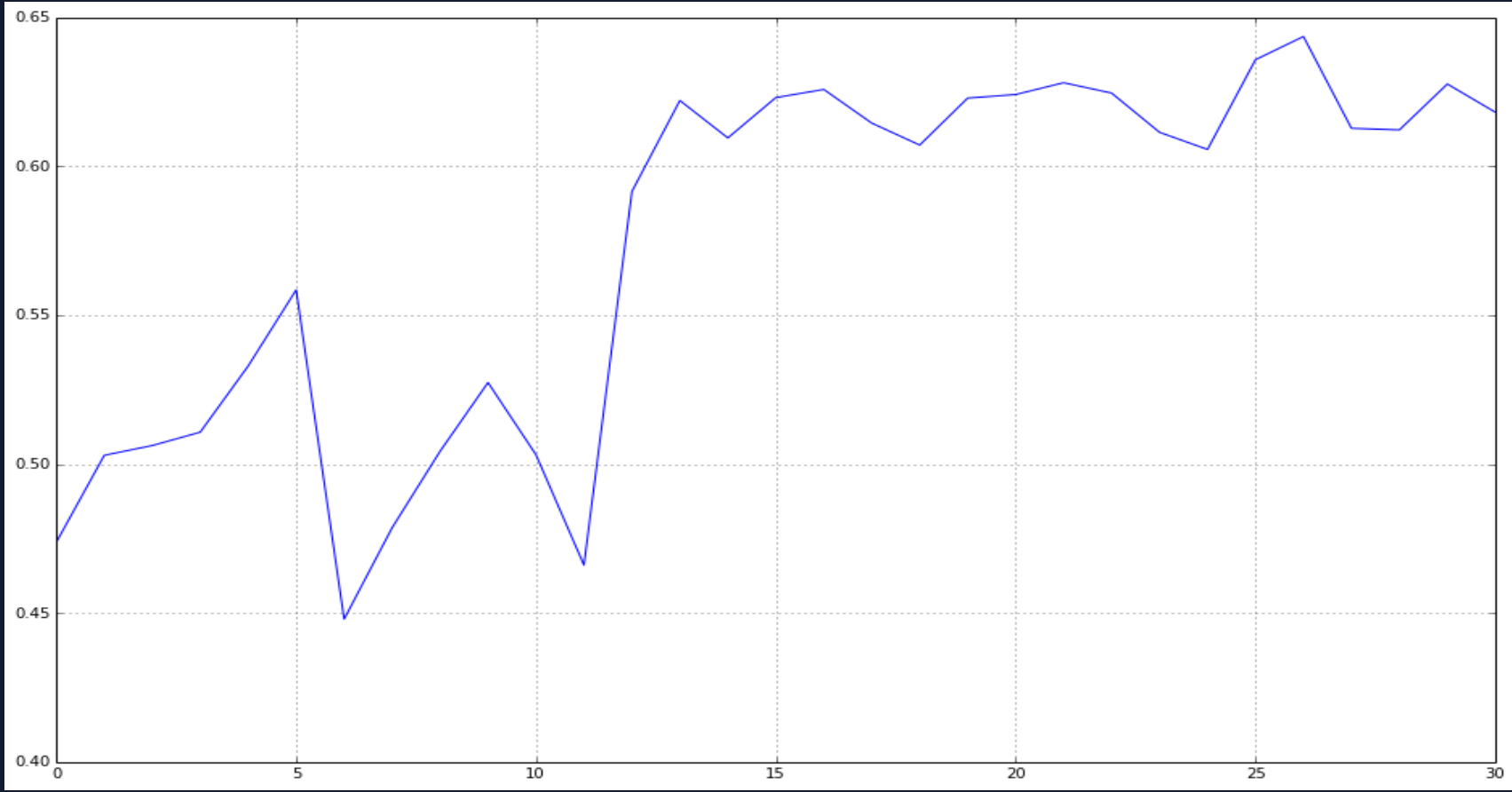
LG116 – Predictor confidence (ROC AUC)



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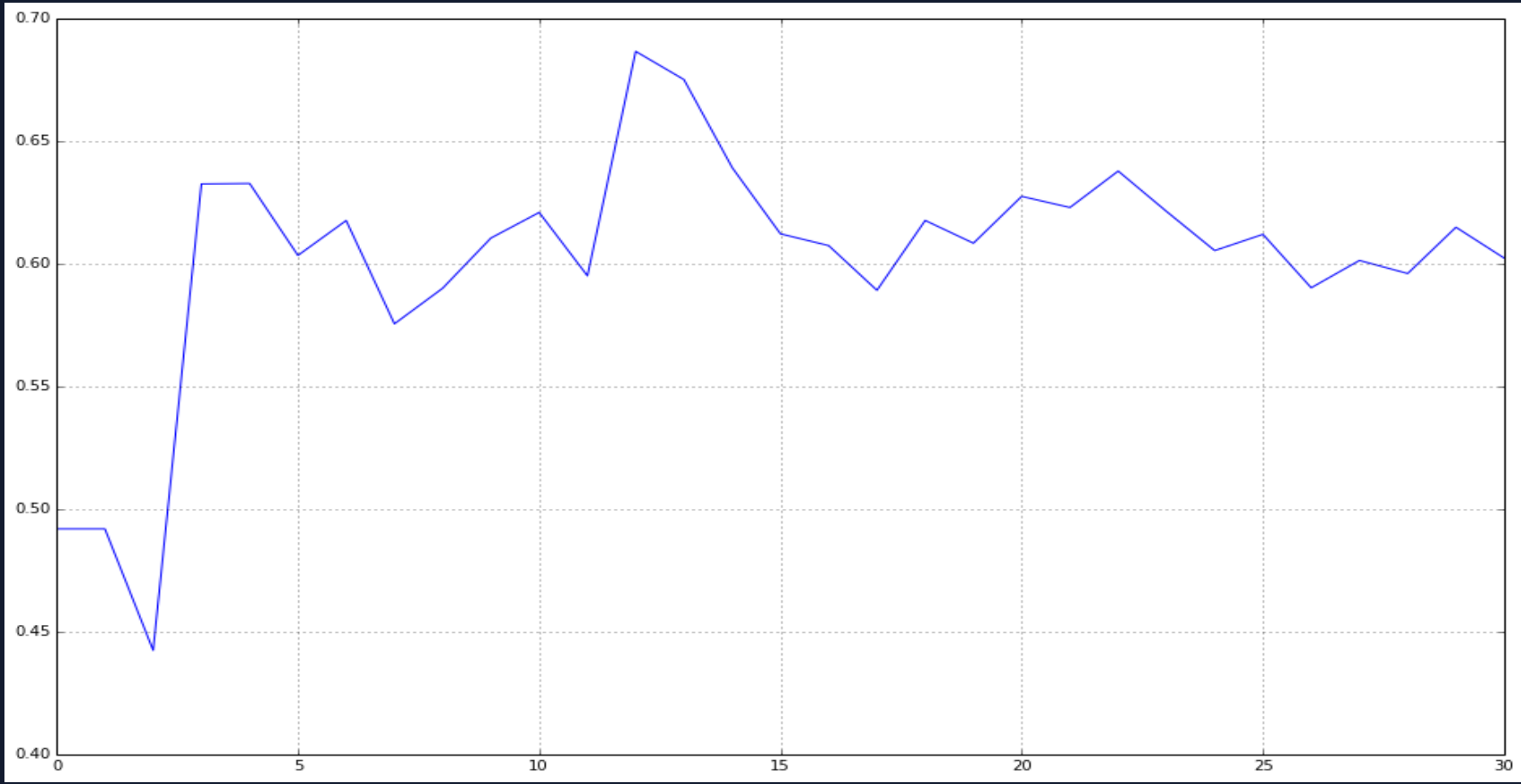
SS103



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Student Interventions: Feedback

Dear _____,

This week our records show that your level of Moodle engagement is nearly at the target. If you try a little harder this week you will easily succeed.

Please use this information to help you to increase your engagement with Moodle. We will continue monitoring your Moodle activity for the module XX and will let you know how well you are doing again next week.

Kind Regards,
The Research Team
PredictED

If you feel affected by this and would like to speak to someone, please contact student support services (studentsupport@dcu.ie)

If you would like more information on this project please contact one of the research team members:

Alan Smeaton: alan.smeaton@dcu.ie
Sinead Smyth: sinead.smyth@dcu.ie

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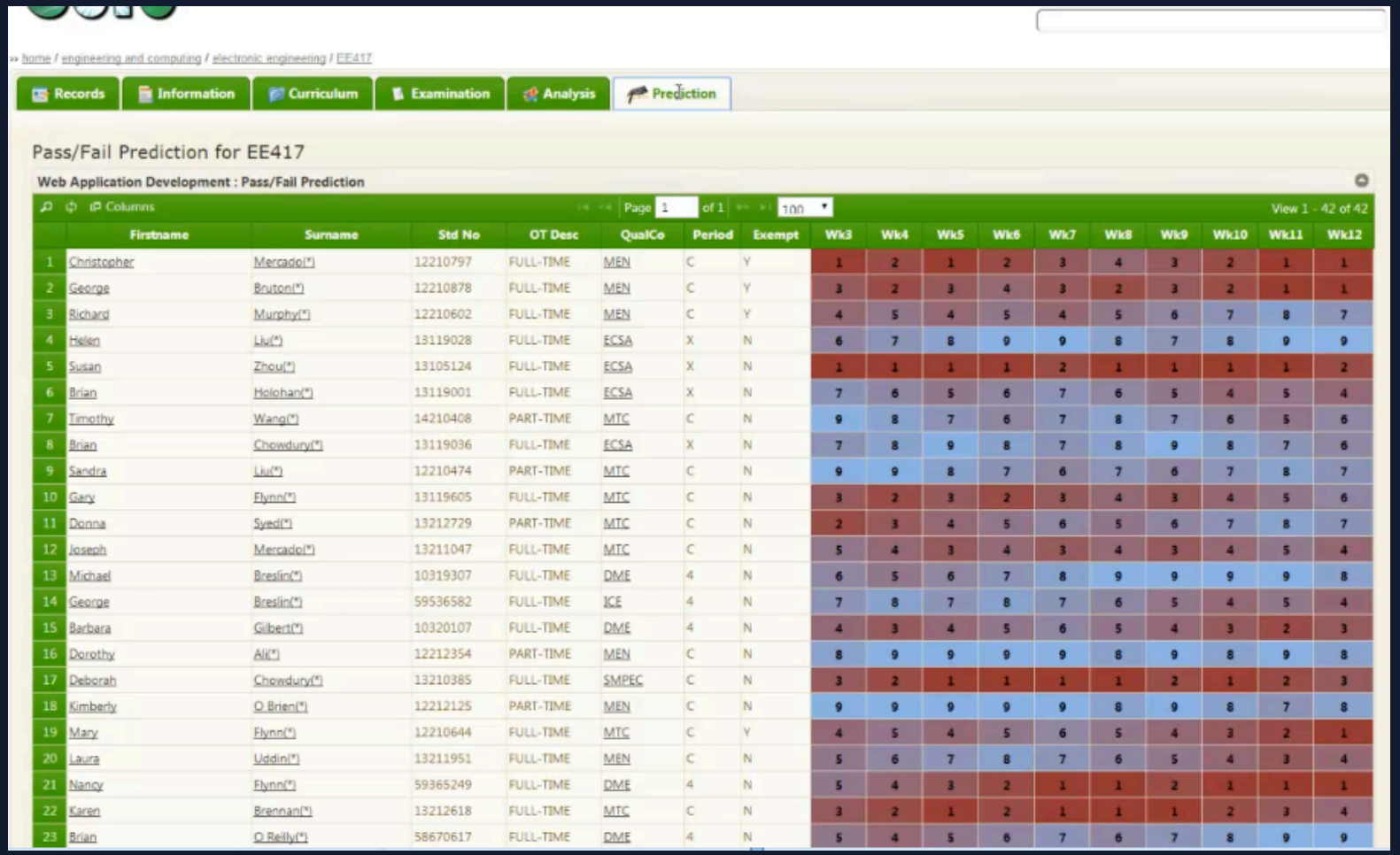
The Interventions – Lecturers' Experience



» home / engineering and computing / electronic engineering / EE417

Records | Information | Curriculum | Examination | Analysis | Prediction

Pass/Fail Prediction for EE417

Web Application Development : Pass/Fail Prediction

Columns | Page 1 of 1 | 100 | View 1 - 42 of 42

	Firstname	Surname	Std No	OT Desc	QualCo	Period	Exempt	Wk3	Wk4	Wk5	Wk6	Wk7	Wk8	Wk9	Wk10	Wk11	Wk12
1	Christopher	Mercado(*)	12210797	FULL-TIME	MEN	C	Y	1	2	1	2	3	4	3	2	1	1
2	George	Bruton(*)	12210878	FULL-TIME	MEN	C	Y	3	2	3	4	3	2	3	2	1	1
3	Richard	Murphy(*)	12210602	FULL-TIME	MEN	C	Y	4	5	4	5	4	5	6	7	8	7
4	Helen	Liu(*)	13119028	FULL-TIME	ECSA	X	N	6	7	8	9	9	8	7	8	9	9
5	Susan	Zhou(*)	13105124	FULL-TIME	ECSA	X	N	1	1	1	1	2	1	1	1	1	2
6	Brian	Holohan(*)	13119001	FULL-TIME	ECSA	X	N	7	6	5	6	7	6	5	4	5	4
7	Timothy	Wang(*)	14210408	PART-TIME	MTC	C	N	9	8	7	6	7	8	7	6	5	6
8	Brian	Chowdury(*)	13119036	FULL-TIME	ECSA	X	N	7	8	9	8	7	8	9	8	7	6
9	Sandra	Liu(*)	12210474	PART-TIME	MTC	C	N	9	9	8	7	6	7	6	7	8	7
10	Gary	Flynn(*)	13119605	FULL-TIME	MTC	C	N	3	2	3	2	3	4	3	4	5	6
11	Donna	Syed(*)	13212729	PART-TIME	MTC	C	N	2	3	4	5	6	5	6	7	8	7
12	Joseph	Mercado(*)	13211047	FULL-TIME	MTC	C	N	5	4	3	4	3	4	3	4	5	4
13	Michael	Breslin(*)	10319307	FULL-TIME	DME	4	N	6	5	6	7	8	9	9	9	9	8
14	George	Breslin(*)	59536582	FULL-TIME	ICE	4	N	7	8	7	8	7	6	5	4	5	4
15	Barbara	Gilbert(*)	10320107	FULL-TIME	DME	4	N	4	3	4	5	6	5	4	3	2	3
16	Dorothy	Ali(*)	12212354	PART-TIME	MEN	C	N	8	9	9	9	9	8	9	8	9	8
17	Deborah	Chowdury(*)	13210385	FULL-TIME	SMPEC	C	N	3	2	1	1	1	1	2	1	2	3
18	Kimberly	O Brien(*)	12212125	PART-TIME	MEN	C	N	9	9	9	9	9	8	9	8	7	8
19	Mary	Flynn(*)	12210644	FULL-TIME	MTC	C	Y	4	5	4	5	6	5	4	3	2	1
20	Laura	Uddin(*)	13211951	FULL-TIME	MEN	C	N	5	6	7	8	7	6	5	4	3	4
21	Nancy	Flynn(*)	59365249	FULL-TIME	DME	4	N	5	4	3	2	1	1	2	1	1	1
22	Karen	Brennan(*)	13212618	FULL-TIME	MTC	C	N	3	2	1	2	1	1	1	2	3	4
23	Brian	O Reilly(*)	58670617	FULL-TIME	DME	4	N	5	4	5	6	7	6	7	8	9	9

Student Experience of PredictED

Students who took part were asked to complete a short survey at the start of Semester 2 - N=133 (11% response rate)

Question	Group 1 (more detailed email)	Group 2
% of respondents who **opted out** of PredictED during the course of the semester	4.5%	4.5%
% who **changed their Loop usage** as a result of the weekly emails	43.3%	28.9%
% who would take part again/are offered and are taking part again	72.2% (45.6%/ 26.6%)	76.6% (46% /30.6%)

33% said they changed how they used Loop. We asked them how?

- Studied more
  - *"More study"*
  - *"Read some other articles online"*
  - *"Wrote more notes"*
  - *"I tried to apply myself much more, however yielded no results"*
  - *"It proved useful for getting tutorial work done"*
- Used Loop more
  - *"I tried harder to engage with my modules on loop"*
  - *"I think as it is recorded I did not hesitate to go on loop. And loop as become my first support of study."*
  - *"I logged on more"*
  - *"I read most of the extra files under each topic, I usually would just look at the lecture notes."*
  - *"I looked at more of the links on the course nes pages, which helped me to further my understanding of the topics"*
  - *"I learnt how often I need to log on to stay caught up."*

Did you change Loop usage for other modules?

- Most who commented used Loop more often for other modules
  - *"More often"*
  - *"More efficient"*
  - *"Used loop more for other modules when i was logging onto loop for the module linked to PredictED"*
  - *"Felt more motivated to increase my Loop usage in general for all subjects"*

One realised that Lecturers could see their Loop activity

"I realised that since teachers knew how much i was using loop, i had to try to mantain pages long on so it looked as if i used it a lot"

Module Average Performance Participants vs. Non-Participants

Average scores for participants are higher in 8 of the 10 modules analysed, significantly higher in BE101, and CA103

Subject	Description	Non-Participant	Participant
BE101	Introduction to Cell Biology and Biochemistry	58.89	62.05
CA103	Computer Systems	70.28	71.34
CA168	Digital World	63.81	65.26
ES125	Social&Personal Dev with Communication Skills	67.00	66.46
HR101	Psychology in Organisations	59.43	63.32
LG101	Introduction to Law	53.33	54.85
LG116	Introduction to Politics	45.68	44.85
LG127	Business Law	60.57	61.82
MS136	Mathematics for Economics and Business	60.78	69.35
SS103	Physiology for Health Sciences	55.27	57.03
Overall Dff in all modules		**58.36**	**61.22**

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Questions and discussion…

NIDL

DCU Ollscoil Chathair Baile Átha Cliath
Dublin City University

Contact details

- mark.glynn@dcu.ie
- glynnmark
- http://enhancingteaching.com