

Using Data and Benchmarking to Drive Performance: an institutional case study

Paul Johnstone
Head of Analytics, University of Warwick



Outline

- Warwick's Analytics Capability
- Research Performance
- Teaching Performance
- Summary

Warwick's Analytics Capability

- Originates from the 2006/07 strategy formulation exercise, introduced by new Vice Chancellor - initial focus on research
- Objective was to facilitate data-driven performance management of academics
- Use leading commercial software tools, all are highly rated by Gartner
- Required investment in highly skilled staff paid at the market rate use recognised analytics modelling techniques
- Effective collaboration between Strategic Planning & Analytics and IT Services has been critically important

Research Performance

- Linkage of internal data sets (Applications & Awards, Student Records, Publications, HR) into reporting model
- HESA data also included for external benchmarking
- Support from senior management essential in changing culture to enable highlighting of individual academic performance
- Access restricted to Heads of Department and nominees
- Metrics reporting embedded into process (Research Assessment and Performance Group)
- Annual review of all academic departments which informs future resource allocation

Research Performance

- Government distribution of £1bn of mainstream quality-research (QR) funding determined by results of periodic sector-wide research assessment exercises (RAE2008, REF2014, REF2021)
- Methodology has changed over the years but still based on peer-review of institutional submissions for units of assessment (subjects) against a 5-point quality scale
- Warwick ranked 7th in both RAE2008 and REF2014 and currently attracts £35m of QR funding annually

Research Assessment Exercise 2008

RAE 2008 - University of Warwick Sector Rankings by UOA

rae2008

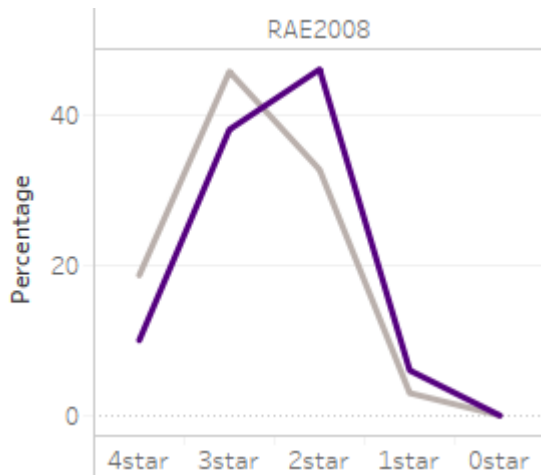
Unit of Assessment	FTE	% Submitted	Overall			Outputs			Environment			Esteem		
			GPA	Rank	%ile	GPA	Rank	%ile	GPA	Rank	%ile	GPA	Rank	%ile
04 - XXXXX	38.00	76.00%	2.40	20	37%	2.49	14	57%	2.00	24	23%	2.00	19	40%
07 - XXXXX	30.90	69.52%	2.70	10	64%	2.71	7	76%	2.71	12	56%	2.00	13	52%
14 - XXXXX	57.57	86.48%	2.45	30	45%	2.34	30	45%	2.73	27	51%	2.18	28	49%
16 - XXXXX	33.52	81.42%	2.75	1	100%	2.70	1	100%	3.00	6	82%	2.65	1	100%
18 - XXXXX	32.80	97.04%	2.90	9	77%	2.85	7	83%	3.01	16	57%	2.85	6	86%
19 - XXXXX	51.00	100.00%	2.60	20	51%	2.52	30	28%	2.86	16	62%	2.52	23	45%
20 - XXXXX	32.00	88.89%	3.15	2	97%	3.00	2	97%	3.70	1	100%	2.98	5	90%
21 - XXXXX	29.25	100.00%	2.85	7	86%	2.68	18	61%	3.53	5	91%	2.70	11	77%
22 - XXXXX	24.00	90.57%	2.95	4	90%	2.88	6	84%	3.24	4	90%	2.99	5	87%
23 - XXXXX	26.50	92.98%	2.75	29	65%	2.86	31	62%	2.46	46	44%	2.45	28	66%
25 - XXXXX	69.45	86.33%	2.85	10	82%	2.79	19	65%	2.59	16	71%	3.14	4	94%
34 - XXXXX	49.63	91.01%	3.35	3	94%	3.32	4	91%	3.45	4	91%	3.40	5	89%
36 - XXXXX	130.70	88.55%	2.95	5	96%	2.74	11	89%	3.40	4	97%	3.50	6	94%
38 - XXXXX	47.33	95.95%	2.40	30	55%	2.25	29	56%	2.90	25	62%	2.45	42	36%
39 - XXXXX	31.00	91.18%	2.65	7	90%	2.42	9	86%	3.40	6	91%	3.40	9	86%
40 - XXXXX	22.80	97.44%	2.65	18	75%	2.46	26	63%	3.20	13	82%	3.20	13	82%
41 - XXXXX	37.80	100.00%	2.70	8	82%	2.34	12	72%	3.80	4	92%	3.90	5	90%
44 - XXXXX	18.00	90.00%	2.65	17	78%	2.69	9	89%	2.60	27	64%	2.55	19	75%
45 - XXXXX	35.43	62.02%	2.65	8	91%	2.60	10	89%	3.05	8	91%	2.75	5	95%
52 - XXXXX	13.00	100.00%	2.80	2	97%	2.79	1	100%	2.91	9	73%	2.85	9	73%
53 - XXXXX	8.00	88.89%	2.40	16	44%	2.43	15	48%	2.26	22	22%	2.45	13	56%
54 - XXXXX	7.00	100.00%	2.85	3	87%	2.76	3	87%	3.30	4	80%	2.80	8	53%
57 - XXXXX	34.32	83.06%	2.95	8	92%	2.62	22	75%	4.00	1	100%	4.00	1	100%
59 - XXXXX	14.00	100.00%	2.85	4	87%	2.88	2	96%	2.60	14	43%	3.00	6	78%
60 - XXXXX	22.00	100.00%	2.65	19	53%	2.45	26	34%	3.70	10	76%	3.00	13	68%
62 - XXXXX	36.75	92.45%	3.00	2	99%	2.90	4	96%	3.50	18	79%	3.00	19	78%
64 - XXXXX	9.00	100.00%	2.85	12	63%	2.85	13	60%	2.50	14	57%	3.00	6	83%

Driving Improvement

- Major Science department showing significant under-performance in Outputs metric
- Analytics indicated differences in both the assessed quality of published articles and in the journals in which they were being published
- External research review of department commissioned by Deputy Vice-Chancellor
- One of the recommendations was to change the publication strategy to increase volume and target higher quality journals

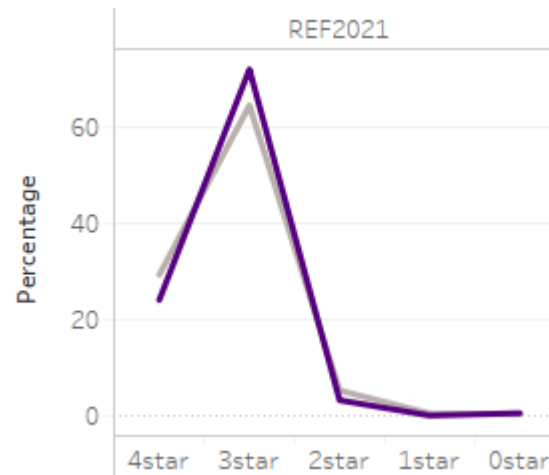
Measuring Improvement

- Comparing RAE2008 and REF2014



GPA	Rank	%ile
2.52	30	28

% of Articles in Top 5 ranked journals 30



GPA	Rank	%ile
3.19	6	88

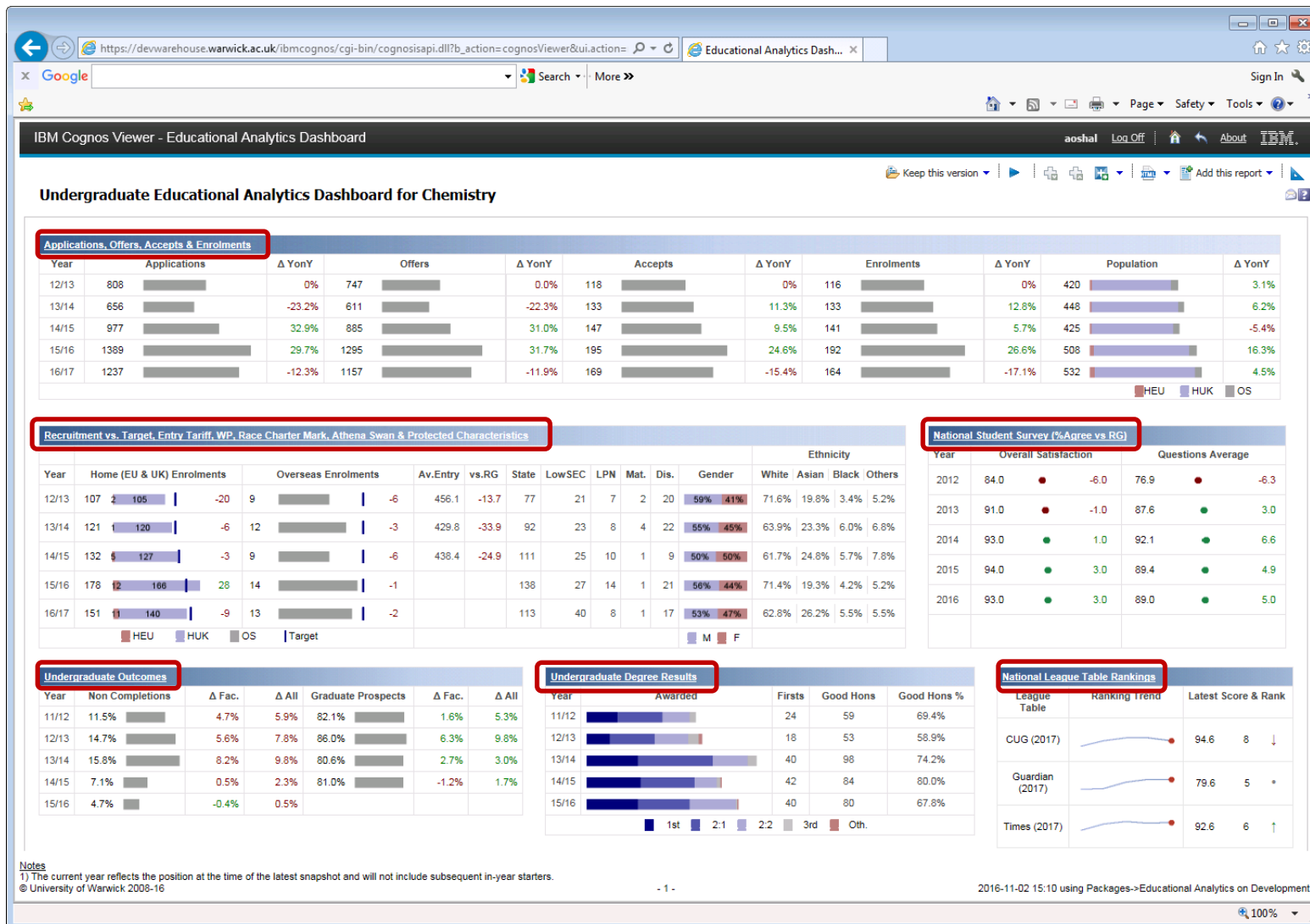
% of Articles in Top 5 ranked journals 45

Institution
■ Warwick
■ Top 5

Teaching Performance

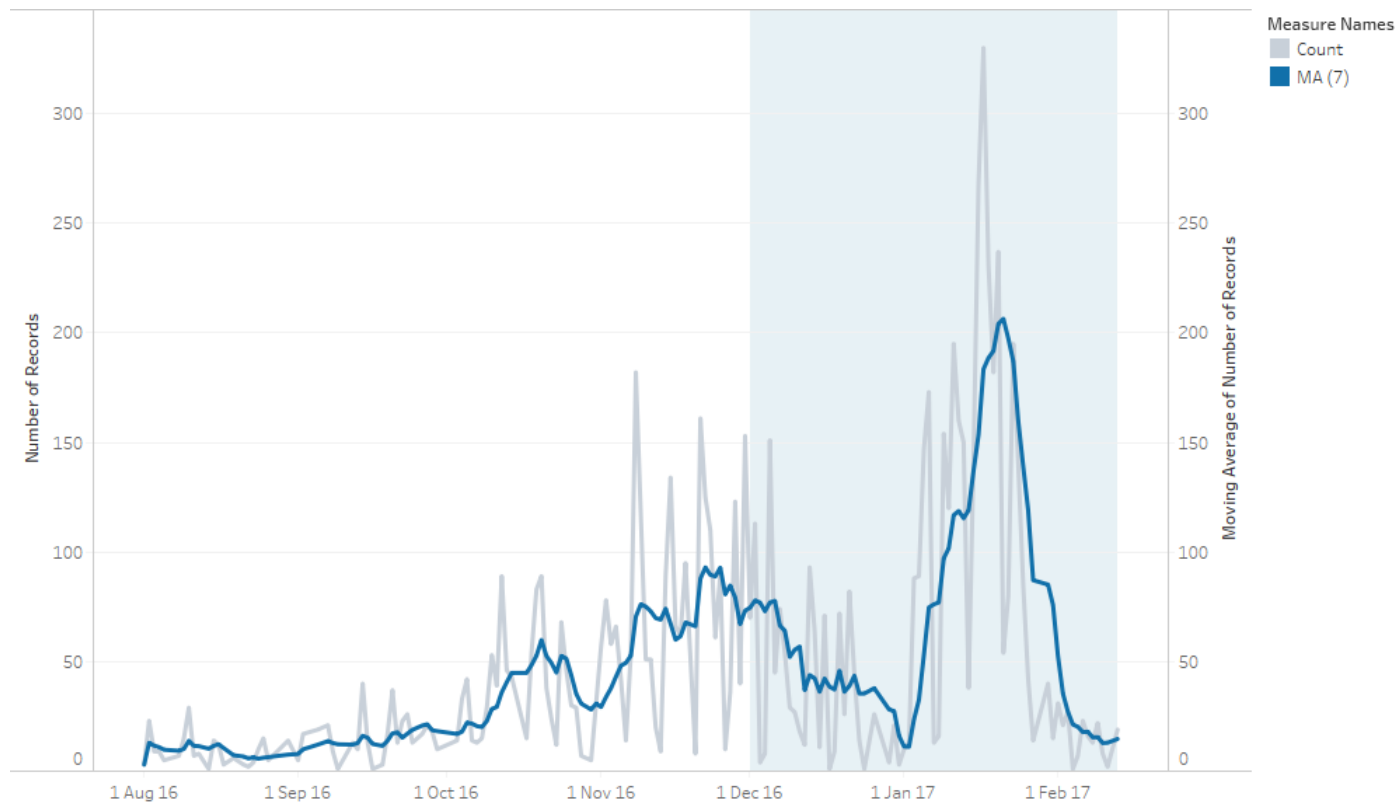
- Teaching Quality team responsible for periodic review of courses and departments
- Quality Assurance Agency (QAA) requirements and compliance with Professional, Statutory and Regulatory Bodies (PRSBs)
- Institutional Teaching and Learning Review (ITLR) is now run every 5 years across all academic departments – 37 reviews run over 2 weeks covering 786 courses and programmes
- Educational Analytics reporting embedded into review process, includes both internal and external benchmarking
- Recommendations fed back into University committees and Faculty engagements to implement and share best practice

Educational Analytics Dashboard



Educational Analytics Usage

- Heavy usage of reports throughout the ITLR



TEF Subject Performance

	A	B	C	D	E	F	G	H
1	TEF Subject Metrics Performance for XXXXXX							
2								
3								
4	NSS Subject Metrics				XXXXXX			
5					2014	2015	2016	Avg
6	XXXXXX	Teaching			84.0%	90.0%	92.0%	88.7%
7		Assessment and Feedback			78.0%	82.0%	82.0%	80.7%
8		Academic Support			82.0%	89.0%	87.0%	86.0%
9	Sector UQ	Teaching			93.0%	92.0%	92.0%	92.7%
10		Assessment and Feedback			78.0%	82.0%	77.0%	77.3%
11		Academic Support			91.0%	89.0%	91.0%	89.3%
12	Difference	Teaching			-9.0%	-2.0%	0.0%	-4.0%
13		Assessment and Feedback			0.0%	0.0%	5.0%	3.3%
14		Academic Support			-9.0%	0.0%	-4.0%	-3.3%
15								
16								
17	DLHE Subject Metrics				XXXXXX			
18					2012/13	2013/14	2014/15	Wt.Avg
19	XXXXXX	Positive Outcomes			91.6%	89.0%	89.2%	90.0%
20		Graduate Prospects			83.1%	82.8%	78.6%	81.6%
21	Sector UQ	Positive Outcomes			92.7%	95.1%	93.5%	92.7%
22		Graduate Prospects			85.2%	86.1%	83.5%	83.3%
23	Difference	Positive Outcomes			-1.1%	-6.1%	-4.3%	-2.7%
24		Graduate Prospects			-2.2%	-3.3%	-4.9%	-1.7%
25								
26								
27	<i>NB. Cells are only highlighted where the difference from the Subject Sector Upper Quartile metric is at least 3 percent</i>							
28								
29								
30		shows a positive difference						
31		shows a negative difference						

Summary

- Senior management support critical to adoption
- Analytics embedded into business processes can be used to drive performance
- Monitor usage to validate engagement
- Increased emphasis on evidence-based rather than committee-based decision-making
- Changes in the UK Higher Education landscape (TEF, LEO, Data Futures, etc...) will inevitably drive further developments