Learning analytics: the next chapter

The Universities of South Wales, Gloucestershire and Greenwich

#digifest20
The Story so far…

Martin Lynch
University of South Wales
JISC ‘Effective Learning Analytics’ programme

2015 JISC invites HEI’s to participate in co-design programme to provide a cost-effective solution for Learning Analytics service

<table>
<thead>
<tr>
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<th>USW</th>
<th>UoG</th>
<th>Greenwich</th>
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<tbody>
<tr>
<td>Joins programme</td>
<td>March 2016</td>
<td>March 2016</td>
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<tr>
<td>Pilot service commences</td>
<td>Sept 2017</td>
<td>Sept 2018</td>
<td>Sept 2018</td>
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<td>Live service commences</td>
<td>Sept 2018</td>
<td>Sept 2019</td>
<td>Sept 2019</td>
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## One project, different challenges

<table>
<thead>
<tr>
<th>USW</th>
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<th>Greenwich</th>
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<tr>
<td><strong>Strategically aligned with</strong></td>
<td><strong>Student Experience Plan - Personal Academic coaching</strong></td>
<td><strong>Technology to Enhance Learning Programme</strong></td>
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</table>
| **Expected deliverables** | • Provide effective visual dashboards based on data that demonstrably impacts on learner engagement/success (eg VLE usage, library usage, attendance monitoring)  
• Undertake early intervention for students either at risk of withdrawing through low levels of engagement  
• …to provide more meaningful information for USW for predictive modelling to aid recruitment, student retention and improved student success | • Help students succeed by giving them feedback on their study approach and engagement so they can control their learning  
• Provide learning data for Personal Tutors to inform their discussions with Tutees, and to provide timely prompts for intervention  
• Provide broad data on Modules to enable sharing of best practice | • Provide academic tutors and students with visualisations that reflect a student's engagement  
• Use that information to inform conversations that will support learners, helping them to reach their potential  
• Use measures of low engagement to identify students who may be at risk and provide relevant and targeted interventions  
• Review patterns of study at module and course level that can provide evidence of good practice and lead to improved course design |
One project, different resources

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<th>UOG</th>
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<tbody>
<tr>
<td>Project resource – people</td>
<td>1 FTE Learning Technologist</td>
<td>1 FTE Project manager</td>
<td>0.2 FTE Project co-ordinator</td>
</tr>
<tr>
<td></td>
<td>1 FTE developer</td>
<td>1 FTE Data coordinator</td>
<td>0.3 FTE data analyst</td>
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<tr>
<td></td>
<td>0.6 Project manager</td>
<td></td>
<td>0.1 FTE project management</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>0.1 FTE developer</td>
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<td></td>
<td>0.1 FTE staff support,</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>communications, training</td>
</tr>
<tr>
<td>Project resource - financial</td>
<td>£150k over 3-year duration</td>
<td>£100k over 3-year duration</td>
<td>£120k over 3-year duration</td>
</tr>
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</table>
Impacts and Challenges

All three institutions have now carried out a joint impact assessment. These are the main impacts from this analysis.
Impact – Staff

In USW’s staff questionnaire: “Using Data Explorer has helped me perform my role”:
• 49% either agreed or strongly agreed
• 30% disagreed or strongly disagreed
• 22% undecided

• The service felt more ‘efficient’, ‘convenient’ and provided the ability to ‘form a picture’
• Staff perceive that the data has value – it provides insight into their students, their tutees and the curriculum
• At this point in the change process, much of the value is potential not realised – maintaining engagement and confidence is critical
Personal Academic Coaches/Tutors (PAC/T)

Evidence-based conversations can now take place;

• "A richer picture of the student, Allows us to plan our conversations in advance, accurate - leading to more meaningful conversations with students"

• “Colleagues have fed back quite strongly, that availability of the data gives them a much more focussed meeting when the PAC meeting takes place because you are able to be quite specific”

• “Allows genuine conversations around engagement to take place. It gives an overall picture”
Impact – Students

Outside of receiving data-informed conversations by staff, Study Goal app is the change students would notice;

• The main use of the app by students was to record attendance with little use made of any of the other data or features and lack of clear reason to use it

• Students reported broadly positive comments with regard to its use as a check-in method

• At UoG students are generally supportive, making a connection to value for money. Lack of understanding of principles behind learning analytics: support vs sanction
Impact - project reveals unmet need and gaps

- Attendance monitoring
- Engagement monitoring as early warning for intervention – lots of manual processes to gain view of students at risk – escalation too late
- Patchy use of VLE, late assessment data
- At USW, project illustrated that PAC programme is inconsistently followed
- Curriculum analytics – business processes use instinct not insight
Impact – Predictive Analytics

USW; some queasiness regarding use of background characteristics so:

• Put data in a ’black box’
• Conducted validation exercise comparing weekly predictions for 63 courses with actual progression results
• Predictor only effective where data rich
• Where data is thin, results very poor

• UoG; no backing for prediction, potential to lose trust
• Greenwich; value is not yet proven so more careful testing required
The near future

James Hodgkin
University of Gloucestershire
New data streams on the way

- Turnitin (USW and Greenwich)
- Talis Aspire (USW and UoG)
- SirsiDynix (library data) (Greenwich)
- CRM (Greenwich)
- EZ-proxy and WorldShare Management (UoG)
- Panopto lecture capture (USW and Greenwich)
Co-design and co-development

- Attendance capture to attendance monitoring: **Check-in +**
  - Integration with the timetable
  - % of sessions attended per module
  - Late/early/notified/not required
  - Non-timetabled and optional events
- Tier 4 pilot
  - Using data to create reports for compliance
  - Based on latest Home Office guidance
- Curriculum analytics: proof of concept
  - Using the data to correlate with outcomes and programme design
  - Quality measures
Data Explorer continuous improvement

- TLCs
- Permissions
- Visualisations
- Granular configuration (Tiers)
- Trends/flags/weekly digest
- Notes: joined up with other systems?
Study Goal continuous improvement

- Check-in: where next? Biometrics, QR codes and mobile RFID scanners?
- Well being: sentiment analysis but what then?
- Students want access to their data
- Opt-out?
- Grade calculator/targets and competition
- Interaction between data explorer and study goal
- Clearer connection with daily studies beyond Check-in needed
- New round of engagement with students required
- Integrate with central student app

(Screen shot of Study Goal VLE activity)
Challenge 1: Data quality, protection and awareness

- Constant battle: Spanners, library usage, timetable and tutors
- Predictor: validation issues. Are we confident enough yet?
- Fast paced: changes to data shared with 3rd parties need to be picked up
- Right to data and right to be forgotten
- Do we have the right skills and processes if we want to expand our ambitions?
- From June 2018 USW delivered intensive data literacy training sessions: 50 sessions, 417 staff received quality staff development supported by e-resource
- From June 2018 Greenwich provided 30 plus training sessions and Faculty Directors of Student Experience have take a lead
Challenge 2: Communication

- Senior Buy-in
- Faculty meetings, Senior Tutors and "super users"
- Marketing, the SU and Student Reps
- Student guidance: total transparency
- But never enough:
  - Use the data to target "black spots"
  - Get Jisc involved with training materials and on-site support
  - MI for Executive Board
  - Communicate the impact: more research or connecting the dots from intervention to impact
Challenge 3: Capacity

- Moving from project to Business as Usual
- Strong progress enabled by resource
- USW have secured limited funding to maintain learning technologist for 1 year until Nov 2020
- UoG now have a permanent learning data developer and system "ownership" in their applications team but still so much to do culturally
- Greenwich have embedded learning analytics in the job role for our Learning and Teaching Project and Quality Co-ordinator
- Buy-in from the top have been very strong for all of us so far...
- Big 2030 strategic push at USW and an internal re-organisation so Learning analytics needs to re-establish its place and resources in the strategic picture
- LA will be a funded tool in the University Strategy being refreshed at Greenwich
- Is the strategic focus moving to curriculum and wellbeing?
Challenge 4: Data quantity

- VLE: low levels of adoption and engagement with current platform at USW
- Attendance: no policy at USW and only using standard Check-in
- Assessment: not much formative
- Library data: student borrowing is low and declining. How much e-resource usage are we missing?
The next chapter

Dr Christine Couper
University of Greenwich
More data vs more useful data

Additional datasets added after their usefulness has been demonstrated

Some potential datasets include:

- Reading lists and on-line books and journals accessed
- Equipment borrowed
- Engagement with sport and community activities
- Module teaching styles
- Attributes of the timetable
- Characteristics of the classroom - layout, temperature, location, capacity

As the digital strategy for HE develops there will be an increasing number of datasets. We need to be able to integrate these datasets quickly. Datasets must be tested to determine their usefulness before automated data gathering starts.
Timeliness and Accuracy

Accurate predictions rely in good data in almost real time

• Data streams updated on a regular cycle from almost instantaneous to overnight

• The supporting data framework must be robust and coherent eg who is teaching each module event; which classroom is being used; uniform language and code frame to categorise VLE tasks

• Data integrity to ensure that data streams are merged accurately

• Descriptive data reflects the lived experience of students and staff
Intuitive visualisations for staff and students

Complex data presented simply

Staff and students must have confidence that they understand what is being recorded and presented back to them

- Simple graphics
- Personalisation
- Easy access to more granular data
- Embedded explanatory videos
- Chat bots
- Links to further explanations
- Training
- Discussion forums
Evidence based developments

Developments will be based on insights from thorough analysis and review of Learning Analytics implementation to date and shaped by inputs from staff and students.

They will be designed to provide insights into:

- Curriculum development
- Personalised teaching
- Well-being
- Equality, diversity and inclusion
- Usefulness of interventions
- Classroom and campus design
- Effective on-line teaching and learning
Interventions will be shaped for maximum effect

- Who drives the conversations?
- How should we monitor impact?
- How do we keep students in the loop?

Joined up system where everyone with a need to know has access to the relevant up-to-date data and what is being done
10 years from now...

- Teachers as curators shaping content
- Student with personalised learning shaped around their lifestyles
- Much more digital – but properly designed and everything joined up
- Solid understanding of how to interpret data around student engagement and learning

Learning analytics will be key
Thank you

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