Supporting data-informed improvements in learning, teaching and student support in Wales

A proposal to HEFCW from Jisc in collaboration with Universities Wales

Summary

We propose a funded intervention to achieve a step-change in the ability of the Welsh HE sector to improve student retention and success through the implementation of data-informed approaches, particularly learning analytics. The programme of work will include a distinctive focus on improving assessment and feedback, and building in the student voice, in line with the recent HEFCW remit letter. It is proposed that HEFCW funds half the cost to HEIs of the Jisc learning analytics service over 2 years, with the institutions committing to continuing paying for the service for at least the subsequent year. Jisc will offer a discount on the list price of the service for the duration of the programme to facilitate this sector-level buy-in. HEFCW will also fund additional support from Jisc for the Welsh cohort of institutions, including on-site support with readiness and data wrangling, as well as coordination, networking events and a lessons learnt report.

Anticipated impact

Significant adoption of learning analytics across the Welsh HE sector offers the opportunity to progress towards many of Welsh Government's strategic priorities:

- The use of learning analytics to identify and provide additional support for those students at risk of dropping out or underperforming has been shown to reduce non-continuation rates by around 5%, supporting a national emphasis on learner outcomes and saving institutions money in lost fees.

- Learning analytics is also important to deliver on national priorities around widening access, since students from non-traditional backgrounds often have less family support in how to successfully navigate higher education, and therefore stand to benefit comparatively more from targeted signposting and support when their engagement data suggests they may be struggling, enabled through the use of learning analytics.

- Use of learning analytics also offers additional insights into factors and behaviours which are associated with differential outcomes, as well as helping institutions to assess the success of the interventions they put in place to support students. Welsh institutions could use learning analytics to better understand and support the engagement of part-time students, in order to help deliver on Wales' strategic commitment to part-time provision.

- Learning analytics can support student wellbeing by providing early flags of possible issues, such as when students stop attending classes or logging on. This is important for student outcomes and wellbeing, but also for social justice, since low income, low participation rates in Higher Education, first-in-family attendance at university and a high burden of mental illness are both correlated and unevenly distributed across universities. Institutions can use learning analytics, particularly as part of Jisc's national learning analytics service, to understand the needs of their student cohort and plan strategically to meet them.

- By furnishing course teams with information on how learners are interacting with the educational content and activities they are providing, and with their teaching and assessment, learning analytics can

enable improvements in teaching and learning on individual programmes, and supports institutions to track the impact of changes. Improving assessment and feedback practices is key in both deriving best use of learning analytics and in acting on its findings, and will be specifically supported by this programme, in line with Welsh Government priorities.

- The Welsh sector's history of collaboration will provide an excellent environment for this nation-wide implementation of learning analytics which will make Wales the most advanced UK nation in this area. This community of practice will support the sharing of lessons and enable the sector to accelerate the pace of adoption. Key within the community of practice are students: from the original work on the learning analytics code of practice in 2014 Jisc has engaged with students, and our implementing institutions recognise how important it is to understand students' perspectives on the use of their data and effective data-informed conversations about their studies.

Each participating institution will define impact measures for their implementation of learning analytics as part of the project initiation. These will be selected by institutions to be meaningful in their local context, but would be expected to include some or all of non-completion rates, module evaluations, Jisc student digital experience tracker results, and NSS scores.

Background

Student data collected by universities and colleges has huge potential to help organisations tackle big strategic issues such as improving learner retention, boosting attainment and providing a high quality learning experience. Jisc has been working with members since 2014 on solutions to help universities and colleges interrogate and analyse data effectively and to gain timely insights that will inform future strategy and help them maintain their competitive edge.

Jisc have developed a **Learning Analytics service** that provides infrastructure and a suite of software tools for students and staff. **Data Explorer** (docs.analytics.alpha.jisc.ac.uk/docs/data-explorer/Home) is a set of dashboards to help institutions get started on analysing the academic and engagement data collected via the **learning data hub** at the core of the service. The student app **Study Goal** (docs.analytics.alpha.jisc.ac.uk/docs/study-goal/Home) empowers students to track their own learning activity, view live attainment data, benchmark themselves against their peers and set personal learning targets.

The heart of our architecture is the Jisc **Learning Analytics Predictor** - a complex engine of big data calculations and derived algorithms (via machine learning) used to provide early alerts and predictions, primarily for enhanced student retention and attainment. We build institution-specific predictive models using historical data sources, live student study and engagement data to enable an institution's staff to provide focused, remedial student support in good time to achieve multiple benefits.

Our infrastructure interoperates with commercially developed solutions, so any institutions who wish to can use our analytics architecture and products in combination with elements from commercial (premium) suppliers or institutional systems. Such institutions can use our **Learning Analytics Purchasing Service** procurement framework to obtain such tools and services cost effectively from the vendors on our list of approved suppliers.

More than 30 universities and colleges across the UK are already using the Learning Analytics beta service, including 2-3 universities actively implementing in Wales, and we are currently inviting institutions to sign up to the full service, which starts on 1 August 2018.

Proposed programme of work

The proposed programme of work will support Welsh HE providers to take up, and make strategic use of, learning analytics. The core of the programme is a supported, and part-funded, implementation of the Jisc learning analytics service for all Welsh HEIs and for the two regulated FEIs, if they wish to participate. This would save the Welsh institutions a combined total of up to £280,000 if they all implement the service.

However, our experience of working closely with our pathfinder institutions has shown that implementation of learning analytics is primarily a strategic, cultural change project, not a technology project. It requires strategic buy-in at the highest level and a staged approach to implementation, beginning with a readiness and piloting stage including:

- Discovery phase and readiness assessment
- Cultural and organisational set-up, including legal, ethical and policy issues
- Design and ensure data processing agreements in place for small-scale pilots
- Data integration, including extract and transformation of data from VLE and student records system
- Evaluate small-scale pilots and plan implementation

Supporting institutions at different stages of readiness and implementation

This programme will provide additional Jisc support for all Welsh institutions who have not already done so to go through this readiness and piloting stage so that they are able to make an informed decision about the implementation of learning analytics. A free 3-month trial of the Jisc learning analytics service is available to enable them to pilot data integration and small-scale use.

For those Welsh institutions which have completed a readiness assessment or small-scale pilot but have not yet progressed their implementation, Jisc will provide support with reviewing the current situation and reassessing options to progress.

Those universities which are already implementing the Jisc learning analytics service will benefit from a reduced price for the service for two years, plus HEFCW funding half the cost of that reduced service fee.

HEFCW funding will enable Jisc to provide additional support to all Welsh institutions with implementation and data wrangling, helping to remove barriers, speed up effective uptake, and enable institutions to add new data sources and functionality.

Taking learning analytics forward into curriculum enhancement

Given the focus on assessment and feedback in HEFCW's remit letter, Jisc will provide additional consultancy support and advice to institutions on using data to improve learning, teaching and curricula, building on the pilot work already carried out with Turnitin, and on pilot Jisc workshops on data-enhanced curriculum design.

Sharing lessons learned

We will also support networking among the Welsh institutions and sharing of approaches and lessons learned. We will organise a number of face to face networking meetings during the life of the programme in order to support this, at least one of which will have a focus on assessment and feedback, and one on student voice. We will work with participating institutions to identify a suitable forum for jointly sharing their lessons learned at the end of the programme, such as through the Jisc learning analytics network, or at Digifest or connect more.

Outline of activities and costings

Preparation phase: May-July 2018

Programme implementation: August 2018-July 2020

Sustainability: all institutions which receive part-funding from HEFCW for the learning analytics service are expected to commit to continuing with the service in 2020-21 and 2021-22, meeting the costs themselves.

Item	Funds requested in 18-19	Funds requested in 19-20	Total funds requested
Part-funding of the Jisc learning analytics service for all Welsh regulated HE providers (theoretical total)	Up to £75,500	Up to £75,500	£151,000.
Likely estimate of cost of part-funding the analytics service, taking into account staggered take-up and trial periods	Around £50,000	Around £68,000	£118,000
0.5 FTE data implementer and project coordinator	£30,000	£30,000	£60,000
Consultancy support for analytics readiness and data-informed curriculum improvements	£32,000	£18,000	£50,000
Launch event, support of Welsh community of practice	£4,000	£1,000	£5,000
Maximum total if all providers engage for the whole period			£266,000
Estimated likely total			£233,000

University	LA service charge 2018-19 list price*	Discounted per year charge for sector deal	Total 2 year cost	Hefcw contribution	Y1&2 Institutional contribution	Y3 cost (estimate)	Total institutional contribution (Y1-Y3)
Aberystwyth	£ 18,842	£ 13,189	£ 26,379	£ 13,189	£ 13,189	£ 15,074	£ 28,263
Bangor	£ 19,832	£ 13,882	£ 27,765	£ 13,882	£ 13,882	£ 15,866	£ 29,748
Cardiff Met	£ 21,596	£ 15,117	£ 30,234	£ 15,117	£ 15,117	£ 17,277	£ 32,394
Cardiff	£ 35,453	£ 24,817	£ 49,634	£ 24,817	£ 24,817	£ 28,362	£ 53,180
Glyndwr	£ 15,818	£ 11,073	£ 22,145	£ 11,073	£ 11,073	£ 12,654	£ 23,727
Swansea	£ 31,424	£ 21,997	£ 43,994	£ 21,997	£ 21,997	£ 25,139	£ 47,136
U South Wales	£ 34,920	£ 24,444	£ 48,888	£ 24,444	£ 24,444	£ 27,936	£ 52,380
UW Trinity St David	£ 20,156	£ 14,109	£ 28,218	£ 14,109	£ 14,109	£ 16,125	£ 30,234
Total		£ 138,629	£ 277,257	£ 138,629	£ 138,629	£ 158,433	£ 297,062
Average p.a. price for colleges	£ 8,800	£ 6,160	£ 12,320	£ 6,160	£ 6,160		
Estimated total for two FEIs			£ 24,640	£ 12,320	£ 12,320		
Total list price cost for 2 years	£ 431,282						
Total discounted cost for 2 years			£ 301,897				
Total HEFCW contribution for LA service				£ 150,949			
Total savings to Welsh institutions					£ 280,333		
On the ground data and implementationsupport	0.5 FTE coordinator and data wrangler at £60k pa FTE inc on-costs		£ 60,000				
Consultancy - data-informed curriculum enhancements	10 days at £750 per day		£ 7,500				
Consultancy - learning analytics readiness reviews	£8550 for each of 5 institutions who haven't already done this		£ 42,750				
Launch event, support of welsh community of practice			£ 5,000				
Total requested from HEFCW for 2-year programme			£ 266,000	If all HEIs and the regulated colleges participate fully in the programme			

OU in Wales would need to be handled separately as learning analytics would be rolled out across the whole of the OU's provision rather than by geographical region. We are in contact with the Open University on learning analytics.

*List price in 2018-19 is already discounted to reward early adopters.