Developing a Strategy for the Use of Learning Analytics

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Abstract: Universities urgently require strategies for the use of emergent technologies such as learning analytics which can be used to support the delivery of their strategic plans. A Strathclyde strategy for the use of learning analytics, focused on the Institution’s commitment to delivering an outstanding student experience, was developed through institutional pilot projects, structures and processes. A project team consisting of Deputy Associate Principals (Learning and Teaching), Learning Enhancement Managers and a Project Officer oversaw the piloting of learning analytics in five diverse classes, capturing evidence of impact on learning, teaching and student success. The pilots involved data mining for comparison with academic-developed metrics, evaluating intervention strategies, and piloting the Jisc developed Study Goal mobile app. Evidence gathered showed the need for a data warehouse and automating elements of the process. Development work is required to upscale the pilot data capture methods. Whilst appropriately timed interventions were welcomed by students; some concerns were raised about providing this data directly to the student via an app. This evidence, combined with a wide range of literature, was used to inform the development of the strategy, written by the project team. Components of the strategy, and keys to success from this approach, will be discussed.

Key messages:

1. Develop a strategy to address the institution’s improvement areas for the use of data to enhance and support student learning.
2. Oversight and support from senior management is critical in fostering effective team working.
3. Keep the student at the heart of the project, and engage staff and students from across the institution in the development process.

1 BACKGROUND
The University of Strathclyde was founded in 1796, when Professor John Anderson, a professor of natural philosophy and a leading figure in the Scottish enlightenment, left a bequest to set up a place of useful learning that would allow the working women and men of Glasgow to improve their situation. Today, our collective vision for Strathclyde is as a leading international technological university, inspired by its founding mission as ‘the place of useful learning’, that makes a positive difference to the lives of its students, to society and to the world.

Learning Analytics is an emerging discipline that develops from, and can be facilitated by, the increasing use of technology in learning and teaching. The potential sources of relevant data are wide ranging and include: management information at institutional level, student records, virtual learning environment (VLE) usage, and library access. The list of potential data sources is extensive and growing as IT systems develop and institutional data expands with a corresponding increase in technical and computing capacity and infrastructure.

This presentation will discuss the University of Strathclyde’s journey of discovery with learning analytics and how it developed its strategy for implementing learning analytics, in line with the current University Strategic Plan and University Vision, and will discuss keys to success and lessons learned.
For some years, localised areas of the Institution such as the Business School, had started to examine the potential use of educational data which subsequently became available after the successful implementation of a University wide project to unify and create a single Learning Management System (LMS) for the Institution. The University had also partnered with MOOC provider FutureLearn, which was using the large amount of quantitive data available from a growing number of MOOCs, to reveal useful insights into the usage of video and behaviour of learners. In addition to the developments in these projects, centrally and at Senior Management level, understanding of the potential of learning analytics was growing rapidly. The OU’s recent review of emerging and innovative pedagogy reinforced the potentially high impact of learning analytics on student learning and engagement (Open University, 2014). This view was supported by studies published by Jisc (2014) and NMC (2013) which highlighted the significant potential of learning analytics. Strathclyde had recently invested in various technology based projects, such as Strathclyde’s system for academic management information was much improved through the work of the Institution’s Strategy and Policy Directorate and the SunBIRD system (Strathclyde University Business Intelligence Reports and Dashboards - a system based on QlikView), and through the previously mentioned unified LMS project to introduce Myplace (a Moodle-based LMS). These needed to be developed to provide greater feedback to staff (course leaders, teaching staff and course support teams). Thus the vision for using learning analytics for enhancing the student experience was fostered.

In order to examine and develop this vision, a Learning Analytics Strategy Group was established. The group consisted of two Deputy Associate Principals (DAP) for Teaching & Learning, and the Director, Deputy Director, and a Learning Enhancement Manager from Education Enhancement, which supports learning and teaching projects in the institution. A Project Officer was appointed to the Group to carry out the operational aspects of the project. The Group’s remit was to research learning analytics, sector developments, develop a project plan, and provide senior level oversight to the project to feed into the development of a robust institutional strategy. In essence, they were steering and providing oversight to the activities used to capture the evidence which would inform the resultant strategy document. This group’s responsibilities included:

- Overseeing the development of a strategy for the implementation of learning analytics at the University of Strathclyde
- Scoping current data sources and analysis tools existing within the University
- Researching the learning analytics field to identifying examples of effective use of learning analytics in the sector
- Designating data into three ‘data levels’ and formalising how each data level is used in the Institution
- Submitting an internal resource bid for project funding
- Participating in a Learning Analytics Readiness Assessment undertaken by Blackboard on behalf of Jisc
- Networking with other Institutions currently implementing or scoping learning analytics, such as the UK Open University and Jisc
- Identifying five pilot classes, one from each of the Institution’s four faculties in addition to a class provided by the Organisational and Staff Development Unit (OSDU), to implement a learning analytics approach to provide proof of concept evidence to inform the finalised learning analytics strategy
• Establishment of a Learning Analytics Steering Group of key stakeholders to oversee the progress of the project and function as the Institution’s on-going oversight of the use and development of learning analytics
• Recruiting a Project Officer, and supporting and steering the Officer in the management of the five pilot projects and the development of a learning analytics strategy
• Providing regular project updates to faculty, strategic learning and teaching committees and senior management
• Overseeing the mapping of how learning analytics can position itself to support, improve and provide evidence for key strategic documents produced by the University such as the University Strategic Plan 2015-2020, Scottish Funding Council Outcome Agreements, and Quality Assurance Agency for Scotland’s Enhancement Led Institutional Review

4 DEVELOPING THE STRATEGY
The strategy was developed by the Project Officer, Deputy Director and Learning Enhancement Manager from Education Enhancement, with oversight and guidance provided by the DAPs Teaching & Learning for the University. The responsibilities of the Learning Analytics Strategy Group, and the research, analysis, and conclusions resulting from these activities, provided the information and evidence for shaping the resultant strategy document. This included the data level models, information provided in the Jisc/Blackboard Learning Analytics Readiness Assessment, the results, conclusions and recommendations based on the five pilot classes, the mapping of learning analytics to key strategic documents, and the initial vision of the impact learning analytics could provide to improve to our student body. The components of the final strategy document will be discussed in the presentation.

5 KEYS TO SUCCESS AND LESSONS LEARNED
The most notable success to date can be attributed to be the guidance, support and enthusiasm from senior levels of the University, and the DAPs in particular. These colleagues grasped the potential that implementing learning analytics could have in addressing improvement areas for the University such as student experience, curriculum flexibility, assessment, feedback, retention, operational excellence, and staff development. Their oversight has been a key driver in ensuring the success of the project.

A second factor contributing to success has been the team approach adopted, both in terms of the Strategy Group but also with the Steering Group. The Steering Group includes DAPs, academics, education managers, the project officer, a systems developer, University Librarian, a Business Intelligence Analyst from within the Strategy and Policy Directorate who manages the SUnBIRD system and, critically, the Student’s Association Vice President Education, an elected student responsible for representing the study body on academic matters. This allows the Institution, along with other means, to ensure that Strathclyde students have a voice in determining the direction and implementation of the project.

Engaged staff was another key factor – the pilot classes were chosen to represent each faculty and OSDU, for their diversity, but also for their class leads. These faculty members were willing to dedicate time to ensure the pilot classes could run successfully, but also provide crucial feedback which helped shape the resultant strategy.

Another key to the success of the project was the principle that the student was kept at the heart of the project. Although the data analysis and the emerging technology is innovative and
exciting, it was more important to have the focus of the project, and ultimately the strategy, on the impact that it would have for each individual Strathclyde student.

Any lessons learned? In this area, with the correct engagement from senior levels, and the involvement of expert professional colleagues, teaching faculty and our students, it is possible to achieve a desired outcome by dedicating relatively small resource. However, it is critical to have clear oversight and support from senior management supporting an effective team working together to achieve the outcome.

REFERENCES
