Student-centred Learning Analytics: Saviour of the Day? Challenges of Tomorrow?

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Introduction

In the UK and Scottish higher education sectors, learning analytics are an innovative frontier for engaging students with all aspects of their learner journey. It utilises existing data and provides students and staff with greater information about a student's performance and the ways to improve. However, there are concerns within the sector about the ethics of learning analytics and the potential focus of information provided to students on prediction over enhancement.[1] Best practice, as articulated in Jisc's 2015 *Code of Practice for Learning Analytics*, is that student consultation is essential to the creation, development, implementation and evaluation of learning analytics.[2] Roberts, Howell, Seaman and Gibson's articulated that student consultation was key to the acceptability of future learning analytics systems, for students to feel that they still had the ability shape their own learning environment, and to ensure that students' learning remained central to learning analytics' development, rather than the aims of the institution.[3] To ensure that student voice is at the heart of future learning analytic developments at the University of Stirling, the Students' Union undertook a small-scale, single day data gathering exercise, called Thoughts On Thursday, to collect information on students' use of the current provision of learning analytics and what they would like to access in the future.

Context of 'Thoughts On' Campaign

'Thoughts On Thursday' is a short data gathering campaign that was first used by the University of Stirling Students' Union in AY2016/2017 under the name Feedback Friday. Born out of nominations for the Union's Student-Led Teaching Awards, RATE (Recognising and Advancing Teaching Excellence), Feedback Friday was run for a single Friday, once in Autumn 2016 and Spring 2017, in an effort to gather student opinions on the essay, assignment and exam feedback that they had been given. While the campaign was successful, its singular focus on feedback was restrictive. Over the summer of 2017, Feedback Friday was re-positioned as 'Thoughts On Thursday' to allow for flexibility in the educational issues that the campaign addressed.

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[1] For a more detailed discussion of the sector's concerns about the use of learning analytics, see: Chris Jutting, 'Universities are tracking their students. Is it clever or creepy?' *The Guardian*, 3 August 2016; Chris Parr, 'Lecturer calls for clarity in use of learning analytics' *Times Higher Education*, 6 November 2014; Niall Sclater, 'Snooping professor or friendly don? The ethics of university learning analytics,' *The Conversation*, 26 February 2014; Niall Sclater, 'Consent and the GDPR: what approaches are universities taking?' *Effective Learning Analytics*, 30 June 2017.

[2] 'Code of practice for learning analytics' *Jisc*, https://www.jisc.ac.uk/sites/default/files/jd0040_code_of_practice_for_learning_analytics_190515_v1.pdf.

[3] Lynne D. Roberts, Joel A. Howell, Kristen Seaman and David C. Gibson, 'Student Attitudes toward Learning Analytics in Higher Education: "*The Fitbit Version of the Learning World*"' *Frontiers in Psychology*, 7:1959 (2016).

Two 'Thoughts On' events were run during the 2017/2018 academic year. For Thoughts On: Learning Spaces, we trialled a two part event, which included an all-day tabling session in the Atrium, a central hub of student activity on the Stirling campus, and distribution of the survey at an Education Zone meeting, a forum of academic representatives. Due to staffing resources, we were only able to distribute the Thoughts On: Learning Analytics survey at an Education Zone meeting, rather than accompanying the meeting with a full day of tabling. Moving forward with the Thoughts On campaign, events will be organised to include both a day of tabling and the Education Zone meeting. Throughout each 'Thoughts On' event, students were given a single-page survey to fill out. The length of the survey was intended to enable students to quickly provide brief, but essential feedback on aspects of their learning experience.

Learning Analytics was a theme that the Students' Union identified, in partnership with the University, as a focus of developmental work that would be taken forward as part of our work on the new Enhancement Theme, *Evidence for Enhancement: Improving the Student Experience*. *Student Transitions*, the previous Enhancement Theme, was engaging, relatable and accessible to students, evidenced by our three student-led projects and widespread student engagement in our staff-led projects.[4] By guaranteeing that student voice is a central feature of our Enhancement Themes' work, we can ensure that the work that we are progressing enhances the student learner journey.

Thoughts On: Learning Information

Titled 'Learning Information', the survey was intended to be accessible for students who are unfamiliar with the current discussions and debates within the UK HE sector on learning analytics. It offered a single open response question ('Can you give some examples of the information you currently access about how you're progressing/performing?'), two Likert scale response questions ('How informed do you feel about how you're progressing/performing in your modules and degree programme?' and 'How satisfied are you with the information you are currently provided with about your progress/performance?'), and, finally, one matrix response question ('What information would you like to have about your learning').

The matrix response question made the following options available to students: how you're currently performing on your modules and across your degree programme; predictive information about your performance (i.e. what module grade or degree classification you're likely to achieve); how engaged you've been with your modules and programmes (i.e. hours spent on Canvas, in Library, in Lectures); suggestions on how to improve your performance within your modules and programmes; how your performance in a module, and across your degree programme compares to other students in your class; the ability to model specific scenarios (i.e. what marks do I need to achieve in these assignments to get a specific grade for the overall module); how engaged your classmates have been with their modules and programmes (i.e. hours spent on Canvas, in Library, in Lectures); and the ability to work with staff (such as Personal Tutors) to set targets/goals for you to work towards each academic year.

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[4] See the following links for information on the University of Stirling's institutional work:
http://www.enhancementthemes.ac.uk/institutional-work/institutional-work-year-1/university-of-stirling;
http://www.enhancementthemes.ac.uk/institutional-work/institutional-work-year-2/university-of-stirling;
http://www.enhancementthemes.ac.uk/institutional-work/institutional-work-year-3/university-of-stirling
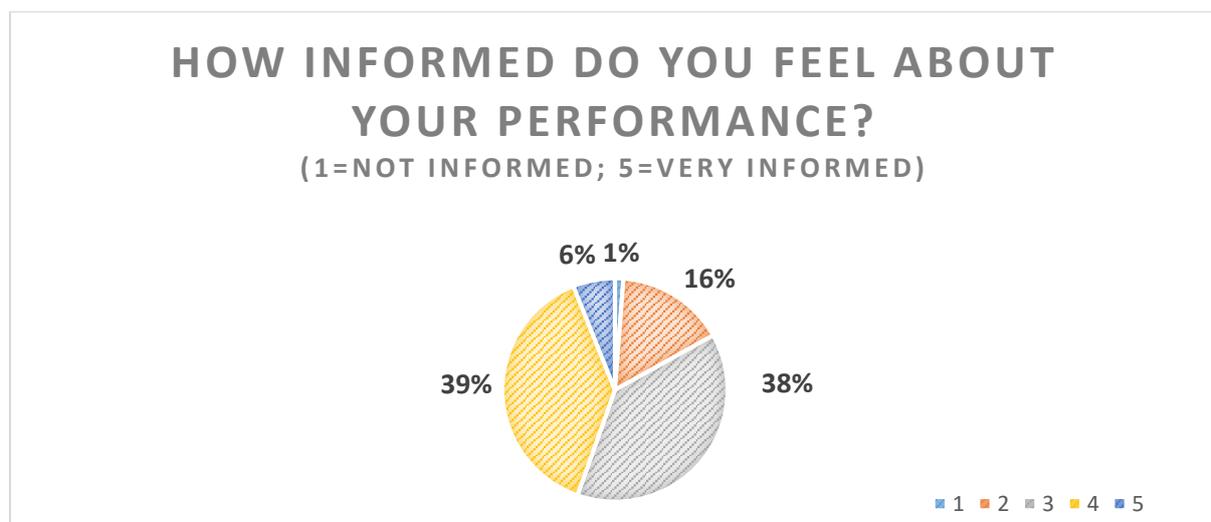
Demographics

We received seventy-seven completed surveys from our Thoughts On: Learning Information exercise. The below table shows a breakdown of respondents by degree-level and Faculty.

Faculty	Number of Postgraduates	Number of Undergraduates
Stirling Management School	11	13
Arts and Humanities	3	17
Social Science	0	13
Natural Science	1	13
Health Science and Sport	0	6

It is unsurprising that the greatest number of student respondents were undergraduates, rather than postgraduate students. As of the 2016/2017, the University of Stirling student population was made up of 8,585 undergraduate students and 3,480 postgraduate students.[5] Additionally, the Students' Union manages an academic representative system with approximately 650 undergraduate module representatives, compared to xx postgraduate programme representatives. While a greater number of undergraduate students' response is not surprising, we recognise that the minimal response from particular cohorts (see above table), specifically undergraduates studying in the Faculty of Health Sciences and Sport and postgraduate students studying in the Faculties of Arts and Humanities (FA&H), Social Science (FSS), Natural Science (FNS), and Health Science and Sport (FHS&S), means that our data is not representative of all students. However, the Thoughts On: Learning Analytics data gathering exercise has provided essential student feedback on the type information that they want about their learning experience and opportunities.

How Informed Are Students?

The survey asked two broad questions about students' experiences with the University's current provision of learning analytics, before asking the student to give some examples of the information that they currently access about their academic progress.

HOW INFORMED DO YOU FEEL ABOUT YOUR PERFORMANCE?

(1=NOT INFORMED; 5=VERY INFORMED)

6% 1% 16% 38% 39%

1 2 3 4 5

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[5] "2016/17 Students by HE provider, level, mode and domicile"(CSV). Higher Education Statistics Agency.

As the above table shows, students most commonly identified that they were informed of their academic progress. However, students identified that they neither agreed nor disagreed with the question as the second most common response, with only a 1% difference between the two responses. These results suggest that students recognise that they are given some information about their academic performance, but that they do not feel well informed by the information that they currently receive. While this question received a generally positive response, it is clear that there is more work to be done on communicating the learning information available for students to access.

To gain a better understanding of our students' perceptions of the information they're provided about their performance, the responses were broken down by faculty. There are some discrepancies between the below table and that of student demographics, as some students did not answer this question.

Scale	SMS	SS	A&H	NS	HS&S
1	1	0	0	0	0
2	2	3	3	4	0
3	4	6	10	10	2
4	14	2	4	9	3
5	3	1	0	1	0

The Stirling Management School (SMS) had responses ranging across all of the provided response options. However, 71% of SMS respondents identified that they felt informed or very informed about their progress. Beside SMS, no other faculty had a student identify that they were not informed about their performance. Three students in FSS and FA&H identified that they had not been well informed of their performance with four in FNS stating the same. In three faculties, the most commonly given answer was that students did not agree or disagree with the question. It is clear that across all faculties, there is a need to improve the University's communication about the learning information available to students and the potential benefits of engaging with that information.

What Information Do Students Use?

The survey asked those students who had identified that they were informed about the available to identify what information they accessed. The question was open response to enable students to provide any and all information that they accessed.

Information Accessed	Number of Students
Grades	19
Feedback	27
Box	1
Portal	4
Canvas	19
Turnitin	2
Discussion with Lecturers	5
Transcript	1
E-mail	4

Twenty-seven students identified that they accessed information about their academic performance and progression from the feedback that they received from their assessments. Interestingly, three students stated that they accessed information on their academic performance, particularly feedback, on external electronic platforms, like Box or Turnitin. While students understood that they could gain

insights into their academic performance through feedback, not all student were happy with the feedback that they had received. One student wrote that 'Feedback is not very constructive.' A second student wrote that 'It's always feedback on the particular essay and how you could improve the essay, and never know you could improve in the future.' These comments underscore a problem with feedback as students' only source of information on their academic performance or progression: not all feedback is constructive feedback. Ultimately, learning analytics must be accessible, informative and helpful for students to wholly engage with it.

'Grades' and 'Canvas' were the second most common response to this open question. Much like feedback, grades are an obvious and traditional way to gain information on your performance following the submission of assessed work. It is interesting that 'grades' and 'Canvas' both received nineteen references, as students' grades can now be accessed on Canvas. Given the University's implement of Canvas, as it new virtual learning environment, at the beginning of the 2017/2018 academic year, it is reassuring that students are engaging with the platform to access their learner information. There have been issues about a lack of consistent use of Canvas across faculties. One student commented that 'I can access information on Canvas, but not for all my modules.' Canvas should not be the only way that students can access information on their academic performance, especially if students' do not receive progress reports or feedback in Canvas throughout the semester. Another student commented that 'I only know about progression through Canvas end of semester exam results, but nothing else.'

A theme that pervaded the students' responses to the question 'Can you give some examples of the information you currently access about how you're progressing/performing?' was that it was no students currently engaged with predictive learning analytics. Instead, the students' identified that they engaged with information that was produced following completion of a piece of assessed work or, in many cases, at the end of a semester. Central to the our institutional work on learning analytics, as part of the current Enhancement Theme, was a review of the current provision of information that students are provided and access about their academic progress and performance, and an exploration of the types of additional learning analytics that students would like to access.

What Information Do Students Want?

The final question that the survey posed was about the type of information that students wanted to access. Students were provided with eight options and asked to choose any and all information that they would be interested in having about their learning.

What Information Would You Like to Have About Your Learning?	
How you're currently performing on your modules and across your degree programme?	68
Predictive information about your performance	57
How engaged you've been with your modules and programmes	45
Suggestions on how to improve your performance within your modules and programmes?	67
How your performance in a module, and across your degree programme, compares to others?	49
Ability to model specific scenarios, i.e. what marks do I need to achieve in these assignments to get a specific grade for the overall module	60
How engaged your classmates have been with their modules and programmes (i.e. hours spent on Canvas, in the Library, in lectures)	24
The ability to work with staff (such as personal tutors) to set targets/goals for you to work towards each academic year?	67

The more 'traditional' concepts of learning analytics and information received the most votes from the students who filled in our short survey. Students were most interested in receiving information about their current performance on their modules and across their degree programme. Our respondents were also really interested in receiving constructive feedback, which identified the ways that they could improve their performance, and additional opportunities to work with staff (i.e. personal tutors) to set targets and goals for their work each academic year. The large number of students, who identified that they would like to access information about their learning through the more traditional routes, suggests that students understand how to engage with these options and benefit from the information that they learn. It also emphasises a need to ensure that as the Scottish HE sector begins offering its' students access to greater amounts of learning analytics that these 'traditional' ways of gaining information continue to be developed and enhanced. The importance of receiving constructive feedback, assessment grades and ensuring that students can work with their personal tutors to set academic goals cannot be ignored or wholly usurped by innovative approaches to learning analytics.

Following the 'traditional' approaches to learning analytics, students were interested in accessing predictive information. The students' desire for predictive information, whether on the grade that they are likely to achieve or on modelling specific scenarios, reflects the desire of students to understand how they are doing on a specific module or programme at a specific moment in time, and what they might be able to achieve by the end of the module. It is exciting to see that our students do want to engage with some of the innovative approaches to learning analytics, but it poses other challenges. It will be important, if the University makes predictive learning analytics available to students, that there is a clear explanation of the information students are provided. We need to ensure that students understand that unlike the information that they receive through feedback and assessments, the information provided by predictive learning analytics presents a likely or possible outcome, rather than one that is certain.

Finally, information on a students' and their course mates' engagement with the VLE, the library or their lectures, or any comparison between a students' performance and those of their classmates were the least identified learning analytics by our respondents. The low responses for both of the engagement analytics options suggests that either students do not see a correlation between the number of times that they access or use resources, like the Library or VLE, and their success on a particular module, or that they do not see a benefit in the information about resource use. It is apparent, from the student responses, that our respondents are not interested in receiving anonymised information about their course mates' progression and performance. This reiterates a desire, as seen through many of the responses to the Thoughts On: Learning Analytics survey, for students to receive information about their individual academic performance and constructive suggestions for improvement. There is very little desire for or recognition of any benefit from receiving information about their course mates' performances.

Conclusions

There is much to be gained by expanding the University of Stirling's current provision of learning analytics. However, a concentrated expansion of provision, which reflects the desires of the student community, should be the focus of any initial development work around learning analytics. The Thoughts On campaign structure provides a unique opportunity to gather student feedback on issues and areas for development in their learning experience. It provides a snapshot of students' opinions on a relevant issue and ensures that student voice is at the centre of the developmental and innovative work that the University undertakes on the student learning experience. Thoughts On: Learning

Information and the information that it has provided is a good first step to engaging students with all of the institutional projects that are part of the current Enhancement Theme. However, it can only serve as an initial point of consultation and must be a stepping stone for further consultation with students and staff alike.