Ethical considerations in the use of student data: International perspectives and educators' perceptions

Hazel Jones
Office of Social Justice
University of Southern Queensland

As more emphasis is placed on the notion of "Show Me the Learning", institutions and individual staff are looking to the field of learning analytics to provide evidence of the learning that is happening. There is growing concern within the field that this evidence needs to be collected and utilised in ethical ways. However, there is a disconnect between national and international perspectives of the importance of institutional policy and guidelines regarding ethical use of student data, and the perceptions of academics about these guidelines. Although many universities are adopting such policies, results from a survey of academics suggest that such policy and guidelines are low on the ranking of factors that impact their current use and knowledge of learning analytics. Practical strategies are suggested to promote policy and guidelines, with appropriate support mechanisms that enable staff to embrace and adopt learning analytics through efficient, sustainable, and accessible processes.

Keywords: Ethical use of data, learning and teaching culture, learning analytics, PESTER plan, student data

Background

Learning analytics as a field has been building momentum over the last few years, providing an integrated way of gathering evidence of students' learning and taking action on insights gained. As this momentum has built there has been a corresponding increase in concern regarding ethical use of student data at international and national levels (Pardo & Siemens, 2014).

Throughout this paper *ethical use of student data* refers to the use of information collected by an institution about individual students and cohorts of students. This includes consideration of transparency of use, staff and student awareness of - and consent to - use of data, reasons for use, de-identification of data, options to opt-in or opt-out, use for staff performance management, who has access to the data and consequences of not taking appropriate action as a result of analysis of the data (Drachsler & Greller, 2016; West, Huijser, & Heath, 2016; Willis, Slade & Prinsloo, forthcoming). Student data can incorporate different elements at different institutions and encompasses any information that is collected by an institution, such as demographic data, admission and enrolment data, data from the Learning Management System, and information about usage of university services such as library and student services. Whilst academic research is covered by Human Research Ethics Committee processes and approvals, the same is not usually the case for use of student data as part of core business and normal teaching practice - yet the same principles need to apply, to help ensure student trust and the integrity of learning analytics in informing teaching practice (Willis et al., forthcoming).

Ethics and privacy issues have been important considerations for several years at the international level, with most discussion centering on the need for development of institutional policy and guidelines. Some notable examples are:
- Learning Analytics Community Exchange (LACE) Project has developed the DELICATE Checklist to implement trusted learning analytics (Drachsler & Greller, 2016).
- Learning Analytics & Knowledge conference for 2015 and 2016 included workshops and presentations on ethics and privacy
- Journal of Learning Analytics Volume 3, No. 1 2016 included a special section on ethics and privacy, the editorial of which discussed 22 challenges and 6 ethical goals for adoption of learning analytics (Ferguson, Hoel, Scheffel & Drachsler, 2016).
- JISC/CETIS in UK have developed a Code of Practice for Learning Analytics which sets out responsibilities for institutions (JISC 2015) and overview series (Kay, Korn, & Oppenheim, 2012)

- From an investigation in universities across 3 continents, Willis, Slade and Prinsloo (forthcoming) developed a "working typology of ethical approaches" (p.1) which considers 6 approaches of "learning analytics As.." across several categories and descriptors with the aim of providing "insight into the existing gaps in approval processes relating to both research and practice" to "encourage an awareness of the ethical issues relating to widespread adoption of learning analytics"

At the national level there have been two major Office of Learning and Teaching (OLT) funded projects which have included ethical considerations. West et al. (2016) report on the ethical considerations that were discussed by institutions and individual staff in their project and note that conversations regarding ethical principles are generally not yet occurring in institutions and propose an ethical decision making process for learning analytics. Colvin et al. (2015, p. 38) in their final report noted that there was a lack of discussion of these issues throughout their interviews and recommended that "a national conversation be initiated in which ethical considerations will be identified, framed and possible actions identified." An earlier report which the Society of Learning Analytics Research (SoLAR) completed for the OLT noted that "Establishing **guidelines for privacy and ethics** will require a transparent and broad ranging conversation between learners, faculty, institutions, government, and other stakeholders" (Siemens, Dawson & Lynch, 2013, p.29, their emphasis) It is hoped that this paper contributes to these conversations.

At the institutional level, many, (though not all), institutions are developing policy, guidelines and/or Codes of Practice around ethical use of student data. For example, Welsh & McKinney (2015, p CP241) reported on the development of a learning analytics Code of Practice at Charles Sturt University, Australia, noting that this was "an essential step in building trust between the institution and its students and staff through openness and transparency."

What is not clear though, through all of these discussions is how institutions are embedding these policies and guidelines into the learning and teaching culture nor how individual staff are responding to these high level initiatives. Results from a survey of academic staff at one regional Australian university are now discussed to consider one perspective on this aspect.

Academic Staff Survey

A comprehensive survey of academic staff at a small regional university was undertaken in 2016 asking questions about their current knowledge, use, and intentions with regards to learning analytics. The survey is one aspect of a larger ongoing study investigating the adoption of learning analytics at the university, which has been approved by the University of Southern Queensland (USQ) Human Ethics Research Committee (H15REA229) and was developed by the researcher for the purposes of this study. In 2015 USQ had a total student population of 28203, with 70.2% of these studying externally (online) and a further 16.4% in multi-mode, indicating the importance of the online environment. (USQ, 2015). The survey was distributed via email invitation from the Senior Deputy Vice Chancellor to 539 full and part-time academic staff with a teaching role and 94 responses were received with 62 completing all questions. Eight respondents indicated that they had no teaching role and were directed immediately to the end of the survey. Whilst these were small numbers of responses this is in the generally accepted range of at least 10% for online surveys and responses were received from across all disciplines and levels of academic staff. The survey will be repeated in mid-2017 to gauge any changes that have occurred and it is hoped that larger number of responses will be received for that survey.

This paper reports on the responses to three questions in this survey which were concerned with policy and guidelines. Spearman correlations were undertaken using SPSS for the questions reported on in this paper across the demographics of discipline groupings and academic level and these indicated very low correlations. For example, the response of *Lack of institutional guidelines* to the question of *Please indicate which, if any, of the following factors impact your current knowledge of learning analytics* resulted in a Spearman's rho of 0.047 with the question regarding in which discipline group staff teach and -0.047 with staff academic level. This suggests that neither discipline nor role affect responses and hence using responses from staff who did not respond to the demographic question is valid.

The three questions under consideration are shown in Figures 1-3 and compare the importance of policy and guidelines to other factors that impact on knowledge and use of learning analytics and the types of support needed by staff. The responses to these questions indicate that the provision of policy and guidelines is the lowest ranking factor across all three questions which suggests that staff, at this university at least, do not immediately consider policy and guidelines as important considerations when examining student data and are more concerned with lack of time and support. The results could be influenced by the fact that this institution does not currently have any specific policy or guidelines around ethical use of student data. Whilst these results all indicate that lack of institutional guidelines are the least important factor this does not infer that staff do not consider these guidelines important, more that they have less of an effect on their use of learning analytics than the other factors mentioned. These results could be used by institutions to inform development of training and

support for staff in regards to adoption of learning analytics and ethical use of student data through embedding information about these principles, and their importance, into workshops and support services.
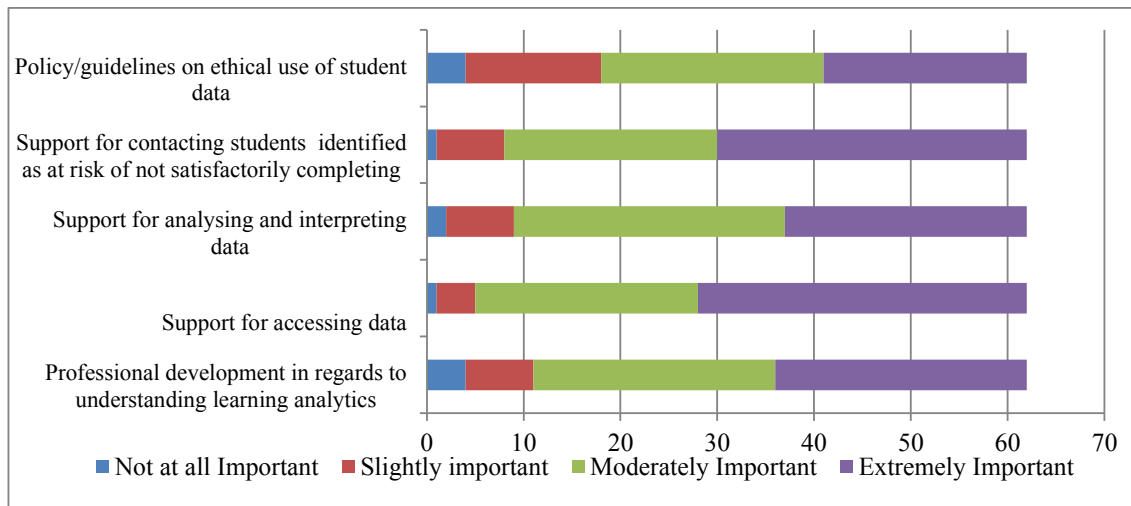

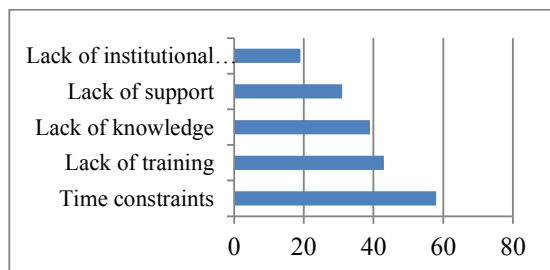**Figure 1: The importance of support in adopting learning analytics (n=62)**

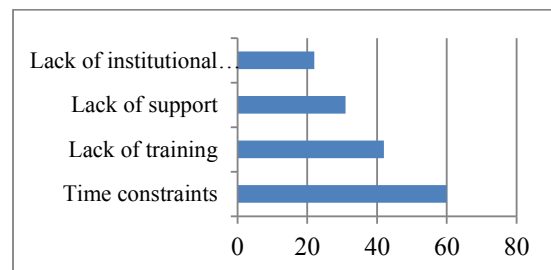**Figure 2: Factors which impact current knowledge of learning analytics. (n=68)**

Figure 3: Factors which impact current use of learning analytics. (n=68)

Discussion

Although much has been written on the implementation of learning analytics and frameworks for ethical use of student data at the institutional level, as shown in the examples earlier in this paper, there remains a gap in practical solutions of how institutions engage staff (or students) in adopting ethical practices. It is suggested that this needs to be the next level of conversation, as there has also been little consideration of how individual staff can adopt ethical practices. Those institutions who have successfully adopted such strategies could share their successes (and failures) to assist those institutions who are just embarking on the journey and the institutions who are still to embark on the journey could seek out mentors to assist them in the process. The Special Interest Group (SIG) for learning analytics in ASCILITE, along with state networks and ALASI (Australian Learning Analytics Summer Institute) could play pivotal roles in bringing these groups together and enabling these conversations.

USQ is an institution which is starting out on the journey of learning analytics, and is currently at the Aware to Experimentation Stages of the Maturity of Learning Analytics Deployment model (Siemens et al., 2013). The results from the survey provide opportunities for institutions to consider innovative ways of promoting the importance of understanding policy and guidelines around ethical use of student data, through incorporating discussion of the need for, and purpose of, relevant policy and guidelines in any training sessions and support materials.

An adaptation of the PESTER plan (Jones, 2008), as shown in Table 1 provides a structured pathway with some practical suggestions on how institutions can help bridge this divide. Whilst this plan was originally developed to assist institutions in the implementation of online teaching and learning, the same principles can be adopted to the implementation of learning analytics and ethical use of student data as all of the same processes can be applied. The plan offers examples of strategies and actions that can be implemented at institution, faculty or school level from the early planning stages through different types of support, to recognising and rewarding staff for their achievements.

Table 1: PESTER Plan for implementation of learning analytics and Ethical Use of Student Data (Adapted from Jones, 2008)

Stage of PESTER Plan	Barrier(s)	Strategies	Action
Planning and Promotion	Lack of strategic planning Lack of understanding. Unwillingness to change teaching styles Perception of teachers losing their power and control Poor articulation of vision re learning analytics	Development of strategic plan for implementation of learning analytics, including ethical use of data, aligned with faculty and institution strategic plans Dissemination of rationale to staff students and professional/ accreditation bodies through meetings, memos, emails Identification of benefits to all stakeholders	Open discussions at Faculty/School and Discipline meetings on why policy and guidelines have been introduced Bulk emails to all students explaining learning analytics and ethical use of data Inclusion of session on learning analytics during student and staff orientation
Education	Lack of understanding Skepticism/ Fear of the unknown	Exemplars of current best practice Models of implementation – different utilisation of online learning and technological tools based on insights from learning analytics	Open discussions at Faculty/School and Discipline meetings
Support	Lack of time Lack of support and acknowledgement	Inclusion of time for analysing data and student intervention in workloads Statistical, technological and learning design support	Templates/exemplars for communicating with students Simplified Ethics application processes, including provision of templates
Training	Lack of skill level / perceived ability to adapt to new tools	Workshops in learning analytics, data analysis and ethical use of data Centralised help desk Online help manuals and "How-To" documents	Faculty-specific training sessions Presentations of Best Practice Case Studies Workshops linking practical uses of technology tools to sound online pedagogies
Encouragement	Lack of time Much more emphasis on research	Raise profile of learning analytics and ethical use of data Provision of Teaching and Learning grants and awards	Show and Tell sessions presented by early adopters Support provided to prepare applications for grants and awards
Recognition and Reward	Lack of support and acknowledgement Much more emphasis on research	Recognition of time required to analyse data and implement interventions and changes Provision of Teaching and Learning grants and awards achievements in probation and promotion process	Develop guidelines for faculty workloads model and implement across faculty Achievements noted in faculty-wide email bulletins

Further Research and Conclusion

The survey discussed in this paper will be repeated in mid-2017 to investigate any changes in levels of use and knowledge over time and will be reported on as part of the wider study. It would be interesting to disseminate the survey to staff in other institutions, nationally and internationally, that are at different stages of widespread adoption of learning analytics and have implemented policy and guidelines on ethical use of data. Investigation of the effectiveness of conversations within and between institutions regarding how these policy and guidelines can be implemented and impact on learning and teaching culture would also be a beneficial area for further study.

It is widely accepted that the adoption of such policy and guidelines needs to be an imperative at all levels and institutions, what does need to be ensured is that these are developed and promoted widely with staff, and students, in a transparent and collegial approach so that they are embraced by staff and become ingrained into the learning and teaching culture. In this way a clear and evidence-based picture of students' learning will be able to be achieved.

References

Colvin, C., Rogers, T., Wade, A., Dawson, S., Gašević, D., Buckingham Shum, S. & Fisher, J. (2015). *Student retention and learning analytics: A snapshot of Australian practices and a framework for advancement.* Final report 2015. Retrieved November 11, 2015 from http://he-analytics.com/au/the-report/

Drachsler, H. & Greller, W. (2016). Privacy and Analytics – it's a DELICATE issue. A Checklist to establish trusted learning analytics. *6th learning analytics and Knowledge Conference 2016, April 25-29, 2016*, pp. 89-98 Edinburgh, UK. DOI: http://dx.doi.org/10.1145/2883851.2883893

Ferguson, R,. Hoel, T, Scheffel, M., & Drachsler, H. (2016). Guest Editorial: Ethics and privacy in learning analytics. *Journal of learning analytics, 3,*(1) pp 5-15. Retrieved from http://dx.doi.org/10.18608/jla.2016.31.2

JISC. (2015). *Code of practice for learning analytics.* Retrieved February15, 2016 from https://www.jisc.ac.uk/guides/code-of-practice-for-learning-analytics

Jones, H. (2008). Pestering staff into online learning: An Integrated plan for implementation. In *Hello! Where are you in the landscape of educational technology?* Proceedings ascilite Melbourne 2008. Retrieved from http://www.ascilite.org/conferences/melbourne08/procs/jones-h.pdf

Kay, D., Korn, N., & Oppenheim, C. (2012). *Legal, risk and ethical aspects of analytics in higher education (White Paper).* Retrieved from http://publications.cetis.ac.uk/wpcontent/uploads/2012/11/Legal-Risk-and-Ethical-Aspects-of-Analytics-in-Higher-EducationVol1-No6.pdf

Pardo, A. & Siemens, G. (2014). Ethical and privacy principles for learning analytics. *British Journal of Educational Technology 45*(3), pp 438–450. doi:10.1111/bjet.12152

Siemens, G., Dawson, S., & Lynch, G. (2013). Improving the quality and productivity of the higher Education sector: policy and strategy for systems-level deployment of learning analytics. *Society for learning analytics Research*. Retrieved March 22, 2015 from http://www.olt.gov.au/resource-improving-quality-and-productivity-higher-education-sector-2013

University of Southern Queensland (2015). *University of Southern Queensland Annual Report 2015.* Retrieved October 7, 2016 from https://www.usq.edu.au/about-usq/about-us/plans-reports/annual-report

Welsh, S. & Mckinny, S. (2015). Clearing the Fog: A learning analytics Code of Practice. In T. Reiners, B.R. von Konsky, D. Gibson, V. Chang, L. Irving, & K. Clarke (Eds.), Globally connected, digitally enabled. Proceedings ascilite 2015 in Perth (pp. CP:241-CP:245).

West, D., Huijser, H. & Heath, D. (forthcoming). Putting an ethical lens on learning analytics. *Education Technology Research and Development pp1-20* doi:10.1007/s11423-016-9464-3

Willis, Slade & Prinsloo (forthcoming).Ethical oversight of student data in learning analytics: A typology derived from a cross-continental, cross-institutional perspective. *Educational Technology Research and Development (Early Access).*

Note: All published papers are refereed, having undergone a double-blind peer-review process.