Self-control? Students' quantified self in the digital university

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Abstract

Discussions of 'big data' in Higher Education have focused on what the institution can know about its students, and its ability to act on their behalf. These discussions appear learner-centred, but continue to attribute agency to the institution. An alternative way of framing the use of data is offered by the quantified self movement. This focuses attention on the user, asking how technology creates new representations of the self, what these mean to them, and how it changes their relationships with others. This paper will drawn on this alternative framing to raise questions about the use of students' data, and about who could and should be expected to know about and to act on learners' experiences.

The idea of 'big data' in education has generated great excitement, and learner analytics offers visions of educational systems that are alive and responsive to the behaviours of learners, adapting to their needs and providing timely, corrective interventions for at-risk learners (Jayaprakash et al, 2014). Researchers have also discussed links between the quantifiable traces of educational practice and learners' development (e.g. Knight et al, 2014).

The vision underlying such approaches has been critiqued as the latest 'technical fix' for the problems of education, one which fails to ask important questions, whether these be about privacy, the blind spots in data, or learners' experiences of being predictively modelled in this way (Eynon, 2013). Arguably, the analytics movement can be seen as a new form of educational governance, regulating learners through the 'transactional politics' of their studies (Williamson, 2014). Such challenges build on well established critiques of online learning (Land & Bayne, 2002), which point to the way in which these can act as a digital panopticon, forcing learners to internalise the regulating 'gaze' of authority in order to conform to preconceived ideals of the 'good' learner. It also relates to wider debates about the role of the teacher, and the tendency towards the 'learnification' of education (Biesta, 2009).

However, Eynon's challenges (2013) offer the possibility of re-framing the use of 'big data' in education. Reflecting the contemporary policy emphasis in Higher Education on 'students at the heart of the system' (BIS, 2011), by shifting the locus of agency away from the institution and to the learner, it becomes possible to envisage systems in which learners are offered information about their educational performance, and use this to act in better informed ways. Such a re-framing draws in ideas of the 'quantified self', a reframing of 'big data' approaches that seeks to balance the collection of objective metrics data with the subjective experience of the impact of these data (Swan, 2013).

The quantified self movement suggests self-knowledge through self-measurement. However, as with so many technologies before this, the sense of excitement engendered by these possibilities risks leaving us blind to its shortcomings. As Rettberg (2014: 62) observes:

> Being able to measure something gives us the sense that we can control it. We can work to improve it [...]. Having measurements readily available can also make us forget about all the things we cannot measure.

Rettberg argues that such self-tracking tools act as forms of self-representation, but can only offer a fantasy of self-knowledge; as with other kinds of media, users need to develop an understanding of how such representations are created, how they can be read, and what their limits are.

The limits are severe in the context of education. It is technically possible to use the traces of transactional pedagogies to support reflective learning (Rivera-Pelayo et al, 2012). However, such approaches have yet to be deployed and studied empirically at a meaningful scale, and learners' experiences need to be explored – for example, is the 'gamification' of education motivational, or does it trivialize the experience for learners (Whitson, 2013)?

Sclater (2014) describes how current learner analytics systems rely on data from student information systems and virtual learning environments, supplemented by attendance records (sometimes collected manually) and tracking learners' use of security cards and computer logins. Such data are clearly useful, but far from authoritative; they track some educational behaviours and outputs, but cannot judge quality, and are blind to many of the educational activities that students undertake outside the campus (Gourlay & Oliver, 2013).

Since these representations are necessarily incomplete, the question then arises of who – if anyone – needs to fill out the gaps. With learner analytics, the 'gaze' is institutional; the quantified self movement suggests that the user should instead be the one who reads the representation. The areas where institutions are blind might be well known to the student; they may be able to complete the picture sufficiently well using information unavailable to institutional systems – such as personal experience.

What is not yet clear is how learners experience such representations. In the context of health, the quantified self approach has led to questions about the how we understand our bodies, both in terms of the 'visibility' of organs and systems and the relationship that we have with different health risks (Lupton, 2012). The creation of a 'data double', which can be scrutinized and shared with others, raises profound questions about privacy, and who is allowed to 'gaze' at what parts of an individual's technologically-mediated and distributed body. Analogous questions could be asked in educational contexts: what rights does the institution have to gaze at learners? Are there areas where the institution can reasonably be expected *not* to look? Where do the responsibilities of the institution to know the learner end, and where does the responsibility of learners to know themselves begin?

References

Biesta, G. (2009). Good education in an age of measurement: On the need to reconnect with the question of purpose in education. *Educational Assessment, Evaluation and Accountability*, 21 (1), 33-46.

BIS: Department for Business, Innovation & Skills (2011) Higher Education: Students at the Heart of the System. London: Department for Business, Innovation and Skills.

Eynon, R. (2013) The rise of Big Data: what does it mean for education, technology, and media research? Learning, Media and Technology, 38(3), 237-240.

Gourlay, L. & Oliver, M. (2013) Beyond 'the social': digital literacies as sociomaterial practice. In Goodfellow, R. & Lea, M. (Eds), Literacy in the Digital University: Critical Perspectives on Learning, Scholarship and Technology, 79-94. London: Routledge.

Jayaprakash, S., Moody, E., Lauría, E. Regan, J. & Baron, J. (2014). Early Alert of Academically At-Risk Students: An Open Source Analytics Initiative. Journal of Learning Analytics, 1(1), 6–47.

Knight, S., Buckingham Shum, S. & Littleton, K. (2014). Epistemology, Assessment, Pedagogy: Where Learning Meets Analytics in the Middle Space. Journal of Learning Analytics, 1(2), 23-47.

Land, R., & Bayne, S. (2002). Screen or monitor? Surveillance and disciplinary power in online learning environments. In Land, R. & Bayne, S. (eds), Education in Cyberspace, 165-178. London: RoutledgeFalmer.

Lupton, D. (2012) M-health and health promotion: the digital cyborg and surveillance society. Social Theory & Health, 10, 229–44. http://www.palgrave-journals.com/sth/journal/v10/n3/full/sth20126a.html

Rettberg, J. (2014) *Seeing ourselves through technology: How we use selfies, blogs and wearable devices to see and shape ourselves*. London: Palgrave Macmillan.

Rivera-Pelayo, V., Zacharias, V., Müller, L., & Braun, S. (2012). A framework for applying quantified self approaches to support reflective learning. Proceedings of Mobile Learning, Berlin, 11th-13th March, 2012, 123-131.

Sclater, N. (2014). Learning analytics: The current state of play in UK higher and further education. Bristol: Jisc. http://repository.jisc.ac.uk/5657/1/Learning_analytics_report.pdf

Swan, M. (2013) The Quantified Self: Fundamental Disruption in Big Data Science and Biological Discovery. Big Data, 1 (2): 85-99.

Whitson, J. R. (2013) Gaming the Quantified Self. Surveillance & Society, 11(1/2): 163-176.

Williamson, B. (2014) New Governing Experts in Education: Self-learning software, policy labs and transactional pedagogies. In T. Fenwick, E. Mangez & J. Ozga (eds). Governing Knowledge: Comparison, Knowledge-Based Technologies and Expertise in the Regulation of Education: 218-230. London: Routledge.