

Data Infused Teaching and Learning

Data is the new oxygen for 21st century learners. Outside the world of higher education, students are completely immersed in data, both as generators and consumers. They surf their personal data deluge with skill and finesse when they are inhabiting their online world of social media, gaming and connectivity. How many students, however, see data as a legitimate resource in their academic learning? How many lecturers unleash the power of data in their classrooms and lecture theatres? Do our classrooms and professional development programs prepare our students and staff for data-intensive research?

Enriching the teaching and learning experience with data has become increasingly an option in the past 5 years through a number of global trends. Australian research data is now available in ways which were previously unimaginable. Research Data Australia is the national window into Australian research data. Since its inception in 2009, it has aggregated over 40,000 data collection records from almost every Australian university and research data institution. Internationally, the open access movement has gathered strength, data repositories have made hidden data exposed, data journals are springing up across a number of disciplines, visualisations make even the most complex data accessible, and crowd sourcing and citizen science means that everyone can easily contribute to global datasets. It is now possible for students to access and reference datasets in the same way as they have traditionally accessed and referenced books, journals and online sources.

Teaching students to discover, use, manipulate, analyse, manage and create data, can help them push the boundaries of exploring their discipline. Data offers students a new horizon in their learning – being able to witness the birth of new knowledge (the dataset), then seeing that new knowledge analysed and applied (through a data journal or article with the underlying data accessible) and perhaps they can even derive their own new datasets, (through combining previously scattered datasets) and thereby contributing new knowledge to their field.

Data Infused Teaching and learning is underpinned by a number of factors. These factors often involve campus-wide collaborations with Academics, Librarians, IT departments and Educational Designers. Lecturers moving towards evidence based approaches and wanting to demonstrate the power of data driven learning, may need broader access to tools previously licensed only to researchers as well as reviewing the

way in which data-inclusive activities are designed in order to meet learning goals. Course convenors and Faculty Heads may need to consider skill building from First Year in order for students to be able to harness the full range of opportunities offered to them by openly available datasets.

Collection development Librarians will need to source appropriate resources for data-intensive courses (data journals, data portals, data repositories etc) and those on the reference desk will need to be data-aware in responding to reference queries. Those who develop and deliver information literacy programs may find they need to include data search strategies, data citation standards, and data management in sessions aimed at undergraduates as well as those aimed at postgraduates.

Data is no longer just the provenance of Higher Degree Research Students – data literacy is part of every student experience. This session will look at ways lecturers, librarians and IT staff can make teaching and learning in their institution “data infused”.

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