

A Badge of Honour: Recognising sustainable teaching principles with open badges

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AUT University is developing a certification checklist and support materials to encourage and acknowledge 'green teaching'. Green teaching includes using less resources (e.g., paper, energy, transport, etc.), making more use of online tools and activities, and including conservation and sustainability concepts in course content. Lecturers can earn a green teaching label for their course, which is displayed in the University's Learning Management System. This is designed to support a global sustainability imperative, and to align with a key strand in the University's strategic themes. As a part of this project we have also developed an understanding of 'open badges', allowing our users to earn a verified award that can be displayed in a variety of other online systems.

Keywords: sustainability, green teaching, energy conservation, open badges

Introduction

Concepts of conservation and sustainability ("development which meets the needs of the present without compromising the ability of future generations to meet their own needs." – p15, Brundtland Report, 1987) are a common concern across many aspects of modern life, as we contemplate the cumulative effects of resource depletion, global warming, and growing urbanisation (Brundtland, 1987). On the face of it, the awareness of sustainability in teaching practice might seem of little significance, but as educators there are many ways we can contribute.

At Auckland University of Technology (AUT), this work has been initiated and promoted by Dr William Liu from the School of Computer and Mathematical Sciences. In 2012 Dr Liu was awarded a Fellowship under the University's Learning and Teaching Development Fund (LTDF), which provided funding for time release, and resource support from the University's Centre for Learning and Teaching (CfLAT), for a project entitled 'Greener and Smarter Computing'.

The focus of this 2012 project was about material sustainability, in particular looking at energy usage. The outcomes of this project were a literature review on current best practice in Tertiary education, and a report to the University's ICT Services with recommendations on smarter processes for managing room lighting and heating, and power management of desktop computers. Following this research, Dr Liu has continued his interest in conservation by focusing on 'green teaching' under a 2013 LTDF grant, and further progressed with a 2014 LTDF grant.

Green Teaching

In essence the concept of green teaching builds on the work of the Center for Teaching, Research and Learning at the American University, Washington DC, which measures three components –

1. Reduction of paper use, through a wide range of activities involving online tools and systems
2. Reduction of energy use, such as turning off lights, heating, computers, etc. when they are not being used
3. Other issues, such as including sustainability topics within a lecturer's own teaching discipline, to raise student awareness

In the American University process, academic staff are awarded points based on their response to 25 items relating to component 1 above, 12 items relating to component 2, and 8 items relating to component 3, providing a total score out of 96. Based on the score, staff are allocated a green certification label, using a green apple symbol (see Figure 1), ranging from 1 to 4 (90+ points earns a four apples *gold* label).



Figure 1: Green certification label

American University report through their website that over 300 Faculty members have engaged in the green course certification, including over 100 in the past year, with approximately 20% achieving the Gold status.

Other models of certifying Green Teaching can be found (among others) at Howard University, where lecturers can be rated on a two-tier system (using a ‘thumbs-up’ label); and at Duke University, which appears to identify, on the basis of answers to 35 questions, courses and lecturers that require instructional design advice to better meet the ideals of green teaching. The University of Northern British Columbia has used a tool called the Sustainability Tracking Assessment and Rating System (STARS), which reports on the inclusion of sustainability content, and lists 202 courses that meet the standard. STARS was originally developed by the Association for the Advancement of Sustainability in Higher Education (AASHE).

Common themes in these projects are a similar combination of reducing paper use, saving energy through more efficient room usage and student travel, and embedding sustainability concepts and awareness in teaching (Cortese, 2003; Thomas & Nicita, 2002; Tilbury, 2004; Wals & Jickling, 2002).

Green Teaching at AUT

Auckland University of Technology has as one of its core strategic themes (theme 5), the following: **Continuous development and capacity building** – contributing to environmental sustainability through research, innovation and the practices and operations as a large organization (Strategic Plan 2012-2016)

Therefore, this project is seen as assisting in supporting the key strategic initiatives of the university. The drivers for promoting green teaching at AUT are at least three-fold:

1. Cost effectiveness in reducing travelling and printing costs for both students and the university as a whole;
2. An altruistic, ‘social responsibility’ aspect of doing every little bit that we can in protecting global resources and minimising pollution/global warming; and
3. Reducing the impact on our inner-city campus, resulting ultimately in reducing the need for bricks and mortar.

While the first of these objectives is immediately tangible and measurable, objectives 2 and 3 are significantly more intangible and long-term. It is an unproven expectation that by achieving the first objective we will necessarily contribute to the other two.

In participating in this process, a lecturer is expected to nominate an active AUT paper that they are teaching, as an example of their academic practice. The lecturer reflects on their use of such things as posting material online, conducting tests online, requiring students to submit assignments (and marking and returning these) online, and using virtual classroom or online meeting tools wherever possible or appropriate.

The project as currently designed and developed by the AUT Green Teaching Badges Team has three main components:

1. Completing the checklist quiz, which generates the appropriate level of green label for the nominated course;
2. Participating in an online Green teaching course to address any conceptual aspects that a lecturer feels they need assistance with. One of the activities in this Green Teaching course is to build an action plan using a provided template; and
3. Completing a self-review and reflection questionnaire, which will hopefully result in a higher level of green teaching qualification.

In the AUT project, gaining a specific level of qualification will generate two separate labels, one for the course and one for the individual profile. The course label is based on the theme of a green ‘twig and leaf’, where the

‘greener’ the course, the more leaves there are on the twig (see Figure 2). This label will show in a user’s course list within our Learning Management System (Blackboard), and we anticipate will initiate discussions between students and lecturers, especially where students are also enrolled in courses that do not have the sustainable label.

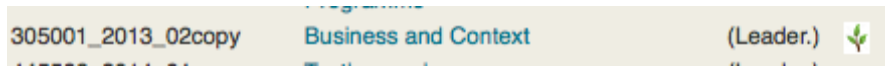


Figure 2: Course label of a green ‘twig and leaf’

The certification of the staff member has generated interest in applying the concept of *open badges* at AUT. In this project, open badges would allow academic staff to promote their green credentials more widely, outside of AUT. This development is in line with the desire to increase digital engagement for our staff as well as students.

Blackboard supports the awarding of open badges, through the module called Achievements. The awarding of an Achievement can be managed by a range of measures, including a mark in a quiz or the completion of various online course-based activities. Specific details and instructions for creating Achievements using Blackboard Learn can be found online.

Open Badges

The concept of open badges has developed over the past three years with much of the impetus coming from the emergence of Massive Open Online Courses (MOOCs) (Chauhan, 2014; Gibson et al., 2013). As open access to course participation has grown, so has the desire to gather together and display qualifications or course completion in a framework of the learner’s choosing (Abramovich et al., 2013; Glover & Latif, 2013; Goligoski, 2012). The Mozilla Backpack project has emerged as the key hub for gathering and distributing badges. A more detailed explanation of how open badges work can also be found on the Blackboard Help pages.

An essential component of open badges is the credibility of the ‘Issuer’. Without some evidence-based or transparent means of earning the badge, its value is difficult to determine. Viewing a badge on a person’s site (for example, on a blog, a Facebook or LinkedIn page) is of very limited worth if it is not possible to determine what was required to earn it. Therefore, systems such as Blackboard and Moodle have developed well-managed processes for defining and awarding badges to learners.

The badge can be linked directly from the Learning Management System under the learner’s account, identified by their email address, and the backpack allows a viewer to see the credentials and criteria from the issuing institution (see Figure 3).

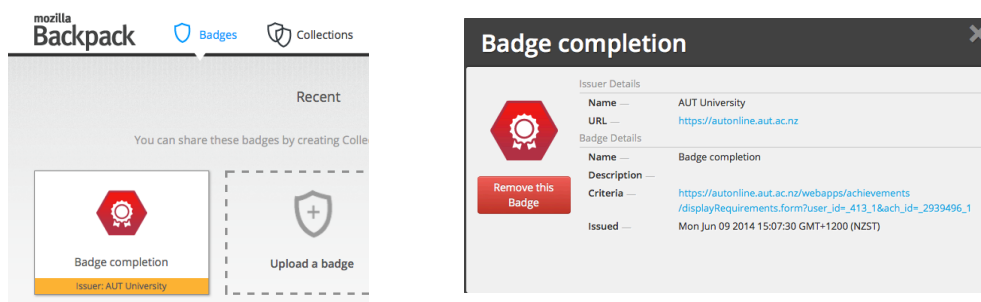


Figure 3: Backpack displaying credentials and criteria

Next Steps

While the concepts and processes of this project at AUT are reasonably well defined and understood, the implementation and promotion are less certain at this early stage. In promoting Green Teaching, we are appealing to the social conscience of our academic staff and students. In an environment where workloads for teaching, research and administration seem never to reduce, adding another process or expectation might be too much for many academics. However, we are optimistic that we can generate some publicity, interest and engagement over a period of time.

The prototype of the online green teaching badges course will be hosted on AUTonline (AUT's Blackboard). We will conduct user testing by inviting a group of academics for trials in the second semester of 2014. A future, more detailed report will present the research process, experience and final findings of introducing this exciting new program at AUT. For future development, the process and criteria for being a green teacher, and the green certification course may need further advancement and the processes simplified. Moreover, the current online course is only open to AUT registered learners at this stage, and we need to develop a more open solution to make it available to outside participants if we are to realise our goals of improving the sustainability of teaching practices collectively.

As a project team we still have some work to do in seamlessly automating the awarding of green labels to courses, and the concept of open badges will be entirely new to many. As a university we need to find ways to encourage and acknowledge those who make the effort and satisfy the criteria for their Green Teaching Badge. But the process of raising awareness of sustainability issues for both staff and students is the major objective, and will be seen as very timely by most.

Acknowledgements

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References

- Abramovich, S., Schunn, C., & Higashi, R. M. (2013). Are badges useful in education? it depends upon the type of badge and expertise of learner. *Educational Technology Research and Development*, 61(2), 217–232. doi:10.1007/s11423-013-9289-2
- Brundtland, H. (1987). *Our Common Future: Report of the World Commission on Environment and Development*. Retrieved from conspect.nl/pdf/Our_Common_Future-Brundtland_Report_1987.pdf
- Chauhan, A. (2014). Massive Open Online Courses (MOOCs): Emerging Trends in Assessment and Accreditation. *Digital Education Review*, 25, 7–17.
- Cortese, A. D. (2003). The critical role of higher education in creating a sustainable future. *Planning for Higher Education*, 31(3), 15–22.
- Gibson, D., Ostashevski, N., Flintoff, K., Grant, S., & Knight, E. (2013). Digital badges in education. *Education and Information Technologies*. doi:10.1007/s10639-013-9291-7
- Glover, I., & Latif, F. (2013). Investigating Perceptions and Potential of Open Badges in Formal Higher Education. In J. Herrington et al. (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2013* (pp. 1398-1402). Chesapeake, VA: AACE.
- Goligoski, E. (2012). Motivating the learner: Mozilla's open badges program. *Access to Knowledge: A Course Journal*, 4(1). Retrieved from <http://ojs.stanford.edu/ojs/index.php/a2k/article/view/381>
- Thomas, I., & Nicita, J. (2002). Sustainability Education and Australian Universities. *Environmental Education Research*, 8(4), 475–492. doi:10.1080/1350462022000026845
- Tilbury, D. (2004). Rising to the challenge: education for sustainability in Australia. *Australian Journal of Environmental Education*, 20(2), 103-114. <https://doi.org/10.1017/S081406260000224X>
- Wals, A. E. J., & Jickling, B. (2002). "Sustainability" in higher education: From doublethink and newspeak to critical thinking and meaningful learning. *International Journal of Sustainability in Higher Education*, 3(3), 221–232. doi:10.1108/14676370210434688

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