IMPLEMENTATION STORIES

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A digital badge for responsible conduct of research

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From interviews with
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Introduction

This good practice story focuses on a specific aspect of 'developing support for FAIR data': the work at University College Cork (UCC) in Ireland on issuing a digital badge to aid the recognition of skills gained in Responsible Conduct of Research. Badges have been in use at UCC since 2017. For the specific context of the Responsible Conduct digital badge, it is useful to know that the national research funders demand that researchers receive training in research integrity. The Irish online course Epigeum is the entry level course for research integrity training. The UCC digital badge in the Responsible Conduct of Research, developed in 2019, includes and builds on Epigeum and gives UCC researchers the opportunity to expand on the minimum required training.

FAIRsFAIR recommendation

"Develop and implement models for coordinating and supporting data stewards and research software engineers"
FAIRsFAIR Recommendations on practice to support FAIR principles

FAIRsFAIR recommendations deliverable - https://doi.org/10.5281/zenodo.3924132

■ Approach taken

The digital badge in Responsible Conduct of Research involves three units at University College Cork (UCC): the office of the Vice-President Research Innovation (OVPRI), the UCC Library, and the Clinical Research Facility – Cork (CRF-C). Each of the collaborators was already providing training and resources in their own domain, but realised that a more holistic approach would be greater than the sum of its parts[1].

The first badging approach at UCC started in 2017 and led to digital badges being awarded for trainings in different areas. "A digital badge or micro-credential is a way of recognising and rewarding learner effort outside of traditional learning channels"[2]. It is a quick way to respond to the need for making learning achievements visible, and it is relatively easy to make new badges. There are more than eighty badges available in UCC at the moment[3]. Since the start of this initiative, some badges were available for students and some for staff; sometimes they were awarded to individuals and sometimes to a team. Delivering a badge depends on meeting minimum standards in terms of achieving the intended learning outcome and a minimum number of hours spent on the training.

Epigeum is the Irish National Research Integrity Forum training for early-career researchers, and refresher training for experienced researchers[4]. OVPRI staff realised it would be useful to build on the introductory Epigeum course to reflect researcher and support staff needs at UCC. The aim was to expand this course to also cover research data management and reproducibility. A digital badge would again be relevant as a token that signals the badge holder has successfully completed the course.

Because of the overlapping interest in data management, OVPRI reached out to the library's research data coordinator, Aoife Coffey. They recognised that different groups and disciplines have different perspectives on data management, just as the measures needed to ensure research integrity vary from discipline to discipline. This led them to aim for tailoring the content to disciplines, for researchers at all levels from PhD to Principal Investigator. Digital badges could take things a step further.

The research data coordinator subsequently involved UCC's CRF-C, represented by Brendan Palmer. As the latter points out, as a biostatistician he is "on the receiving end of bad data": the consequences of poor data are all too clear, and efforts to remedy this are worthwhile.

Resting on these three units, then, a fresh approach started in early 2019 with a series of workshops that address research integrity, data management and FAIR principles, and reproducible research. This approach still continues. The organisers contact research teams and project groups to participate. Aoife Coffey speaks in advance with principal investigators (PIs) about current practices and puts a lot of effort into tailoring the content to their domain, to make the workshops as relevant as possible. The series of workshops also offers much opportunity for discussion and questions. The digital badge is awarded to individuals when they fulfill three conditions: completing Epigeum, active participation in a series of three workshops, and doing a reflective exercise about any topic in the course[5].

1. http://dx.doi.org/10.33178/LC.2019.03
2. https://ukrio.org/news/guest-blog-digital-badge-in-responsible-conduct-of-research-at-the-university-college-cork-ireland/
3. https://www.ucc.ie/en/digital-ed/training/digital-badges/awarded/
4. https://www.ucc.ie/en/research/support/integrity/epigeumonlineresearchintegritytraining/
5. For more information: https://www.ucc.ie/en/research/support/integrity/digitalbadge/

Course materials and course format

There was no underlying curriculum framework for the new course materials. Instead, Aoife Coffey was already familiar with, for instance, FOSTER training resources[6] and she developed many FAIR-related materials herself, to ensure the relevance for the local teams. As many trainers do, she started with slide decks and moved on to videos and reading references. The elements of the data management plan (DMP) provide a structure for the training approach, in particular the Science Europe DMP template[7], which is also adopted by Irish research funder Health Research Board (HRB) to define what they require from funded projects[8].

Currently Aoife Coffey uses widely applicable course materials, with tailored materials inserted. In 2019, the FAIR principles were still under the radar, but they are more established now. Accordingly, the content of the course has also changed, through the increased experience of the organisers and trainers.

Brendan Palmer uses the course presentations when talking with students and groups about reproducibility and his own daily practice as a biostatistician. The presentations work quite well for an audience that is familiar with quantitative research; he observes that it is harder in a qualitative audience, which suggests that more tailoring of course materials might be useful.

In the near future it would be ideal to have more online materials that workshop participants can study themselves, such as 5- to 10-minute videos, followed by discussions in person. This format, which can be considered as "flipping the classroom"[9], is expected to lead to more engaging conversations and a better use of the group's time.

The organisers still approach research teams and project groups, but have also started to contact colleges where individuals who are interested can sign up. For these courses the content will probably remain the same, but course delivery and interaction may need to change.

The digital badges

Within UCC, digital badges are commonly used and therefore well recognised. Overall, there have been 86 badges awarded at UCC[10]. A Digital Badges Sub-Committee is responsible for the oversight, strategic development and implementation of policies and procedures related to the issuing of digital badges by UCC. It must also formally approve proposals and validated earners for the issuing of UCC digital badges[11].

The badge is valid for three years. When amending the badge (for the first time), Aoife Coffey will ask the Digital Badges Sub-Committee for approval of the core elements of the badge. In addition, annual reporting is required about the number of applicants and awarded badges.

In 2019, more than 100 people attended the Responsible Conduct course; 85 of them fulfilled the requirements and earned the badge. In 2020, despite the COVID-19 restrictions, there were still about 50 course attendants, 20 of whom received the badge (completing the course is not mandatory).

Most badge holders use it in their funding applications, as evidence of their competences. The badge can also be added to one's LinkedIn page and email signature, where they link to a certificate providing more information, such as the criteria for the badge and the expiration date.

The UCC Digital Badge in the Responsible Conduct of Research is offered to researchers who complete a tailored, blended learning course on responsible, reproducible research. The digital badge aims [to] enhance Research Integrity awareness among the research community in UCC by promoting frank discussions about responsible research. (…) The badge is available to researchers at all levels and career stages from PhD to PI.

Source:
https://libguides.ucc.ie/researchdataservice/trainingandsupport

6. https://www.fosteropenscience.eu/
7. Science Europe (2021). Practical Guide to the International Alignment of Research Data Management - Extended Edition 2021. https://doi.org/10.5281/zenodo.4915861
8. https://www.hrb.ie/
9. See e.g. https://evolllution.com/revenue-streams/distance_online_learning/audio-flipped-classroom-redefine-role-educators-10-years
10. https://www.ucc.ie/en/digital-ed/training/digital-badges/awarded/
11. https://www.ucc.ie/en/academicgov/secretary/council/academic-council-handbook/academicdevelopmentandstandardscommittee/digitalbadgessub-committee/

Supporting changes in practice

At the start of the Responsible Conduct of Research course there was considerable resistance. It is difficult for people to change their ways of working. However, by taking an open and learning approach, the organisers and trainers overcame this resistance. They report how important it was to avoid a heavy-handed presentation about e.g. the 'reproducibility crisis'[12] and instead to ask researchers how they could support them.

Nowadays, all national funders in Ireland require a data management plan and increasingly journals request the underlying data along with a publication. Thanks to this, researchers' awareness of responsible research conduct and FAIR data management has increased, which in the past year led to more interest in the course topics.

Impact

In addition to the number of Responsible Conduct digital badges issued, and the fact that badge holders actually use them, the course organisers perceive other positive effects. Their efforts to tune the course to the practice of participants, as well as the discussions during the course, have taught them much about research practice and FAIR, and broadened the organisers' networks. Conversely, researchers who have participated now seem to contact support staff more and earlier in the process. In other words, the support offer is more visible.

Doing this collaboratively with three units from across the university has the large benefit of communicating the same information and goals from different perspectives. This prevents ambiguous or confusing advice. UCC's support structure is also more aware of when and why to refer a researcher for help, and to whom they should be referred.

Impact outside UCC is visible in the interest that their experience with badging stimulates. It is innovative and the data coordinator has presented about the badging process at conferences[13].

12. See e.g. Fanelli, D. (2018). Proceedings of the National Academy of Sciences 115 (11) 2628-2631; first published March 12, 2018. https://doi.org/10.1073/pnas.1708272114
13. See e.g. https://www.slideshare.net/conulacil/a-coffey-conultamplseminar2019