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Published in:
DigCurV 2013: Framing the Digital Curation Curriculum

Publication date:
2013

Citation for published version (APA):
Higgins, S., & Bunn, J. (2013). Mainstreaming Digital Curation: An overview of activity in the UK archives and records management profession. In *DigCurV 2013: Framing the Digital Curation Curriculum : Proceedings of the Framing the Digital Curation Curriculum Conference Florence, Italy, 6-7 May, 2013* (CEUR Workshop Proceedings; Vol. 1016). CEUR Workshop Proceedings. http://ceur-ws.org/Vol-1016/paper23.pdf

Mainstreaming Digital Curation

An overview of activity in the UK archives and records management profession

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Abstract— **This paper seeks to describe recent moves to address the need for digital curation training from within the UK archives and records management profession. It outlines how such training has been included within established archival education programmes, at Aberystwyth University and University College London, as well as discussing moves by the recognised professional body, the Archives and Records Association, to address the issue of providing digital curation training to existing professionals, as part of their continuing professional development (CPD).**

Keywords—**Archives and records management education, continuing professional development, digital curation.**

I. ENTERING THE UK ARCHIVES AND RECORDS MANAGEMENT PROFESSION

Currently in the UK the main route into the archives and records management profession is the completion of a qualification accredited by the UK and Ireland's professional body, the Archives and Records Association (ARA). Such qualifications predominately require the completion of a postgraduate university course, although the Society of Archivists (one of the three predecessor bodies to the Archives and Records Association) did run its own distance learning Diploma course from 1980-2001. Accredited courses in the UK and Ireland are currently run by Aberystwyth University, University College Dublin, University College London, University of Dundee, University of Glasgow, University of Liverpool and the University of Northumbria at Newcastle. This paper initially focuses on digital curation training at two of the universities at which ARA accredited courses currently run; University College London and Aberystwyth University.

University College London (UCL) was one of the first UK universities to offer an academic qualification in archival studies, with a course being established in 1947. The current programme is known as the Cert/Dip/MA in Archives and Records Management (the Certificate is not accredited by ARA) and is based within the Department of Information Studies, which also runs programmes in librarianship, publishing and digital humanities.

Aberystwyth University's predecessor body (University of Wales, Aberystwyth) established its Archive Administration programme in conjunction with the National Library of Wales in 1957. Since 1997 a separate degree in Records Management has been offered to enable students to specialise in the more business orientated aspect of the profession [1]. Distance learning provision for Records Management started in 1999 followed by Archive Administration in 2002. Currently three courses embrace the archives and records management disciplines and are based in the Department of Information Studies: Cert/Dip/MSc Econ in Archive Administration; Cert/Dip/MSc Econ in International Archives, Records and Information Management and Cert/Dip/MSc Econ in Information Governance and Assurance. (The Certificates and the Dip/MSC Econ in Information Governance and Assurance are not accredited by ARA). The latter two can only be taken through distance learning, while the first can be undertaken either full-time on campus or through distance learning. The department also offers courses in information management and library studies.

II. UNIVERSITY COLLEGE LONDON

The archives and records management programme at UCL constantly seeks to keep up to date with emerging practice in the field, and so by 2010, the question of dealing with records in digital form pervaded much of the existing teaching. This very interweaving of the digital in all aspects of the programme meant however, that it became almost invisible and it was decided that it needed to be brought more to the fore. And so, in 2010, as part of a major review, attempts were made to stress that the programme was, as it was phrased at the time, 'digitally aware'. In addition, internal funding was gained to undertake a pilot project to experiment with what it would mean to offer more distinct digital content, and in particular to investigate how to provide students with the opportunity to gain familiarity with

some of the many software tools available for use in the area. This was felt to be important, because the need for active experimentation seemed to be stressed both within practice, and also within educational circles. For example, Simon Wilson writing of his experience with the AIMS (Born Digital Collections – An Inter-Institutional Model for Stewardship) project which has allowed Hull University to move towards dealing with its digital archival records has written that 'The biggest recommendation I can make is to start having a play with the software' [2]. Then again, Patricia Galloway, reflecting on her over ten years' experience with running a course in digital archiving at the University of Texas argues that 'digital archiving education needs to remain exploratory and experimental, certainly at the graduate level' [3].

This pilot project was entitled DiSARM: Digital Scenarios in Archives and Records Management and took place during the 2011-12 academic year. The project involved the development of a number of exercises and scenarios, the most ambitious of which, the Digital Accessioning Scenario, which was taught as part of the existing module on Archival Description, required students to work in groups to develop both a donor interview template and a workflow for accessioning born digital material. It also required them to investigate and evaluate a number of different tools, such as DROID, FTK Imager Lite and Karen's Directory Printer, for undertaking parts of that workflow. Although generally successful (evaluation showed that 94% of students believed that their understanding of conceptual models and theories relating to digital archives had improved to some degree), the project did highlight some of the challenges with teaching digital curation.

For example, it became clear that the prevailing technical infrastructure within the university was unsuited to teaching the active rather than passive use of software. Given that the downloading and installation of the software in question was seen as a part of the process of learning required in this instance, the model of the computer cluster providing access to preloaded software was inadequate and the students were for the most part working on their own machines. This in turn raised a question over whether it was fair to expect students to experiment with software which might have unexpected effects upon a personal computer. It also made it practically impossible to ensure consistency since the exercises could not be completed on the level playing field of a single operating environment. Then again, it also became clear that there was considerable variation in students' background technological competencies and that there was a need to provide an optional introductory session or preliminary reading materials to cover some basic principles of Information Technology in preparation for later teaching and learning focusing on digital curation. Finally, from a pedagogical standpoint, it became apparent that there was a slight mismatch between the idea that the programme was designed to teach best practice in the field of archives and records management and the fact that best practice in the area of digital curation is still only beginning to emerge.

The challenges identified cannot be solved all at once, but with respect to the last, it is hoped that this will be dealt with by the development of a separate digital curation module during the academic year 2012-13 for delivery from September 2013. For, by placing digital curation within its own module it will have a space of its own to develop in, whilst still being a part of and feeding into broader archival practice. Recognising though that digital curation is not simply of interest to those in the archival profession, it is intended that this new module will not be developed solely by those who have an archives background, but rather in conjunction with colleagues across the Department of Information Studies and beyond; bringing together individuals from across the university who are wrestling with digital curation challenges on a day to day basis, such as Research Computing, Library Services and the Records Office. Moreover, it is also being developed with an eye to seeing digital curation as an international practice. A memorandum of agreement has recently been signed between UCL, Simmons College, Boston and Mid-Sweden University, which will involve, amongst other things, UCL taking a more active role in the Digital Curriculum Laboratory initially developed by the other two partners [4]. The DCL allows the partners to share amongst themselves a set of exercises and scenarios for use in teaching digital curation. The planning process for the new module is proving exciting, but it is not yet possible to give very full details. Work will be continuing over the Summer and use is already being made of both the Matrix of Digital Curation Knowledge and Competencies and the DigCurV Evaluation Framework [5, 6].

III. ABERYSTWYTH UNIVERSITY

Aberystwyth University's Archive Administration programme has always focused on teaching both specialist historical skills and up-to-date professional skills. As early as 1974 the application of databases to the intellectual control of modern records was an integral part of the course. From the mid-1980s teaching considered the interface between archives, records and computer technology, particularly for managing modern records, indexing and the creation of metadata [1]. Modules that specifically addressed electronic records and electronic cataloguing were introduced from the late 1990s initially with supporting training in ICT.

The Records Management programme was first introduced in 1997 to cater for students who wanted to specialise in the management of more modern information. From the outset the

course included modules in electronic records, information systems and systems analysis.

Like UCL, the ubiquitous nature of digital material means strategies for their effective management and access has become interwoven into the full-time Archive Administration course. The policies, systems and activities required to maintain archival principles and preserve the fundamental characteristics of a record are taught "format neutral". Students are given opportunities to consider the specialist preservation needs of different carrier formats: paper, vellum, photographs, audio materials and digital materials, while gaining an understanding of how to maintain access to them through service delivery, audience development and the effective use of metadata. Earlier stark distinctions between digital and non-digital cataloguing methodologies and records format have been erased with students taught the wider principles of information governance in a digital age.

The course is designed to support experiential learning as described by Kolb's learning cycle [7]. Theoretical principles, taught in practicals, seminars and lectures, enable reflection on mandatory pre-course experience. Abstract conceptualisation is facilitated by summative assessments, and professional visits, which consider theoretical principles and their implementation in practice.

Throughout the second semester full-time Archive Administration students are engaged in active experimentation through an extended group practical project. Students are embedded in a professional environment while they design the methodologies required, before proceeding to process and prepare a collection for public access. Projects offered embrace a range of archival materials, with those that involve digitisation of analogue formats to enable access, or preparing born-digital materials for ingest into management systems, particularly popular options. Students are assessed on their project management, team skills, personal effort, presentation skills and professional skills. The latter include: the application of archival theory, creation of appropriate metadata and use of appropriate software tools. A variety of relevant software is made available in an open access computer lab with training undertaken early in the project to enable students to experiment and practice. These include open source and proprietary digital asset management software, metadata creation tools, database tools and XML editors. Specific tools for digital ingest procedures e.g. DROID, are usually specified and made available by project hosts. The assessment significantly includes the group's ability to recognise and undertake preservation action relevant to the condition and format of the material, and make recommendations for future preservation needs.

Distance-learning Archive Administration students have also been learning in a "format neutral" environment with readings and examples relating to the care of all types of archival material embedded in their learning materials. Their practical project is undertaken individually, usually based in their employing organisation. This being the case the choice of projects is limited by their organisation's collection strategy and processing priorities, meaning that hands-on experience with digital materials may not be possible. To address this distance-learning Archive Administration students have been offered optional modules (which were already offered to Information and Library Studies students), in Digital Information Management and Digital Preservation, since 2011. From 2013-2014 academic year this more explicit digital curation education will be offered as an option to full-time Archive Administration students, to enable them to study the subject in more depth.

In response to demand from overseas students, the distance-learning International Archives, Records and Information Management degree was launched in 2011. This course offers a selection of pathways, and has a greater degree of optionality than the more UK biased Archive Administration degree. This flexibility enables interested distance-learning students to specialise more decisively in digital curation. Digital Risk and Asset Management constitutes a core subject and a number of optional modules such as Digital Information Management, Digital Preservation, Information Systems and Information Assurance can be combined to gain in-depth curation knowledge.

Meanwhile, the Records Management programme at Aberystwyth University, which has always been firmly grounded in business processes, has been completely redesigned and rewritten to keep abreast of emerging practice. Re-launched in 2012 as Information Governance and Assurance, the course focuses almost entirely on record-keeping in a digital environment. Students study asset management, risk, compliance, preservation, law and ethics for a digital records environment. Information assurance is taught under licence from the University of Washington Centre for Information Assurance and Cyber Security.

An observed barrier to effective understanding of the digital curation education included in the courses is the ICT proficiency of the students undertaking them. ICT as a discrete assessable subject was dropped from Aberystwyth University's archives and records management courses in 2002-2003, as students joined the courses with a sufficient degree of competency. Like UCL, recent discussions have considered the possible re-introduction of an ICT "concepts" course, possibly as mandatory prior reading. Although students undertaking the courses are able to use popular software tools, their understanding of a number of basic concepts for digital curation such as: the differences between

vector, raster and structured data; or the use of mark-up standards and namespaces limits their understanding and progress.

Aberystwyth University's Department of Information Studies is constantly revising the programmes offered to equip students for professional practice, ensuring that the relevant knowledge and skills are acquired. The need for graduates from archives and records management programmes to enter the workplace "digital ready", able to manage digital material from the outset, is increasing. Programme changes are responding to this, and from academic year 2013-2014 a dedicated MSc in Digital Curation will be offered alongside current schemes. Existing module provision is being revised to ensure an in-depth understanding of the curation lifecycle and complementary digital literacy; while new modules which address knowledge and information architecture and information management systems have been developed. Synergies with the Computer Science Department are being explored to extend the optional module choices to students. A digital ingest and digital forensics laboratory is being established. The design and development of this course was informed by: the DCC Curation Lifecycle Model, the Matrix of Digital Curation Knowledge and Competencies and the DigCurV Evaluation Framework [5, 6, 8]. It is hoped that the degree will appeal to students with a higher degree of digital competency than those undertaking the current courses offered.

Meanwhile, an awareness that practicing professionals sometimes need to improve their skills in selected areas means that digital preservation will shortly be added to the short assessed CPD courses offered by the department.

IV. CONTINUING PROFESSIONAL DEVELOPMENT

The authors, whilst teaching individually at the universities discussed above, also work together on the Committee of the Archives and Records Association's Section for Archives and Technology (ARA SAT). This section (previously the Data Standards Group) was recently renamed to reflect its growing concern with issues of interoperability, digitisation and digital curation.

In 2009-2010 ARA SAT collaborated with the Digital Preservation Coalition (DPC), the UK National Archives (TNA) and Museums, Archives and Libraries Wales (CyMAL) to present a series of nationwide digital preservation road-shows which raised awareness of tools and techniques. The ARA now wishes to build on the success of these, with the help of ARA SAT, to develop a rolling programme of digital curation CPD, as part of a portfolio of topics identified in consultation with members. The level at which to pitch such training, and the practicalities of providing it were investigated through a

membership survey and open roundtable discussion, as outlined below.

The ARA SAT committee developed a small survey, for the ARA Conference 2012 (Brighton), to explore: the extent to which ARA members were already dealing with born digital material; their awareness of existing tools and resources for digital preservation; and their level of confidence with respect to their ability to meet the challenges presented by such material. This was intended to give an in-depth snapshot of the state of play on which to build further training.

Due to the small number of responses (62), the results of the survey should not be taken as conclusive or, necessarily, representative of all ARA members, but they begin to fill out a picture of a profession just starting to incorporate born digital material into their day to day working practices, but also one secure in the belief that ensuring the long-term preservation of such material is very much their business. For example:

- Most practitioners are reasonably confident that the digital material they hold will be accessible in 10 years' time;
- There are decidedly mixed levels of awareness with regards to projects, models, organisations and tools within the field, e.g. whereas 43.4% (23 out of 53) have heard of the OAIS (Open Archival Information System) Reference Model, only 11.3% (6 out of 53) have heard of ISO 16363 (Audit and Certification of Trustworthy Digital Repositories);
- Even when awareness of a specific tool is high, use of that tool as a normal part of preservation workflow is low, e.g. Only 30.2% (16 out of 53) had no idea what DROID (Digital Record Object Identification) was, but of the other 69.8% who had heard of it, only 11.3% (6 out of 53) were using it as a part of their work;
- Only 30.2% (16 out of 53) described themselves as being currently active in the preservation of born digital material;
- Just under half (25 out of 53) would not consider applying for a post advertised with the job title 'Digital Archivist'. From the comments it became clear that, although some did not wish to lay claim to the title 'Digital Archivist' because 'I don't have the technical knowledge to warrant such a description', others took against the title because they did not wish to recognise such a format distinction, e.g. 'I am an archivist that deals with all material regardless of format.'

Following on from the survey, ARA SAT convened an open roundtable discussion on digital curation training at the British Library in November 2012. The 40 participants included stakeholders from ARA, DPC (a membership organisation to which ARA subscribes), TNA and JISC. The discussion proved to be wide ranging: it explored synergies between the different

stakeholder organisations to help establish possible joint working to reduce duplication of effort; examined possible models for training; and identified other areas of activity which could support the development of digital curation knowledge and implementation amongst archivists and records managers.

ARA SAT is a voluntary body with members undertaking work in their free time, or through limited release from their other professional duties. In addition little funding is available to develop CPD training, and there was an acknowledgement that doing so may just be "re-inventing the wheel". Rather than undertaking the development of ARA specific training, ARA SAT identified their role as facilitators in ensuring that the ARA membership was able to access existing information and training provision to manage their own learning. To this end activities which ARA SAT is considering as a result of the roundtable include; a series of monthly articles in the ARA newsletter ARC to raise awareness, active participation in the forthcoming 2013 Day of Digital Archives [9], and the re-development of the ARA SAT pages on the ARA web-site. This re-development will not seek to duplicate information provided by other organisations (e.g. DPC, Digital Curation Exchange and Digital Curation Centre) but rather to point to it; providing ARA members with a gateway in their own space which structures this information in the way that makes best sense to them.

At the roundtable, the discussion of digital curation training followed a short presentation from Caroline Williams who outlined her recent work in developing a framework of competencies for ARA [10]. Aligning the framework with the skills acquisition educational theories of Bloom and Drefus, Williams identifies 5 levels of professional proficiency, rather than the three identified in area 2 of the DigCurV Evaluation Framework (Practical, Managerial, Executive) [6, 11, 12]. She also identifies 3 areas of competency, 10 functions and 38 individual competencies. One of these competencies deals explicitly with 'digital curation: preserving born-digital and digitised records and archives'. This work was represented at the roundtable because ARA SAT takes the view that, although it is helpful (and currently necessary) to seek to define digital curation in terms of a body of knowledge and competencies, it is also important to define it in terms of wider professional frameworks. For, if we are to help archivists and records managers develop in digital curation, it is not enough to define a fixed set of knowledge and skills that they must acquire, but rather they must be able to see a dynamic progression of development for themselves within this area.

The dynamic progression suggested by the ARA framework of competencies is as follows, with 1 being the basic level of competence and 5 the most advanced:

1. "Can describe and apply rules relating to safe preservation of born-digital and/or digitised records and/or archives as appropriate to own workplace, appreciating the differences where these apply;
2. Understand and applies principles and processes of digital curation and preservation both in relation to born-digital documents created within the organisation/service/unit and to records/archives that have been digitised (perhaps as part of a digitisation project), and the systems that support them, the addition of metadata etc;
3. Competent and confident in assisting in the development of preservation policies and processes that impact upon born digital records and/or those generated as part of an archival digitisation project and in training others in their use;
4. Regularly ensures and evaluates the development and delivery of policies and processes relating to the preservation of born-digital and digitised records, ensuring that appropriate training is in place, and measuring outcomes and impact;
5. Responsible for ensuring the long-term survival of all digital records, whether born digital or as part of an archive digitisation project in line with organisational goals, within budget" [10].

That the question of progression was of relevance was evidenced by the fact that much of the discussion at the roundtable centered on the idea that there was a need to take archivists and records managers 'to the next level' with regards to digital curation. What this meant remained ill defined, but it was sometimes expressed in terms of a movement from being 'digital aware' to being 'digital ready'. It also seemed to be associated with the provision of more 'hands-on' training, whereby digital curation could be experienced in practice and not just in words, models and ideas. As a next step, it would be worthwhile to investigate whether/how this perceived 'next level' maps onto the levels suggested by the ARA framework and to expand our thinking about the development of digital curation in this sense of continuing professional development. Certainly this is something ARA SAT are starting to do and a model which describes a 'hands-on' development approach, drawn from discussions at the roundtable is outlined below (Table 1).

TABLE 1: DEVELOPING IN DIGITAL CURATION

Indicative competency level	Skill	Learning acquisition
Level 1	Awareness of digital preservation and IT skills to understand the challenges	Awareness of the challenges of digital preservation and acquisition of the appropriate IT skills and data management concepts required to understand the technical component of digital preservation

Level 2	Using digital preservation tools	Experiential knowledge of the functionality of appropriate digital preservation standards and tools and how these can be applied in practice.
Level 3	Working with IT development professionals	Knowledge of the IT profession and how to establish an effective dialogue to ensure appropriate digital preservation solutions, using the appropriate tools, standards and policies, can be established.
Level 4	Solving technical digital preservation problems	Working with other relevant professionals to establish effective solutions to technical problems relating to ingest, storage or access of digital materials.
Level 5	Business planning for digital preservation	Enabling effective planning for digital continuity at an organisational level through the preparation and implementation of policies and procedures.

When comparing the above emerging thinking from ARA SAT with the ARA competencies outlined earlier, two differences present themselves, which would seem to be related both with each other and the issue of technical competency. For, whereas the ARA competencies speak more in terms of policies and processes, the thinking above includes discussion of experiential knowledge of tools. Moreover, with this increased emphasis on tools (and hence technology), the thinking above also looks explicitly outwards to the IT and other relevant professions, whereas the ARA competency for digital curation does not. Is it this then that lies at the heart of the distinction between 'digital aware' and 'digital ready'? Certainly it is part of it, but equally it would seem too simplistic to see it solely in terms of whether or not someone has a technical skill set. Negotiating the nature of this boundary will therefore be an ongoing process for all those involved in the archive and records management profession for many years to come.

V. CONCLUSION

As this paper shows steps are being taken by those embodying the infrastructure of the archives and records management profession in the UK (the educators of new entrants and the professional body) to address the need for digital curation training for the profession. The way in which those involved span the boundary between the provision of entry-level education and continuing professional development makes it possible to see a distinction between developing digital curation, as a subject, as a body of knowledge and competencies required by those who wish to do digital curation; and developing in digital curation, as a framework within which those working in fields such as archives and records management can see themselves progressing. It is only by addressing development in both these

senses that we can ever hope to achieve the mainstreaming of digital curation.

REFERENCES

[1] S. Houlton, "The development of the Diploma in Archive Administration at the University of Wales," Aberystwyth, 1997.

[2] S. Wilson, "Day of digital archives: Some personal reflections," *Born digital archives*, 2011. [Online]. Available: http://born-digital-archives.blogspot.co.uk/2011/10/day-of-digital-archives-some-personal.html. [Accessed: 30-Jan-2013].

[3] P. Galloway, "Educating for digital archiving through studio pedagogy, sequential case studies and reflective practice," *Archivaria*, no. 72, pp. 169–196, 2011.

[4] K. Anderson, J. Bastian, R. Harvey, T. Plum, and G. Samuelsson, "Teaching to trust: How a virtual archives and preservation curriculum laboratory creates a global education community," *Archival Science*, vol. 11, no. 3, pp. 349–372, 2011.

[5] Lee, "Matrix of digital curation knowledge and competencies," 2009. [Online] Available: http://ils.unc.edu/digccurr/digccurr-matrix.html. [Accessed 14-Mar-2013].

[6] Karvelyte, N. Klingaite, J. Kupriene, L. Molloy, K. Snow and A. Gow, "D2.1 Report on baseline survey and evaluation framework Section 2: Evaluation framework," DigCurV, 2012. [Online] Available at: http://www.digcur-education.org/eng/Resources/D2.1.2-Evaluation-Framework. [Accessed 14-Mar-2013].

[7] Kolb, Experiential learning experience as a source of learning and development. New Jersey: Prentice Hall, 1984.

[8] S. Higgins, "The DCC Curation Lifecycle Model," The International Journal of Digital Curation, vol. 3, no. 1, pp. 134-140, 2008. [Online] Available: http://www.ijdc.net/index.php/ijdc/article/viewFile/69/48. [Accessed 18-Mar-2013]

[9] G. Gueguen, "About the project," *Day of digital archives*, 2012. [Online]. Available:

[10] http://dayofdigitalarchives.blogspot.co.uk/p/about-project.html. [Accessed: 30-Jan-2013].

[11] M. Williams, An ARA framework of competencies: Report with findings and initial framework. ARA, 2012.

[12] Bloom, M. Englehart, E. Furst, W. Hill, and D. Krathwohl, Taxonomy of educational objectives: The classification of educational goals. Handbook I: Cognitive domain. New York, Toronto: Longmans, Green, 1956.

[13] H. Dreyfus and S. Dreyfus, Mind over machine: The power of human intuition and expertise in the era of the computer. New York: The Free Press, 1986.

[14] G. Coulbourne, "Digital preservation outreach and education (DPOE) initiative." [Online]. Available: http://www.digitalpreservation.gov/education/documents/DPOE_handout.pdf. [Accessed: 18-Mar-2013].