Ahead of the CurV: Digital Curator Vocational Education

by Ann Gow and Laura Molloy

Citation

Gow, Ann and Laura Molloy. 'Ahead of the CurV: Digital Curator Vocational Education'. In: Clare Mills, Michael Pidd and Esther Ward. *Proceedings of the Digital Humanities Congress 2012*. Studies in the Digital Humanities. Sheffield: HRI Online Publications, 2014. Available online at: <http://www.hrionline.ac.uk/openbook/chapter/dhc2012-gow>

Abstract

In this paper, we describe the work of the EC-funded DigCurV project (http://www.digcur-education.org/). We examine the context of the project, the methods and findings of its extensive survey work, and the development of proposed frameworks for evaluating and delivering a digital curation curriculum.

Ahead of the CurV: Digital Curator Vocational Education

by Ann Gow and Laura Molloy

1. Introduction

The Digital Curator Vocational Education ('DigCurV') project was funded by the European Commission's Leonardo da Vinci lifelong learning programme.[1] It aimed to establish a curriculum framework for vocational training in digital curation.

DigCurV brought together a network of partners to address the availability of vocational training for digital curators in the library, archive, museum and cultural heritage sectors, with a particular focus on the training needed to develop new skills that are essential for the long-term management of digital collections.

Since presenting this paper at Digital Humanities Congress 2012, DigCurV project concluded, with a final conference on "Framing the digital curation curriculum" in Italy, May 2013. The curriculum framework discussed in this paper and associated reports are all available on the DigCurV web page.

2. Background

A critical and often sidelined issue within digital humanities, and the cultural heritage sector more widely, is the ability of those undertaking research in the arts and humanities to care for their data and other digital material over time. Digital humanities research creates rich digital resources[2] but also the challenges of sustaining and managing these objects. Other professionals in the cultural heritage sector also have the responsibility of stewardship of digital material over time. But are those now professionally obliged to perform digital curation receiving the training they need? And what exactly constitutes those training needs?

Another pedagogical dilemma in digital curation is whether all staff in the digital humanities and cultural heritage sector should become more proficient in the curation of digital assets, or whether specific training

should be developed to enable a distinct strain of specialists to emerge. As digital humanities scholars should we be skilled to care for as well as to create? The Italian economist Vilfredo Pareto argued at the turn of the twentieth century that a society grown wealthy enough would cease to foster general knowledge in individuals and increasingly encourage individual ability in tightly specified and increasingly complex skills. Each worker would become increasingly proficient at one element of the work of a larger project or process. We are currently at a similar point of decision with digital curation training. It is in the context of these debates that DigCurV operated.

Funded by the EC Leonardo Da Vinci programme, DigCurV used the thirty months of the project, which began in January 2011, to identify, analyse and profile existing training opportunities and methodologies, survey training needs in the sector and identify the key skills and competences required of digital curators. The project then established a curriculum framework from which training programmes can be developed. This curriculum framework was tested and then published. A final conference for policy and decision makers raised awareness of the curriculum and promoted it to those developing training, evaluating training, and planning to undertake training.

3. An International Network

The DigCurV project consisted of a network of partners from across Europe and North America to capitalise on expertise and experience in training across national and linguistic boundaries. Founding project partners came from Italy, Scotland, Ireland, Germany, Lithuania, England, Canada and the USA.

HATII at the University of Glasgow was a key partner in the DigCurV effort. HATII is a multidisciplinary research and teaching institute in the fields of digital curation, digital humanities, archives, records and information management and other areas connected to the use and management of digital information. Members of the research team at HATII have been central to the work of various other UK and European research projects in digital curation, digital preservation and research data management,[3] and also contributed teaching, curriculum development and training development experience to DigCurV.

In addition to the network of founding partners, the DigCurV community included an extensive network of members worldwide, including forty-four

cultural heritage institutions and 178 individuals.

4. The Need for Vocational Training

The EC has encouraged the growth of digital information professions with the 2005 launch of its i2010 strategy and a subsequent Digital Agenda initiative, launched in 2010.[4]

This investment is justified by the importance of the cultural heritage sector in the European economy. Specifically, in addition to the thousands of universities, libraries and archives across Europe, there are also more than 19,000 museums and art galleries, which employ around 100,000 staff.[5] Traditionally, museums and gallery staff have been trained in physical object care by well-established professional and vocational training courses, but as digital technologies infiltrate every aspect of society, digital objects are increasingly making their way into the collections held by memory institutions.

In 2004, the Digital Preservation Coalition and JISC established the need for digital preservation skills training in multiple sectors in the UK,[6] and DigitalPreservationEurope research has also echoed the need for these skills to be regularly refreshed by professionals as digital curation practice develops and evolves.[7] In 2009, the New York Times recognised the growing demand for digital archivist skills in the USA.[8] In 2010, Gartner Research identified four new roles needed by IT departments to remain effective[9] – one of these was 'digital archivist', and it was estimated that fifteen percent of businesses would employ in this role by 2012. And yet, at the 2011 JISC ICE Forum in the UK,[10] fewer than half a dozen UK institutions were listed as providing digital curation training as part of their profession library and archive courses.

However, it is not enough to trust new recruitment into the cultural heritage sector to face the challenges of digital curation. Research conducted by DigCurV confirms that at least in the experience of our respondents, investment is not always channelled towards creating new staff to take on the emerging digital curation duties increasingly required by heritage institutions. There is a need for existing staff to adapt to the emerging digital cultural sector.

5. Training Needs, Oportunities and Skills

DigCurV started work by consulting research already undertaken in the area of digital curation training, in order to move toward the development of a useful and usable curriculum framework for new and existing digital curation professionals in the cultural heritage sector. Data was then gathered about current training needs and training opportunities. An online registry of training was established on the project website to promote available training to the public.[11] The project organised focus groups in several European countries to talk to professionals in the field about the skills currently required by various contemporary roles in digital curation, and performed analysis of a number of job advertisements to establish currently required skills. An evaluation framework was developed to apply to existing training. These activities all influenced the development of the curriculum framework for digital curation vocational training.

5.1. Training Needs Survey

The training needs survey ran online during July and August 2011, and received 454 valid responses from 44 countries, mostly from Europe. Most responding institutions are currently undertaking long-term preservation of digital materials. More than half, however, reported they were not aware of recruitment of new staff to undertake these responsibilities, thereby implying that existing staff will be obliged to acquire the necessary skills and competences.

A significant proportion of respondents reported that their organisation is currently planning training for staff in digital curation skills, with small group workshops the most popular format.

The survey team identified skills for digital curation from scrutiny of the literature and previous research on this topic, including reference to the OAIS reference model,[12] the Digital Curation Centre lifecycle model,[13] the Digital Preservation Outreach and Education training needs assessment survey,[14] Scheffel, Osswald and Neuroth's work on qualification in digital preservation[15] and a paper by Kim, Addom and Stanton on education for e-science.[16]

From the resulting long list of general skills, almost all were regarded by respondents as relevant to digital curation work, but the ability to collaborate with others, the ability to communicate with others and an affinity for working with technology emerged from survey responses as the

most prized in digital curation staff. A list of skills specific to digital curation work was also provided; again, virtually all were indicated as of high importance by respondents, but the highest need for training appeared to be in providing staff with a basic knowledge of digital curation issues, planning for digital preservation and data management, and the use of specific tools for digital curation.

These results chime with the view reached at the JISC ICE forum in 2011 that working competently in digital curation requires a high degree of competence in a markedly varied set of diverse skills.

5.2. Training Opportunities Survey

The training opportunities survey was distributed during April to June 2011. The main objectives of the survey were to identify, analyse and profile existing training opportunities. The survey included basic questions about the responding institution, but focused on issues related to training content, methodologies, delivery options, assessment, certification and best practices for training and continuous professional development. Sixty valid responses were received from sixteen countries, again mostly from Europe.

Forty percent of respondents reported having arranged digital curation training events in the two years prior to the survey. Most events were offered in western Europe and the US, and predominantly in capital cities with the exceptions of Germany and the UK. Almost half of all reported courses were delivered in English, although we are aware that the fact the training opportunities survey was conducted in English may have influenced this figure.

The most frequently-trained audiences were practitioners and researchers from archives, libraries, museums or academic institutions. Forty-eight percent of all training was appropriate for developers employed by commercial vendors or institutional IT experts within the museums, libraries, archives, government and business sectors, who are responsible for digital curation. Thirty-three percent of reported training events were targeted at students. Fifty-seven percent of reported courses required some basic understanding of the main principles of digital curation beforehand.

Skills were addressed again in this survey. Knowledge of key needs and challenges was seen as most important, followed by standards and strategic planning. Technical issues were taught in almost half of courses, followed by legal aspects, digital curation and preservation tools, digital repository audit

and certification, and trusted repositories.

The training opportunities survey revealed gaps in training provision, particularly in eastern Europe and the Nordic countries. There may also be a lack of training in languages other than English. Survey responses emphasised how much existing training is focused on basic and introductory principles, with much less available for experienced practitioners in digital curation and digital preservation.

5.3. Skills Analysis - Focus Groups

In addition to the active programme of survey work, focus groups were hosted in five countries between September and November 2011. These groups aimed to identify the skills and competences needed for digital curation, what the relevant professional roles in digital curation were, and the corresponding training needs. Working with the DPOE audience pyramid,[17] participants identified as practitioners, managers or executive and presented a fairly consistent set of findings across countries and staff types.

Participants reported a lack of appropriately-skilled staff, presenting challenges to successful and timely recruitment. The diversity of the required skill-set echoed the survey findings; the ideal skill-set reported by participants combines technical expertise, information science, library or archival knowledge and subject knowledge along with strong communication skills.

Participants also reported a lack of suitable training which needs to be addressed with some urgency. The Irish and Lithuanian groups particularly reported the need for training in the introductory concepts of digital curation and preservation.

Participants were asked their opinion on the need for accreditation of training. Many were in favour: for practitioners as proof of their qualification, and for managers and executives as a benchmark useful during the recruitment process. Other participants from the manager staff group, however, held the opinion that skilled staff are so urgently needed, they would prioritise possession of the relevant skills above accredited status during the recruitment process.

5.4. Skills Analysis - Job Advertisements

Forty-eight job advertisements, representing fifty-three openings, were collected between February 2011 and January 2012 from the UK, USA, New Zealand, Germany and Australia. This exercise was to provide a snapshot of the current state of recruitment in the digital curation sector, as opposed to any attempt at a representative collection.

These were scrutinised for the skills required; competences, experience and knowledge expected; and the degrees and qualifications asked for. The tasks expected by the incumbent were also noted. The findings of this activity again echo the messages emerging from the other research undertaken by the project team.

Classifying skills into 'general' and 'digital curation-specific', as with the training needs survey, the team found that once again that digital curation roles in the cultural heritage sector demand an extensive set of diverse abilities.

The most frequently cited 'general' tasks listed as essential to the role included communications including outreach and liaison, project management, teaching and training, supervision and funding capture. The most popular digital curation-specific tasks were digital collection management, data management, broad-based digital curation and preservation, trusted repository and archive-appropriate duties, documentation of assets and awareness of best practice.

The skills, competences and knowledge sought from applicants were again considered in two separate groups by the research team. The most commonly cited 'general' skills were communication, collaboration and team work. Popular digital curation-specific skills included knowledge of digital archive and digital library environments, trusted repositories, lifecycle data management, information technology in general, programming, metadata, up-to-date experience of digital preservation tools and policies, awareness of current standards and knowledge of best practice.

An advanced degree, usually a Master's degree or equivalent, was the most desirable qualification and preferably from LIS or archive courses, a science discipline, computer science or humanities.

6. Evaluation Framework

Such extensive research was a salient element of the approach to the development of an evaluation framework. The findings of our research described the current skills and training landscape including which skills were most sought by those in the profession, the availability of individuals possessing these skills, and the current access to useful training for both new and existing staff. Many members of the DigCurV team have prior experience in digital curation, data management and skills training work and so could contribute experience of projects and initiatives such as digitalpreservationeurope, nestor, Planets, DaMSSI and the Digital Curation Centre amongst others. This massed experience further informed our view of the current landscape, providing us with a profile of digital curation training, which we further augmented by drawing on the findings of other work that has already taken place in digital curation skills training.

On the basis of these sources of information, we developed an evaluation framework, which is intended to be helpful to those providing or assessing digital curation curricula (or individual pieces of training which may form part of a curriculum). The layout is based on the matrix format of the DigCCurr Matrix of Digital Curation Competencies and Knowledge.[18] Other models drawn upon include the Digital Preservation Outreach and Education initiative's training audiences pyramid, the Research Information Network's Researcher Development Framework – taxonomy for information literacy,[19] and the Digital Curation Centre lifecycle model.

The Evaluation Framework provides a series of different ways to view and evaluate a digital curation curriculum or piece of training. Taking a structured approach to consideration of a curriculum or piece of training can help to assess what training is already available, and to clarify which potential approaches, audiences and skills may need to be addressed. For those assessing training, the Evaluation Framework provides a structure to which training offerings can be mapped. This serves to clarify where provision is ample and which approaches, audiences or skills are scarcely served in existing training. Mapping can also provide a benchmark to allow comparison of different training offerings against each other.

The Evaluation Framework prepares the ground for the subsequent Curriculum Framework, emerging later in the DigCurV project, which – as the name suggests – moves on from evaluating and reviewing existing training to assisting in the development of new training offerings.

7. Curriculum Framework

The DigCurV Curriculum Framework aims to indicate core digital curation skills and competences, and pathways of skills progression through these. It is not an attempt to specify a particular training curriculum, but instead is deliberately a reference framework. The Curriculum Framework takes the form of a portfolio document which can be interrogated via three 'lenses' or views, one for each of the DPOE audience types: Practitioner; Manager and Executive.

In each lens, skills and competences specified are based on the findings of the Research Information Network (RIN) Researcher Development Framework Information Literacy Taxonomy, published by RIN, May 2011, and populated with results of both the DigCurV training needs survey and DigCurV focus group findings. Within the Skills and Competences Matrix, the 'Skills Area' and 'Descriptor' columns are drawn from those in the RIN Taxonomy which are applicable to digital curation. We are considering how practical, managerial and executive roles in digital curation map to each Descriptor. These skills and competences encompass not just technical knowledge and duties but widen out to also encompass personal attributes, attitudes and behaviours, further helping to define the approaches that a curriculum should encourage in individuals to shape them for success in digital curation professions.

Each lens aims to answer the question, 'When building digital curation training for this level of staff in a cultural heritage institution, what should be included?'

The development of each lens draws on the consolidated experience and knowledge of the DigCurV team across all partners. Led by HATII, this work package particularly relied on the teaching experience of the team as well as awareness of ongoing modelling of the RIN taxonomy and the Information Literacy Lens on the Vitae Researcher Development Framework[20] promoted by HATII participation in the RIN Information Handling Working Group (now the Research Information and Digital Literacies Coalition).

8. Future Development

The answer to the dilemma of whether all digital humanists and cultural heritage professionals should up-skill in digital curation, or whether it should

be left to specialists, is not the responsibility of one project such as DigCurV. Pragmatically, then, in order to address as many futures in digital curation as possible, the project continues to work with an open definition of lifelong learning and vocational training, acknowledging the relevance of all postgraduate and professional-level training available both to those intending to enter and also those already working in the field. This includes training types from short courses on specific skills for existing professionals in the sector, to master's courses specifically training students in digital curation skills.

9. Acknowledgements

Our thanks to the DigCurV project team, and all our research participants.

Footnotes

[1] European Commission Leonardo da Vinci programme:
http://ec.europa.eu/education/lifelong-learning-programme/ldv_en.htm.

[2] http://www.digital-humanities.glasgow.ac.uk/about/

[3] http://www.gla.ac.uk/hatii

[4] European Commission's Europe's Information Society webpage available
at: http://ec.europa.eu/information_society/eeurope/i2010/index_en.htm.

[5] European Group on Museum Statistics estimate. Data is available at
http://www.egmus.eu/index.php?id=88&no_cache=1.

[6] JISC and DPC Training Needs Analysis:
http://www.jisc.ac.uk/media/documents/programmes/preservation/trainingne
edsfinalreport.pdf.

[7] Harvey, R.. *Professional Development in Digital Preservation: a life-long
requirement*. 2007. DPE briefing paper.

[8] De Aenlle, C. 'Digital Archivists: Now in Demand', *New York Times*, 7th
February 2009. Available at
http://www.nytimes.com/2009/02/08/jobs/08starts.html.

[9] *Gartner Identifies Four Information Management Roles IT Departments
Need to Remain Effective*, press release available at
http://www.gartner.com/it/page.jsp?id=1282513

[10] http://www.jisc.ac.uk/whatwedo/programmes/preservation/iceforum

[11] http://www.digcur-education.org/eng/Training-opportunities

[12] http://public.ccsds.org/publications/archive/650x0b1.pdf

[13] http://www.dcc.ac.uk/resources/curation-lifecycle-model

[14]
http://www.digitalpreservation.gov/education/documents/DPOENeedsAssess
mentSurveyExecutiveSummary.pdf

[15] Scheffel, Osswald and Neuroth, 'Qualifizierung im Themenbereich

„Langzeitarchivierung digitaler Objekte"' in *Eine kleine Enzyklopädie der digitalen Langzeitarchivierung.* Goettingen, Germany. Available at http://nestor.sub.uni-goettingen.de/handbuch/artikel/nestor_handbuch_artikel_468.pdf

[16] Kim, Addom and Stanton. 'Education for E-Science Professionals: Integrating Data Curation and Cyberinfrastructure' in *International Journal of Digital Curation, 1, 6: 125.* 2011. Available at http://www.ijdc.net/index.php/ijdc/article/view/168/236

[17] http://www.digitalpreservation.gov/education/educationneeds.html

[18] Version 13, 17 June 2009. Available at http://ils.unc.edu/digccurr/products.html

[19]

http://www.rin.ac.uk/our-work/researcher-development-and-skills/information-handling-training-researchers/rdf-and-pillars

[20]

http://www.vitae.ac.uk/policy-practice/375-533141/The-Informed-Researcher-Booklet-and-Information-literacy-lens-on-the-Vitae-Researcher-Dvelopment-Framework-out-now.html