



Digital Preservation Is People



Thinking About Digital Skills for Archivists

Grant Hurley, Digital Preservation Librarian, Scholars Portal
AAO Institutional Forum - October 26, 2018

Me and my first computer

Tandy 1000 with
uncontextualized cat

[Source: Flickr, cc 2.0 license. Photo by Craig Howell](#)



Digital Preservation Is Scary



Julia Stiles in Ghostwriter ("Who is Max Mouse?")

https://youtu.be/bLlj_GeKniA



A. Graham 2 years ago

The original cyberbullying was literally bullying someone in real life by using intimidating computer jargon.

👍 194 🗨️ REPLY

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Archivists are Not (Often) Computer People



Photo: Jess Whyte

- A 1999 survey of archival studies students found 5% with previous degrees in the sciences; the other 95% came from humanities/social sciences/languages backgrounds ([Wallace 2000](#))
- Do these individuals prefer physical archival materials in their work? If so, why?

Digital preservation is:

The series of managed activities necessary to ensure continued access to digital materials for as long as necessary.

[Digital Preservation Coalition [Glossary](#).]

or:

A set of theories and practices that work to keep digital objects authentic, available and reliable over time.

[My usual definition, cribbed from InterPARES.]

Outline

- Finding the Gaps
 - Experiences in preservation service provision at Scholars Portal
 - Experiences teaching workshops
 - Educational programs
 - Professional training opportunities
 - Results of the CARL Digital Preservation Survey
- What digital competencies should archivists have?
- How should competencies be taught? By whom?

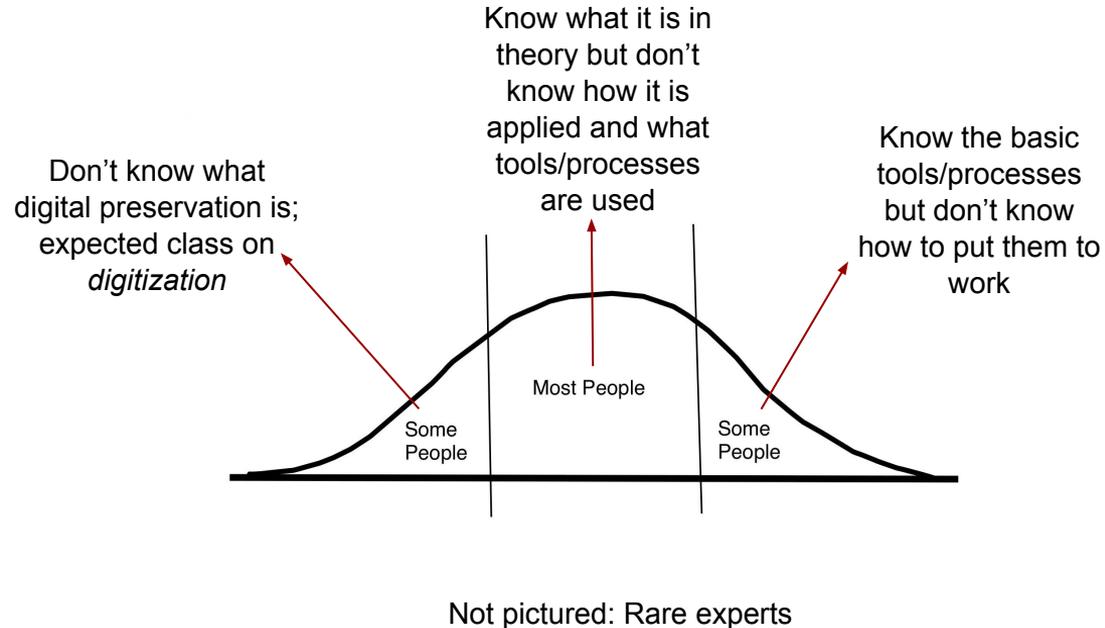
Service Provision at Scholars Portal

- [Permafrost](#) service provides **hosted technical infrastructure** and other resources (tools + storage, training + documentation) to lighten the load for members' infrastructure/IT systems
- Users (e.g. archivists) process materials for preservation using our services and must:
 - Understand the consequences of their decisions made during processing
 - Be able to define policy decisions now and in the future
- Scholars Portal does not make collections/policy decisions when it comes to member assets



Hosting Digi Pres Training Workshops

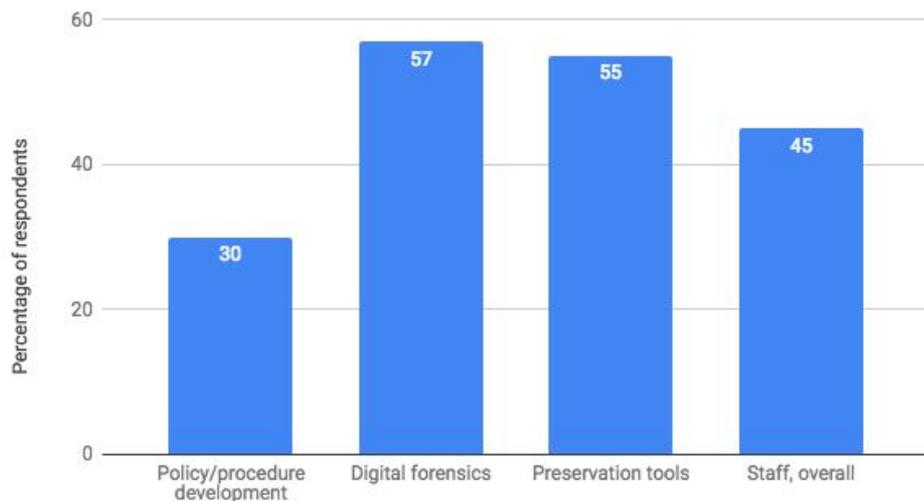
- No baseline of knowledge in the room
- Difficulty in satisfying the outliers
- Aiming for middle:
 - Introduction to standards: OAIS, TDR ISOs; METS/PREMIS
 - Introduction to steps in a workflow with example tools (checksums, file IDs, normalization, etc.)
 - Introduction to workflow tool: Archivematica



Canadian Association of Research Libraries Digital Preservation Survey

Context: 51 respondents: 26 CARL members; 25 non-members (Smaller academic libraries; government-run archives, libraries and museums; community-focused archives)

"Lack of staff skills/knowledge" identified as a challenge



**“Lack of staff
knowledge/skills” selected as
gap**

Policy/procedure development - 30% of respondents

Digital forensics - 57% of respondents

Preservation tools - 55% of respondents

Staffing, overall - 45% of respondents

CARL Survey - Staffing

- 65% of respondents have less than 100% FTE in total for all positions with identified digital preservation responsibilities
 - 8% of respondents have 5 full-time staff or more
- Of the 145 roles listed by all respondents, 54% of these had 20% or less time for digital preservation assigned to the role
- 47% of respondents are expecting to expand staff responsibilities for digital preservation
 - Of these, 75% indicated they will reassign current staff
 - 63% expect to hire new staff

CARL Survey - Staffing

Average total FTE dedicated to digital preservation: **1.11 positions**

In comparison, a 2017 [NDSA survey of US-based institutions](#) (79% of respondents) recorded an average of **13.6 FTE** working on digital preservation

CARL Survey - Takeaways

- Mixed confidence in current staff knowledge and skills
- Very low staffing levels dedicated to digital preservation in general
- Lack of resources to hire staff at all
 - 75% of respondents indicated this is a challenge
- Intention to reassign existing staff and hire some new staff where possible
 - How will existing staff be trained to fulfill these new responsibilities?
 - What skills and knowledge will new staff bring?

Educational Programs

- Graduate training
 - 4 of the 7 graduate information programs in Canada offer courses that specifically target digital preservation
 - Some students getting practical experience based on internships/co-ops
- College/technical/certificate programs
 - Unclear what digital preservation-related training is received, if any

Professional Development

- [Digital Preservation Management Workshop](#)
 - 3-5 days, focus on standards, policies, assessment
 - Offered internationally; scope of attendees depend on host
- [Digital POWRR Workshops](#)
 - 2 days, focus on hands-on application of tools
 - USA only; have a set of intro webinars
- Various tool-specific workshops
 - BitCurator, Islandora, Archivematica camps internationally
- One-off training
 - [Digital Preservation Coalition](#) handbook, webinars, etc.
 - Professional association workshops - AAO, SAA, etc.
 - Conference workshops
- In Progress
 - [Digital preservation at Oxford and Cambridge training pilot materials](#)
 - [Digital preservation carpentry](#)

What have we got?

- Unclear/inconsistent training requirements for graduate/certificate education
- Series of useful but uncoordinated, inconsistently offered professional development opportunities
- No real clear set of requirements workshops should be aiming toward

One CARL survey respondent:

“Il est très long et complexe d'acquérir les connaissances nécessaires pour avoir la base en conservation numérique et aucune formation accessibles facilement ce qui fait qu'un nouvel employé doit souvent être formé à partir de 0 et le champs de la conservation numérique est énorme!”

“It is very long and complex to acquire the necessary knowledge to understand the basics in digital preservation and there is no easily accessible training, so that a new employee must often be trained from 0, and the field of digital preservation is enormous!”

Identifying Competencies for Digital Preservation

- What should archivists know?
- Presumes a core set of concepts/information, of which all archivists should have a basic knowledge, and which others might progress from “intermediate” to expert depending on their needs

Competencies: Confidence with Computer Systems

- An understanding of how computer systems work
 - The building blocks of computers and how hardware/software interact
 - The main operating systems and computing languages and their advantages/disadvantages
 - The theory and practice of storage and the advantages/disadvantages between different storage technologies
 - How software development works
- The ability to feel confident using computer systems for preservation
 - Installing operating systems as virtual machines
 - Running tasks via the command line, including using APIs and Python scripts
 - Using GitHub
 - Navigating files 'under the hood' with a hex editor
 - Identifying and troubleshooting how to access various physical media for storing digital files, and how to copy their contents safely

Competencies: Confidence with Standards and Policies

- Knowledge of relevant standards and how to apply them
 - Knowledge of OAIS, TDR, METS/PREMIS and what each is for
 - Understanding of these standards are applied and operationalized
- Digital preservation policies, procedures, strategies
 - How to develop policies and other documentation and what components they should have
 - Applying policy-based decisions to collections

Competencies: Confidence with Tools & Practices

- Workflows, Storage and Maintenance
 - Best practices for acquiring, appraising, accessioning, and arranging and describing digital materials
 - How to develop and document a workflow based on institutional needs/resources
 - Defining functional requirements for workflow systems
 - What specific actions should be run on digital objects for preservation
 - What tools relate to these actions and what they do
 - How systems for access and preservation should interact
 - Practices for storage and long-term maintenance
 - Selecting storage solutions to meet needs

The Big Questions

Where should the teaching/gaining of these competencies land?

- What competencies should be covered in graduate education
- What level of competency is expected for introductory positions
- What competencies are expected to be learned on the job
- What learning is best accomplished by doing

Who should organize such training programs and at what level?

- Educational programs?
- Professional associations - provincial, national, international?
- Someone else?

Thank you!

Keep in touch!

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