Comparing Curricula for Digital Library and Digital Curation Education

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Digital Library Curriculum Project
UNC-CH & Virginia Tech

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Digital Curation Curriculum Project
UNC-CH
Two projects: alike yet different

• **Scope**
  – DL project describes a curriculum
  – DC project describes a lifecycle

• **Emphasis**
  – DL project blends people/information/technology
  – DC project focuses on information objects

• **Context**
  – DL project is multi-disciplinary and multi-institution
  – DC project develops an emerging discipline

• **Educational goal**
  – Educating digital librarians
  – Educating digital curators

Digital Curation Curriculum Conference, 2009
## Curriculum Framework, 1

### Core Topics

<table>
<thead>
<tr>
<th>#</th>
<th>Topic</th>
<th>Subtopics</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Overview</td>
<td>1-a (10-c): Conceptual frameworks, models, theories, definitions</td>
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<tr>
<td></td>
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<td>1-b: History of digital libraries and library automation</td>
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<tr>
<td>2</td>
<td>Digital Objects</td>
<td>2-a: Text resources</td>
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<td></td>
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<td>2-b: Multimedia</td>
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<td>2-b (1): Images</td>
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<td>2-c (8-c): File formats, transformation, migration</td>
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<td>3</td>
<td>Collection Development</td>
<td>3-a: Collection development selection policies</td>
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<td></td>
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<td>3-b: Digitization</td>
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<td></td>
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<td>3-c: Harvesting</td>
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<td>3-d: Document and e-publishing presentation markup</td>
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<td>3-e (7-e): Web (push) publishing</td>
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<td>3-f (7-f): Crawling</td>
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<tr>
<td>4</td>
<td>Info/Knowledge Organization</td>
<td>4-a: Information architecture (e.g., hypertext, hypermedia)</td>
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<td>4-b: Metadata</td>
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<td></td>
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<td>4-c: Ontologies, classification, categorization</td>
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<td>4-d: Subject description, vocabulary control, thesauri, terminologies</td>
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<td>4-e: Object description and organization for a specific domain</td>
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<td>5</td>
<td>Architecture (agents, mediators)</td>
<td>5-a: Architecture overviews</td>
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<td>5-b: Application software</td>
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<td>5-c: Identifiers, handles, DOI, PURL</td>
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<td>5-d: Protocols</td>
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<td>5-e: Interoperability</td>
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<td>5-f: Security</td>
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<td>CORE TOPICS</td>
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<td>6</td>
<td><strong>User Behavior/Interactions</strong></td>
<td>7-a: Search engines, IR, indexing methods</td>
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<td>6-a: Info needs, relevance</td>
<td>7-a (1): Image retrieval</td>
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<td>6-b: Online information seeking</td>
<td>7-b: Reference services</td>
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<td>behavior and search strategy</td>
<td>7-c: Recommender systems</td>
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<td>6-a: Routing, community filtering</td>
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<td>6-d: Interaction design, usability assessment</td>
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<td>6-e: Info summarization and visualization</td>
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<td>7</td>
<td>Services</td>
<td>7-e (3-e): Web (push) publishing</td>
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<td>8-a: Approaches to archiving and</td>
<td>7-f (3-f): Crawling</td>
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<td>repository development</td>
<td>7-g: Personalization</td>
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<td>8-b: Web archiving</td>
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<td>8</td>
<td>Preservation</td>
<td>8-c: Sustainability</td>
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<td></td>
<td>9-a: Project management</td>
<td>8-c (2-c): File formats, transformation,</td>
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<td>9-b: DL software</td>
<td>migration</td>
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<td>9-c: DL evaluation, user studies</td>
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<td>9-d: Bibliometrics, Webometrics</td>
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<tr>
<td>9</td>
<td>Management and Evaluation</td>
<td>9-e: Intellectual property</td>
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<td></td>
<td>10-a: Future of DLs</td>
<td>9-f: Cost/economic issues</td>
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<td>10-b: Education for digital librarians</td>
<td>9-g: Social issues</td>
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<tr>
<td>10</td>
<td>DL education and research</td>
<td>10-c (1-a): Conceptual framework, theories, definitions</td>
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<td>10-d: DL research initiatives</td>
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</tbody>
</table>
Matrix of Digital Curation Knowledge & Competencies

1) Mandates, Values and Principles
2) Functions and Skills
3) Professional, Disciplinary or Institutional/Organizational Context
4) Type of Resource
5) Prerequisite Knowledge
6) Transition Point in Information Continuum
Case 1: Preservation

8 Preservation

8a, Preservation

Issues of preserving meaningful information
Nature of digital objects
Layers and abstraction
Technology obsolescence
Approaches to preserving layers of meaning
Measures for promoting interoperability
Representation information and format registries
Spectrum of technical digital preservation strategies
Significant properties
Persistent identifiers
Cost-benefit analysis of preservation approaches

1, Mandates, Values and Principles

1.2, Core digital curation principles and values

2, Functions and Skill

2.12, Preservation planning and implementation

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Case 1: Preservation

1.2, Core digital curation principles and values
- Abstraction
- Accountability
- Adaptability and robustness
- Authenticity
- Automating and informing of tasks
- Collection
- Continuum and lifecycle orientations
- Critical inquiry
- Diversity
- Evidence
- Long Term
- Openness and interoperability
- Provenance and chain of custody
- Scale and Scalability
- Significant Properties
- Stakeholders
- Trust

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Spectrum of technical digital preservation strategies
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Cost-benefit analysis of preservation approaches

2.12, Preservation planning and implementation

- Develop packaging designs & migration plans
- Develop preservation strategies & standards
- Monitor designated community
- Monitor technology

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Case 2: Selection of Materials

2. Functions and Skills

2.3, Selection, appraisal and disposition

Deselection
Enact selection, appraisal or disposition
Evaluation & monitoring of collections
Identify needs
Identify valuable information resources
Make selection, appraisal or disposition decision

3, Collection Development

3a, Collection development / selection policies

Module not yet specified
Case 3: Description of Objects

2. Functions and Skills

2.8, Description, organization, and intellectual control

- Analyze existing descriptive information and determine needs
- Assign unique, persistent identifiers
- Create and capture descriptive information
- Create and maintain representation information registry
- Create and maintain producer profiles
- Create and maintain policy/rule registries
- Create and maintain tools registry and tools service
- Establish plan and conventions for descriptive information
- Subject analysis
- Visualization

4 Info/Knowledge Organization

4b, Metadata

- Metadata
- Dublin Core
- Namespaces & repositories
- Administrative metadata
- Preservation metadata
- Harvesting
- Educational metadata
- Semantic Web

4d, Subject description

- Subject description
- Vocabulary control
- Thesauri
- Terminologies
Case 4: Reference Services

2. Functions and Skills

2.15, Reference and user support services

- Developing policies for reference services
- Facilitating access to useful and appropriate digital objects
- Help desk and end user technical support
- Providing associated information to consumers

Major themes/tensions in reference services for DLs
- Human-intermediated digital reference
- Automation
- Use of DL resources in responses / Collection development

7b, Reference services

7 Services
Case 5: Legal issues

1. Mandates, Values and Principles

1.3, Legal requirements

Not yet specified

9 Management and Evaluation

9e, Intellectual property

Copyright
Fair use
Public domain
Digital Millennium Copyright Act
Digital rights management/
  Copyright protection
technologies
Digital library intellectual property rights
An area not covered in DL curriculum framework

• Lifecycle
  – Dimension 6, Transition Points in Information Continuum
    • Pre-Creation Design and Planning
    • Creation
    • Primary Use Environment (Active Use)
    • Transfer to Archives
    • Archives (Preservation Environment)
    • Transfer Copies or Surrogates to Secondary Use Environment
    • Secondary Use Environment
Two areas with little coverage in DC curriculum matrix

- **User behaviors**
  - Core topic 6, User Behavior/Interactions
    - 6a, Information needs, relevance
    - 6b, Online information seeking behavior and search strategy
    - 6c, Sharing, networking, interchange
    - 6d, Interaction design
    - 6e, Information summarization and visualization

- **Technology/systems**
  - Core topic 5, Architecture
    - 5a, Architecture overviews
    - 5b, Application software
    - 5c, Identifiers, handles, DOI, PURL
    - 5d, Protocols
    - 5e, Interoperability
    - 5f, Security
DCC Curation Lifecycle Model
DL Curriculum Framework → DCC Curation Lifecycle Model
DigCCcurr Matrix →
DCC Curation Lifecycle Model
Side-by-side mapping to DCC Curation Lifecycle Model
Depth of coverage in mapping to DCC Curation Lifecycle Model
Questions?

• Digital Curation Curriculum Project (DigCCurr)
  – Helen Tibbo, Cal Lee, Carolyn Hank at UNC-CH
  – With funding from the Institute of Museum and Library Services, IMLS Grant Awards # RE-05-06-0044 and #RE-05-08-0060-08

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  – Edward A. Fox, Seungwon Yang, at Virginia Tech
  – With funding from the National Science Foundation, grants IIS-0535057 (to Virginia Tech) and IIS-0535060 (to the University of North Carolina at Chapel Hill)