

# Thinking Like a Digital Curator: Creating Internships in the Cognitive Apprenticeship Model

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# Overview of Presentation

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- Michigan Context
- IMLS Funded Internships
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# Introduction

- Digital Curation – a definition
  - *The actions needed to maintain digital research data and other digital materials over their entire life-cycle and over time for current and future generations of users. Implicit in this definition are the processes of digital archiving and preservation but it also includes all the processes needed for good data creation and management, and the capacity to add value to data to generate new sources of information and knowledge.* (Digital Curation Centre, Glasgow, “What is Digital Curation?”  
<http://www.dcc.ac.uk/about/what/> )
- Learning to think like a digital curator
  - Theory and classroom activities + field experiences
- Approaches at the University of Michigan’s School of Information

# Michigan Context

- University of Michigan School of Information
  - <http://www.si.umich.edu>
- Masters' of Science in Information
  - ALA accredited (reaccreditation in 2010)
  - 2 years/48 credit hours
  - 350 students in the masters' program, ca. 45 in PhD program
- Preservation of Information Specialization
  - Emerged out of a recognized need for expertise in digital preservation, web archiving
  - Initiated March 2007, full implementation 2010
- 12 credits of the 48 required credits for MSI



# PI Specialization : : Faculty

- Elizabeth Yakel (Coordinator)
- Paul Conway
- Margaret Hedstrom
- David Wallace
- Shannon Zachary (Head of Preservation, University of Michigan Libraries)

# PI Specialization : : Courses

- *SI 581: Preserving Information (Required)*
- *SI 602: Practical Engagement Workshop*
- *SI 625: Digital Preservation*
- *SI 639: Web Archiving*
- *SI 644: Advanced Preservation Administration*
- *SI 651: Physical Treatment Processes for Preservation Administrators*
- *SI 678: Preserving Sound and Motion*
- *SI 675: Digitization for Preservation*
- *\*All courses 1.5 credits; students may mix and match courses for maximum flexibility*

# Internships at SI

- Commitment to “practical engagement”
  - MSI students required to take 6 credit hours
  - 2007-2008
    - @ 220 MSI students participated in PEP-credit internships
    - @ 240 internship sites hired and mentored MSI students
  - Summer 2008
    - 120 students at 140 internship sites
- Online Portfolio System and other infrastructure to support internships through the Student Services Office

# Internships at SI : : IMLS Grant

- Institute of Library and Museum Services grant to support 75 local and national internships in digital curation (RE-01-08-031), 2008-2011  
<http://preservation.cms-dev.si.umich.edu>
  - A total of 30 summer internships at renowned institutions with expertise in digital curation
  - A total of 45 semester internships in Southeastern Michigan
  - 1.5 credit course to support the interns
  - Digital curation / preservation educators' conference Spring 2011.





# Summer Internships

- IMLS grant provides support for 30 summer internships over three years at the following institutions:
  - OCLC Research
  - Northeast Document Conservation Center
  - LOCKSS
  - Center for Research Libraries
  - Florida Center for Library Automation
  - Smithsonian Institution
  - Safe Sound Archive
  - University of Michigan Libraries
  - Inter-university Consortium for Political and Social Research
  - Internet Archive

# Term Internships

- IMLS grant supports 45 semester-long internships in southeast Michigan over three years. Sites include:
  - University of Michigan Press
  - DTE Energy
  - Kelsey Museum of Archeology
  - Michigan Theater
  - Michigan State University Archives and Historical Collections
  - Benson Ford Research Center and Ford Motor Company Archives
  - Law Library, University of Michigan
  - University of Michigan Library
  - Bruce Halle Library, Eastern Michigan University
  - BlueStream, University of Michigan
  - Art, Architecture, Engineering Library Special Collections

# SI 602: Practical Engagement Workshop

- Winter 2009
  - 1.5 credit course coupled with a 1.5 credit internship during winter term
  - Required for term + summer interns
  - Supports the students' internships through presentations about various digital preservation projects, professional training (conference poster creation), and reflection
- PI courses + digital curation internships = Thinking like a digital curator
  - Cognitive Apprenticeship

# Cognitive Apprenticeship : Background

- First articulated in a 1989 article (Brown, Collins, & Duguid 1989)
- Cognitive
  - Focus on the mental skills and thinking associated with learning a domain, practice, skill
  - Thinking processes are embedded in the traditional physical notions of apprenticeship
- Apprenticeship
  - The notion that learners are “encultured” in a particular domain, practice, community
- Making thinking visible
  - Translating the reasoning and strategies that experts employ to solve complex problems into a student learning environment.



# Designing CA Learning Environments

- The Cognitive Apprenticeship framework is based on four dimensions (Collins, Brown, & Holum 2002):
  - Content
  - Method
  - Sequencing
  - Sociology

# Elements of CA : : Content

- Domain knowledge subject matter specific concepts, facts, and procedures
- Heuristic strategies generally applicable techniques for accomplishing tasks
- Control strategies general approaches for directing one's solution process
- Learning strategies knowledge about how to learn new concepts, facts, and procedures
  - Coursework in digital preservation

# Elements of CA :: Method

- Modeling teacher performs a task so students can observe
- Coaching teacher observes and facilitates while students perform a task
- Scaffolding teacher provides supports to help the student perform a task
- Articulation teacher encourages students to verbalize their knowledge and thinking
- Reflection teacher enables students to compare their performance with others
- Exploration teacher invites students to pose and solve their own problems
- Course lectures
- In class activities
- Course assignments
- In class participation, course assignments
- Online Portfolio System, class discussions
- Internships



# Elements of CA : : Sequencing

- Global before local skills focus on conceptualizing the whole task before executing the parts
- Increasing complexity meaningful tasks gradually increasing in difficulty
- Increasing diversity practice in a variety of situations to emphasize broad application
  - SI 581 foundational, required course, prerequisites, placing of students in internships



# Elements of CA : : Sociology

- Situated learning students learn in the context of working on realistic tasks
- Community of practice communication about different ways to accomplish meaningful tasks
- Intrinsic motivation students set personal goals to seek skills and solutions
- Cooperation students work together to accomplish their goals
  - Internships, Online Portfolio blog, peer mentoring



# Conclusions

- Challenges in applying the CA model:
  - Sequencing
    - Requiring interns to have completed prerequisites
    - Schedule of course offerings
    - The consultant – intern continuum
  - Sociology
    - Peer mentoring
    - Encourage use of the Portfolio System blog

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- Advisory Board
- Internship site supervisors
- Students

# References

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