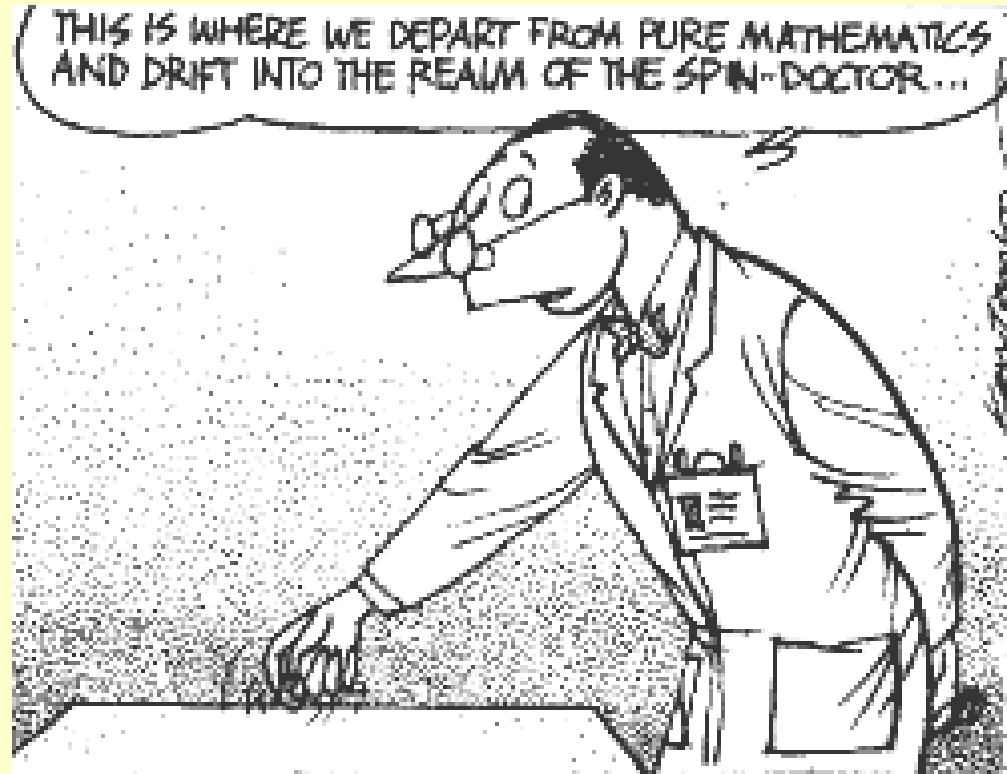


*Synergies Sparked: A Research  
Agenda for Practicing  
Professionals*

*Anita Coleman, Asst. Professor  
University of Arizona  
Tucson*

● *Coleman's research agenda spans both sides of the information coin; she tries to examine representations of information and information usage in a unified program of inquiry. The research goal is to expand and integrate knowledge about uses and users in the organization of digital information and libraries. Using selected projects over the last 5 years as examples, Coleman will identify some ways to design, conduct, and manage doable research projects while also meeting the day-to-day demands of being a practicing professional. The focus, however, will be on the development of a cohesive research agenda that exemplifies and synchronizes with the values and challenges of practice, besides improving the quality of LIS research.*



*Source: Robert Matthews (columnist, Sunday Telegraph, UK -  
Matt's Stats)*

*<http://members.fortunecity.com/templarser/spinning.html>*

# Outline

- ★ *My Research Agenda (incl. motivation)*
  - ★ *Instruments of Cognition*
  - ★ *dLIST*
- ★ *Developing a research agenda*
  - ★ *Designing (research projects)*
  - ★ *Managing (research projects)*
  - ★ *Dissemination*
- ★ *Sample Sub-disciplinary Research Agendas*

# Bare bones research

- ◆ Distinct phases
  - ◆ Topic selection
  - ◆ Literature review
  - ◆ Study Design - Human subjects (IRB approvals)
  - ◆ Pilot/Conduct study
  - ◆ Analyze results
  - ◆ Publish your research
  - ◆ Next project please

# Roles of Research in Practice: To Nurture, Enhance, Rejuvenate *Connections*

*Synergies*



*Conflict*

Image Source: [joanofparkdale.com/](http://joanofparkdale.com/)

*Truth*

*Accuracy*

*How does research  
inform practice & vice  
versa?*

# Motivations

- ★ Attitudes, Beliefs, Passion
- ★ Skills
- ★ Research & Discourse in various disciplines
  - ★ Is it all just techno-lust?
  - ★ Information and Communication Technologies
    - ★ Technologies - information organization
    - ★ laptops, wireless networks, Internet, digital objects, digital resources, Adobe Acrobat reader, digital libraries, digital repositories
    - ★ Uses of ICTs
    - ★ Users of ICTs (non-users)

# Concepts and Approaches - ICTs

- ★ Concepts
  - ★ Barriers (example: access)
- ★ Research Communities (identify who and what)
  - ★ Social informatics
    - ★ Social aspects of computerization
      - ★ Kling, Rob
- ★ Computer Mediated Communication
  - ★ Lee Sproull & Sara Kiesler, *Connections*
- ★ Human Computer Interaction



# Library and Information Science

- ★ Organization of Information
  - ★ Bibliography, Cataloging, Classification, Controlled Vocabularies, Indexing
- ★ Human Information Behaviors
  - ★ Information needs, Uses of Information, Information Seeking behaviors
- ★ Scholarly Communication
  - ★ Bibliometrics, Informetrics, Scientometrics, Librametry

# Library & Information Science

- ★ Digital Libraries / Digital Repositories
- ★ Human Computer Interaction (HCI)
- ★ Information Retrieval (IR)
- ★ Information Architecture (IA)
  - ★ Andrew Dillon
- ★ Knowledge Management
- ★ Multimedia
  - ★ Gary Marchionini

# My Research Interests

## ★ Organization of Information

### ★ Complex objects

- ★ Digital information; Networked

- ★ Learning objects: Scientific models, Interactives

### ★ Embedded small technologies

- ★ Hyperlinks - this is a [hyperlink](#); Citations - as Web links

## ★ Human Information Behaviors

- ★ E-learning, interdisciplinary contexts

- ★ Interaction behaviors & scholarly comm.

# *What are citations?*

*“Citations provide pellets of the peer recognition that is central to the normative reward system of science.” Merton (2000, p. 438)*

- ★ Citations serve two different functions

- ★ Symbolic institutional

- ★ maintains the character of scientific intellectual property

- ★ Instrumental cognitive

- ★ Leads readers to assess the validity claims made in the citing paper

# Research Questions

- ★ *What are the different types of citations and web links that can be found in instructional materials?*
- ★ *Why do students use citations and web links?*

# Data Collection & (Analysis)

- ★ You can't analyze what you haven't collected
  - ★ Citations and Web links (Counts)
  - ★ Citation and link content/context analysis (Categorization)
  - ★ User study (Two types of written surveys and follow-up focus group interviews)
  - ★ Usage tracking (Monitoring student activity on Web links in the course pages)

# *Instruments of Cognition - Logistics*

## *★ Semester 1 (Fall)*

### *★ Research proposal*

*★ Collaborators*

*★ Proposal Submitted*

*★ Funded*

*★ Planning begun*

*★ Instruments  
(Protocols)*

*★ Human Subjects*

*★ Roles nailed*

## *★ Semester 2 (Spring)*

### *★ Data gathered*

*★ Surveys & Focus Grps*

## *★ Summ & Semester 3*

### *★ Analysis & Sharing*

## *★ Semester 4*

### *★ Written*

*★ Accepted for publ.*

## *Instruments of Cognition - Study*

- Spring 2003, Course based in the Geography & Regional Development Dept., College of Social & Behavioral Sciences
- On-campus + Interactive Learning Modules + Labs
  - ILMs provide the theory, the labs the practice; the on-campus, real-time lectures served as the bridge between theory and practice.
    - 10 ILMs, Glossary, 12 lectures, 12 labs; No text
    - Each ILM had a similar structure



# Participants

- 45 students participated
- Total class enrollment of 90
- Full participation turned out to be lower: mean  $n=26$

Limitations - how much can you generalize?  
Questions about quantitative/statistical approaches and *small n studies*

# Findings

- The typical student in this GIS course was
  - Male
  - Caucasian
  - Undergraduate senior
  - In the age group of 20-30
  - Was from out-of-state
  - Majoring in Regional Development
  - Worked fewer than 20 hours a week in a job

# Nature of citations & web links

- ★ 10 citing documents (ILMs)
  - ★ Size: 50.2 MB
  - ★ Glossary had 315 terms
  - ★ 16 bibliographic citations and 20 Web links (navigational links not included)
- ★ Previously established categorization scheme (Duncan et al, 1981) of form and context (Implied purpose of the link)

# Nature of Citations

- Form
  - 16 citations
    - Books
    - Illustrations (130)
- Context
  - Definition
  - Example
  - Illustration

# Nature of Web Links

- Form
  - 20 links
    - 8 \*.edu, 8 \*.gov, 2 \*.org, 2 \*.com
- Context
  - Historical, Biographical information; Further detail; Data; Example
- Content
  - URL; Text; Graphic, Directive

# Results - Use and Non Use

- ★ The number of students who did not use the citations and links is greater than those who used them.
- ★ Reasons for use
  - ★ Starting points *“Citation offers a starting point from which to become really familiar with the history and information about GIS”*
  - ★ Further details *“I wanted to receive more information about what ArcView has to offer.”*
  - ★ Clarification *“I was curious to know about Ian McHarg. Confused because I thought he did something else.”*

# Reasons for Non Use

- ★ *Time constraints*
- ★ *Information overload*
- ★ *Uninteresting*
- ★ *Familiarity*
- ★ *Irrelevance*
- ★ *Information elsewhere*
- ★ *Technical problems*

# Cognitive Instruments?

- Written comments analyzed in terms of five rudiments of cognition.
- These include:
  - Anxiety
  - Arousal
  - Attention
  - Motivation
  - Self-regulation



# Summary

Citations did not generate anxiety; links generated a greater negative or apathetic response

Simplistic conclusion: citations and links don't arouse

In general citations didn't gain attention but when they did it was to trigger a memory recall function; some web links were successful in gaining attention

Exploratory learning behaviors stimulated by self-regulation

# Suggestions

- ★ *Categorize links as required, recommended, optional*
- ★ *Present citations and web links as web citations*
- ★ *Highlight citations and web links distinctively*
- ★ *Compile lists (Lists of examples)*
- ★ *Integrate the diverse IT environments*
- ★ *Rate the quality of the citations and web links*

# Limitations & Challenges

- ★ Small study (participation rates fluctuated)
- ★ Human subjects (too many protocols)
- ★ Technical problems (Usage tracking with monitoring software had to be discarded)
- ★ Presentation of results
  - ★ Negative findings about ICTs are not well received by anybody
  - ★ Infrastructure for E-Learning research
- ★ Collaborative research (comm. & conflict mgmt skills)

# Sustainable information behaviors

- ★ Four months ago at the CRITO Hour - slide #23 of 27, URL: <http://dlist.sir.arizona.edu/861/>
- ★ Expand the study - More students; More courses (and more of conscious design); More disciplines
- ★ Investigate options for partnering - CRITO
- ★ Establish a test bed for e-learning (integrating digital libraries & learning) - SDSC + NSDL
- ★ *Theory of sustainable information behaviors*
  - ★ Information *Quality* not Quantity

# Scholarly Communication

- ★ Use of IT for scholarly communication
  - ★ Interested in affordances and barriers
  - ★ Invisible colleges (communication colleges)
  - ★ Specific technology: Digital Repositories - Open Access Archives
  - ★ Open Access for LIS
  - ★ dLIST (Digital Library of Information Science & Technology) <http://dlist.sir.arizona.edu/>
  - ★ DL-Harvest - <http://dlharvest.sir.arizona.edu/>

What is dLIST?

- Digital repository – cross-institutional, cross-disciplinary, subject
- Open Access Archive
- For the Information Sciences
  - Archival Sciences, Library and Information Science, Information Systems, Museum Informatics,
- Founded in 2002
- All material types (research, teaching, practice)



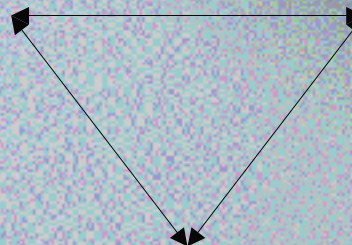
# Goals and Objectives

- To serve as a cross-institutional discipline repository for the Information Sciences.
- To build a Library and Information Science/Studies information commons (communities and collections)

- Connecting the communities

**Education**

**Practice**




**Research**

DLIST -- Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://dlit.dlib.org

File of Help Firefox Support Plugins FAQ DLIST - DL-Harvest Home ArXiv Collection



## Digital Library for Information Science and Technology

[Home](#) | [About](#) | [Browse](#) | [Search](#) | [Register](#) | [User Area](#) | [Credits](#) | [DL-Harvest](#) | [Help](#)

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Search the Titles, Abstracts and Keywords



**[DLIST 2005 Survey](#)**

Take our survey and help us better improve DLIST.

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View items added to the archive in the past week

**[Simple Search](#)**

Search the archive using the most common fields

**[Advanced Search](#)**

DLIT

start

http://www.dlib.org

dlit.dlib.org - OpenP...

DLIT

7:55 PM



# More information



- Cheryl Malone, Co-Editor
- Advisory Board
- Is Indexed in
  - DL-Harvest
  - Google & Google Scholar
  - OAIster

# Creation Origins

- Mapping IS/IT – sharing informetrics datasets
  - Sustainable information behaviors
  - Not everybody may want to or be able to afford an institutional repository
- Software – open source or proprietary
  - Digital libraries, digital repositories – is there a difference? Greenstone, dSpace, Eprints
  - Choice of metadata frameworks

# Self-Archiving

Self-archiving is the practice of depositing digital copies of one's papers (works) into an OAI-PMH compliant digital repository

- Self-register with an open access archive
- Create metadata
- Deposit your papers
- Include the link (url) in your website

DLIST User Area Homepage - Coleman, Anita - Mozilla Firefox

http://dl.isan.vt.edu/eflux/ahome/it

DLIST

## Digital Library for Information Science and Technology

[Home](#) | [About](#) | [Browse](#) | [Search](#) | [Register](#) | [User Area](#) | [Contact](#) | [DL-Harvest](#) | [Help](#)

### User Area Homepage - Coleman, Anita

Welcome to the registered user area of DLIST. Please click on one of the options below.

#### Items in your Workspace

**[Begin a New Item](#)**

This will create a new item, start editing it, and allow you to attach files. You must deposit the item for it to be submitted to the archive. Deposited items will not appear until they have been checked by a user with full responsibility. You should review your existing items if you are a new member or if you have deposited an item on a PC.

These are items you are currently in the process of depositing. These will not be considered for the archive until you deposit them.

Unit 01 of 951 [Exp.](#) [Deposit](#) [Use as template](#) [Delete](#)

#### Pending Items

You currently have no pending items.

**[View/change your user record](#)**

Select this option to see your user record, and to correct or update your user information.

**[Change your subscription options](#)**

Select this option to change your subscription. This allows you to instruct the archive to automatically email you with lists of documents deposited that match your criteria every day, week, or month.

**[Change your Email Address](#)**

Change the email address which eprints has for you.

**[Change User Login](#)**

Log in to DLIST as a different user. There is

Linux

START | [http://www.isan.vt.edu/eflux/ahome/it](#) | [dl.isan.vt.edu/eflux/ahome/it](#) | [DLIST - User Area Home](#) | 10/22/2011

## Reasons to self-archive

- Global Impact
- Wider visibility
- Open research



# Digital Library for Information Science and Technology OAI Harvester

[Home](#) | [Search](#) | [Archives](#) | [Links](#) | [DLIST](#) | [About](#)

DLHE

**DL Harvest Stats**  
DL Harvest currently has 12787 papers from 12 archives indexed.



[Advanced Search](#) | [Browse Archives](#)

Search papers for:  [N/N] [Search]



The DLIST is the initiative of the [School of Information Resources](#), the [Library Science and Learning Technologies Center](#), [University of Arizona](#), [Sweet's Library Co.](#), [DLIST](#) is a joint effort from the [University of Arizona College of Social and Behavioral Sciences](#) and the [University of Illinois at Urbana-Champaign Center for Internet Technology, Immersive Applications and Learning](#), [Arizona State University](#), [Arizona State University](#), [DLIST](#) is a joint effort from [EPRI](#), [University of Arizona](#), [University of Illinois at Urbana-Champaign](#) that are part of the [Open Access Initiative for Metadata Harvesting \(OA-21\)](#). All content on this site is provided as a service to the Information Technology and Service Recovery Lab.



Contact Details:  
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DLHE

## Issues we've tackled

- How does the LIS field practice Open Access?
- Privacy, Copyright Transfer Agreements
  - CTAs of LIS Journals for the presence of Self-archiving
- Focused crawling and harvesting; Research communities; Federated searching; other (programmatic & manual)
- Services
- Internships & Coursework
- Promotion, Outreach
- Business models - OA



*Just what are sustainable information behaviors?*





# Sample RQ & RA

- ★ Replication, Cumulation, Prediction
- ★ Information Behaviors
  - ★ Replicate the Instruments of Cognition study
  - ★ Develop the line of research further – focus on use and non use
- ★ Scholarly Communication
  - ★ Replicate the SA (OA) study in other disciplines
- ★ Usability studies - Evaluation of User Interfaces (example, dLIST interface)

# Discussion

- Non -users (of libraries)
  - Studying non-users
  - Example:
    - Practice: Roving reference - Residence Halls Reference
    - Design and conduct a information behavior study by observing students in the halls
- The tragedy of reinventing new roles for librarians
- Loyalty to discipline vs. institution

# Self-discipline

- Do research as an integrated, synergistic, activity with daily practice
- Integrating research with practice requires self-discipline (professionals already have these skills)
  - Motivation (use intrinsic/extrinsic rewards)
  - Small is beautiful - start with small projects (example: design one semester & do it the next) accomplishments towards a larger agenda
  - Set daily time even if only 30 minutes, to read + write “research”

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## ★ Qualitative Research

- ★ Creswell, John W. Qualitative inquiry and research design: Choosing among five traditions.
  - ★ Five traditions: Biography, Phenomenology, Grounded theory, ethnography, case study
  - ★ Theoretical assumptions – e.g. postmodernism
  - ★ Page 112-113 – Data collection activities and the five traditions
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- ★ DLIST Advisory Board: <http://dlist.sir.arizona.edu/advisoryboard.html>
- ★ DLIST Internships:  
<http://dlist.sir.arizona.edu/pubs/interns/dlistinterns.html>
- ★ RSS subscription to DLIST:  
[http://dlist.sir.arizona.edu/perl/latest\\_tool?output=rss](http://dlist.sir.arizona.edu/perl/latest_tool?output=rss)
- ★ DLIST Papers and Publications: <http://dlist.sir.arizona.edu/pubs/>
- ★ DLIST Services & Forms: <http://dlist.sir.arizona.edu/forms.html>
- ★ DL-Harvest – open access aggregator for LIS –  
<http://dlharvest.sir.arizona.edu/>
- ★ About DL-Harvest – [http://dlharvest.sir.arizona.edu/service\\_provider.php](http://dlharvest.sir.arizona.edu/service_provider.php)
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  - ★ Daniela Solomon – in progress.
- ★ About Me – <http://www.u.arizona.edu/~asc> and <http://radio.weblogs.com/0109575/>

# *The End!*

★ *Thank you!*

★ *Q & A*

★ *Contact: asc at u dot arizona dot edu*