TITLE: Digital Reference Research: Fusing Research and Practice
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ABSTRACT: Presentation on the digital reference research agenda.
KEYWORDS: digital reference, virtual reference, research
Digital Reference Research: Fusing Research and Practice

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Digital Reference Research Agenda

- Defined as a Reference Document that Seeks to Indicate:
  - The scope and scale of a phenomena
  - What is known about a given phenomena under investigation
  - What gaps are recognized in the understanding of a phenomena
  - A common belief of the priorities of in filling the gaps in understanding
Background

- VRD 2001 Closing Session Call for “Moving Beyond 1000 flowers”
- Digital Reference Research Symposium
  - http://quartz.syr.edu/symposium
# Background: White Papers

## Tasks
- Define the topic under consideration
- Review the current state of the art in this area
- Provide some empirical data regarding issues and strategies
- Offer options and SPECIFIC recommendations for how best to resolve the issues and make some progress in this particular area.
- Clarify the issues/challenges that need to be addressed

## Topics
- Question Negotiation in an Electronic Environment
  - Janes
- Education for Digital Reference Services
  - Smith
- Standards, Systems and Software for Digital Reference
  - McClennen
- Fit of Digital Reference into the Digital Library Arena
  - Pomerantz
- Policies and Standards for Digital Reference in Consortia
  - Whitlatch
- Digital Reference in Primary and Secondary Education
  - Lankes
- Image Intermediation
  - Goodrum
Symposium

• Harvard University
  – August 1-3 2002
  – 35 participants from:
    • Libraries
    • Academia
    • Government
    • International
    • Vendors
Background: Synthesis

- Track leaders at 2002 Virtual Reference Desk Conference
- ACRL PIL Publication
- JASIS&T
- RUSQ?
Progress Through the Agenda

Conceptualization: Determining the fundamental field and conceptual structure of the field

Operationalization: Translating the abstract concepts into actionable items and questions

Implementation: Obtaining results from the research questions and putting them into practice
Arms’ Thought Experiment

• What contribution would a digital reference researcher make that would be significant and recognized by peers in other disciplines?
The use of human intermediation to answer questions in a digital environment

How can human expertise be effectively and efficiently incorporated into information systems to answer user questions?
The Model

Digital Reference

- Economics
- Education
- Information Policy
- Law
- Sociology
- Communications
- Behavior Lens
- Systems Lens
- Digital Libraries
- Information Retrieval
- Computer Science
- Effectiveness and Efficiency
- Expertise
- Information Systems

Question Components
- Answers
- Questions

Assumptions
- Human Need
- Digital Difference
Question Components
Definition & Question

• The use of human intermediation to answer questions in a digital environment

• How can human expertise be effectively and efficiently incorporated into information systems to answer user questions?
The Model

- Economics
- Education
- Information Policy
- Law

- Evaluation Lens
- Policy Lens
- Systems Lens
- Digital Libraries
- Information Retrieval
- Computer Science

- Sociology
- Communications
- Behavior Lens

- Cognitive Psychology

- Effectiveness and Efficiency
- Expertise
- Information Systems

- Question Components
- Assumptions
- Answers
- Questions
- Human Need
- Digital Difference
One System Model

- Question Acquisition
- Triage Center
- Answer Formulation
- Tracking
- Experts
- Resource Creation
- Q&A Archive
- User
- Web Resources
Evaluation

Digital Reference

- Economics
- Education
- Information Policy
- Law
- Policy Lens
- Systems Lens
- Digital Libraries
- Information Retrieval
- Computer Science
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- Behavior Lens
- Communications
- Cognitive Psychology
- Effectiveness and Efficiency
- Expertise
- Information Systems
- Assumptions
- Questions
- Answers
- Human Need
- Digital Difference
Behavior
<table>
<thead>
<tr>
<th>Human Expertise</th>
<th>Policy</th>
<th>Systems</th>
<th>Evaluation</th>
<th>Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needed Staff Level Expertise and Training</td>
<td>How is human output incorporated into systems components (such as a knowledge base)</td>
<td>What is the perceived benefits of human mediation (familiarity of human voice? content expertise? instruction?)</td>
<td>Do users ask questions differently when they know a human intermediary is involved?</td>
<td></td>
</tr>
<tr>
<td>Efficiency and Effectiveness</td>
<td>What limits should be placed on a service and how are they determined?</td>
<td>What level of automation can be used in digital reference?</td>
<td>What metrics are needed to determine cost/value in digital reference</td>
<td>Does knowledge of cost in digital reference effect behavior?</td>
</tr>
<tr>
<td>Information Systems</td>
<td>How can digital reference systems be constructed to protect individual privacy, and licensing while achieving maximum benefit for an intended community?</td>
<td>What are the required components of a digital reference system?</td>
<td>What are appropriate performance metrics for system evaluation?</td>
<td>How do experts and users interact in a digital reference system?</td>
</tr>
<tr>
<td>Questions</td>
<td>How do services determine out of bound questions?</td>
<td>What systems work best as an interface to get at user questions?</td>
<td>Have questions qualitatively changed over time in digital reference (gotten harder)?</td>
<td>What digital aids can be used to aid users construct questions?</td>
</tr>
<tr>
<td>Answers</td>
<td>What policies do or should bind service responses (copyright)?</td>
<td>Can knowledge bases be better used to provide answers to some types of questions?</td>
<td>How do you determine “right” and “wrong” answers?</td>
<td>What are the necessary components of an answer needed to meet a user’s information need?</td>
</tr>
</tbody>
</table>
## Research Matrix

<table>
<thead>
<tr>
<th>Human Expertise</th>
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<th>Behavior</th>
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</thead>
<tbody>
<tr>
<td>Efficiency and Effectiveness</td>
<td>Abels</td>
<td>Nicholson</td>
<td>McClure et. al.</td>
<td>Janes, et. al.</td>
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<tr>
<td>Information Systems</td>
<td>Lankes, McClennen</td>
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<td>Questions</td>
<td>Pommerantz</td>
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<td>Smith</td>
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<td>Answers</td>
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<td></td>
<td>Staffing Requirements</td>
<td>Specifications for Knowledge Bases</td>
<td>Better Feedback and Evaluations</td>
<td>Staffing and Marketing</td>
</tr>
<tr>
<td>Efficiency and Effectiveness</td>
<td>Service Level Policies</td>
<td>Greater Scale</td>
<td>Better Economic Evaluation</td>
<td>Marketing</td>
</tr>
<tr>
<td>Information Systems</td>
<td>Automated Policy Enforcement and Protection</td>
<td>Better Software Options</td>
<td>Benchmarking for Software</td>
<td>Better Interfaces</td>
</tr>
<tr>
<td>Questions</td>
<td>Consortia Specifications</td>
<td>Better Interfaces</td>
<td>Staffing and Budgeting</td>
<td>Better Websites</td>
</tr>
<tr>
<td>Answers</td>
<td>Consortia Rules</td>
<td>Greater Scale</td>
<td>Better Evaluation (55% Rule?)</td>
<td>Better Answers</td>
</tr>
</tbody>
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Research and Practice

• Is Research Important to Practitioners
  – Research without Practice is Ineffective
    • Limited utility to academics
    • Impossible to truly verify results in a “professional” context
  – Practice without Research is Inefficient
    • Constant reinvention of practice
    • Lack of benchmarks and best practices
    • Lack of economies of scale

• Development Process was Model of Joint Practice/Research Development
Can’t We All Just Get Along?

• One Use of the Agenda is to Cross Academic and Practice boundaries
  – Library Type, Division, Institutions, Etc.

• Digital Library-Empowerment
  – “Research” Focus versus “Library” Focus
  – “Old Style Librarians” Equivalent to “Ignore”
  – NO Digital Library without a Digital Librarian!
Questions?