Information literacy – research based on evidence and experience

Study of doctoral students – information horizons methodology, phenomenography

Results: analyses – metaphors, examples

Three patterns of information use

Recommendations

Conclusions
What can we learn about information literacy with the use of graphical representations of information landscapes of users?

- How is information use experienced?
- Which patterns can we identify in information strategies of PhD. students?
- Which metaphors hidden in information horizons are useful for information literacy research?
Larger project – information behavior of PhD. students: a qualitative study
- 19 doctoral students
  - Semi-structured interviews
  - Information horizons: maps of resources
  - drawings

Differences between disciplines and individuals
Information horizon:

- A map of resources, relations, social networks, people – for information use

- Holistic picture of information environment, information landscape – determined cognitively, emotionally, socially

- Tradition in information science: e.g. Sonnenwald et al., Erdelez et al.

- Visual dimension of information (Hartel), data visualization techniques
Differences in experiencing the phenomenon:
information landscape, information environment
  - Personal view – idea, visualization

Related research in information science:
  - Phenomenography, information experience, informed learning, Limberg, Bruce et al.,
  - Information practice, culture: Webber, Johnston,
  - information landscape: Lloyd, Whitworth
INFORMATION LANDSCAPE
STUDY: DOCTORAL STUDENTS

- Information horizons – part of semi-structured interviews (19 students)

- 17 information horizons

Demographics:
  - Sample: 4 selected universities in Slovakia
  - Representatives of main traditional disciplines (e.g. philosophy, medicine, law, informatics, physics)
  - age: average 26.5, 9 males, 8 females, SSH: 9, NS:4, TS:4
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<thead>
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<th>Attribute</th>
<th>Frequency of Attributes</th>
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<tr>
<td>Gender</td>
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<td>M-9</td>
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<td>Year of Study</td>
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<td>Predominant IR (E vs P)</td>
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<td>Predominant IR (IR vs H)</td>
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<td>Journal Articles</td>
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<td>Internet – WWW – Google</td>
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<td>Social Networks</td>
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<td>Colleagues (Work)</td>
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<td>Colleagues (PhD. Students)</td>
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<tr>
<td>Friends</td>
<td>2</td>
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<tr>
<td>Other</td>
<td>3</td>
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Priorities:
- People: Advisors/experts, colleagues – closest relationships
- Electronic resources – empirical sciences, technical sciences

Documents – most important:
- From reference resources to primary documents

Information strategies:
- Browsing, filtering, monitoring, citation chaining

High granularity (categorization): social sciences, humanities
INFORMATION HORIZONS: EXAMPLES
Informal resources: e.g. pub, concert, media

Special resources: e.g. citations, e-lectures, technical information, court documents, mathematic exercises

Metaphors analyzed:
- Problem solving area,
- Complex interactions ("sun"),
- Knowledge "pool",
- "Integrated circuit",
- "Tree of knowledge" – knowledge growth
## RESULTS: INFORMATION HORIZONS: PATTERNS

<table>
<thead>
<tr>
<th>Information patterns</th>
<th>Metaphors</th>
<th>Relations</th>
<th>Activities</th>
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</thead>
<tbody>
<tr>
<td><strong>Evolutionary</strong></td>
<td>Steps, knowledge tree, Fan, plus, spiral, sun, globe of knowledge</td>
<td>Levels, strata, hierarchy, branching</td>
<td>Evolution, growth, discovery, adding,</td>
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<tr>
<td><strong>Interactional</strong></td>
<td>Centristic, star, information pool, integrated circuit, confluence, sun</td>
<td>Hierarchy, oriented relations, associations</td>
<td>Multiple interactions, filtering, selection, networking</td>
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<tr>
<td><strong>Sequential</strong></td>
<td>Problem solving, figure, steps</td>
<td>Successive phases Chaining, chunks</td>
<td>From reference sources, from Google, from me, citation chaining</td>
</tr>
</tbody>
</table>
Multiple interactions, directed linking with resources
Finding context, making sense
E.g. multiple loops, "sun"
Natural sciences, social sciences
EXAMPLE – INTERACTIONAL PATTERN
- Information problem solving
- Information process: Filtering, chaining
- Technical sciences
SEQUENTIAL PATTERN - EXAMPLE
Knowledge growth
Learning
Understanding,
  ▪ Cognitive development
  ▪ Steps, spiral
  ▪ Humanities and social sciences
EVOLUTIONARY PATTERNS - EXAMPLE
DIFFERENCES IN INFORMATION STRATEGIES

- **Sciences, natural sciences:**
  - Monitoring – key authorities: electronic journals, experts

- **Technical sciences:**
  - Electronic resources, Information problem solving, common spaces (collaboratories)

- **Social sciences:**
  - Monographs, deep categorization of information / resources

- **Humanities:**
  - Monographs, own knowledge and emotions, meditations, (poetry)
RecommendaTions

- Information literacy development
  - Cognitive authorities: advisors, known sites, useful strategies
  - Awareness of relevant (electronic) resources
  - Communities – communication, information sharing

- Digital services and digital libraries – information ecology
  - Interactive interfaces: interactional patterns
  - Concept mapping and terminological development
  - Navigation, categorization
  - Social networks
CONCLUSIONS

- Information literacy in research and education - part of information culture
- Expand to personal knowledge development and personal information management
- Expand to workplace and worldview
- Value for the community
- Ethical implications – information use and production
REFERENCES