Methodological Literacy of Doctoral Students – an Emerging Model

Jela Steinerová

Comenius University Bratislava, Slovakia

steinerova@fphil.uniba.sk

Agenda

- Concepts of information literacy
- Studies of relevance and information ecology
- Study of information practices of doctoral students
- Methodological literacy – a model
- Conclusions / recommendations

Objectives and contexts

- Determine methodological literacy as part of information literacy
- Contexts:
  - Information interactions: information behavior
  - Doctoral students: young experts – research, teaching, learning
  - Information literacy – as information practice

Sources of the concept of information literacy

- „Guided learning" (Kuhlthau, Maniotes, Caspari)
- „Seven faces" (Bruce)
- Digital literacy – „knowledge assembly" (Bawden, Robinson)
- Contexts: doctoral students in education, research, workplaces

Information Literacy

Information practices

Values
Evaluation of information

Information use

Understanding of information

Research literacy

Social-structural literacy

Construction of knowledge

Critical literacy

Personal information management
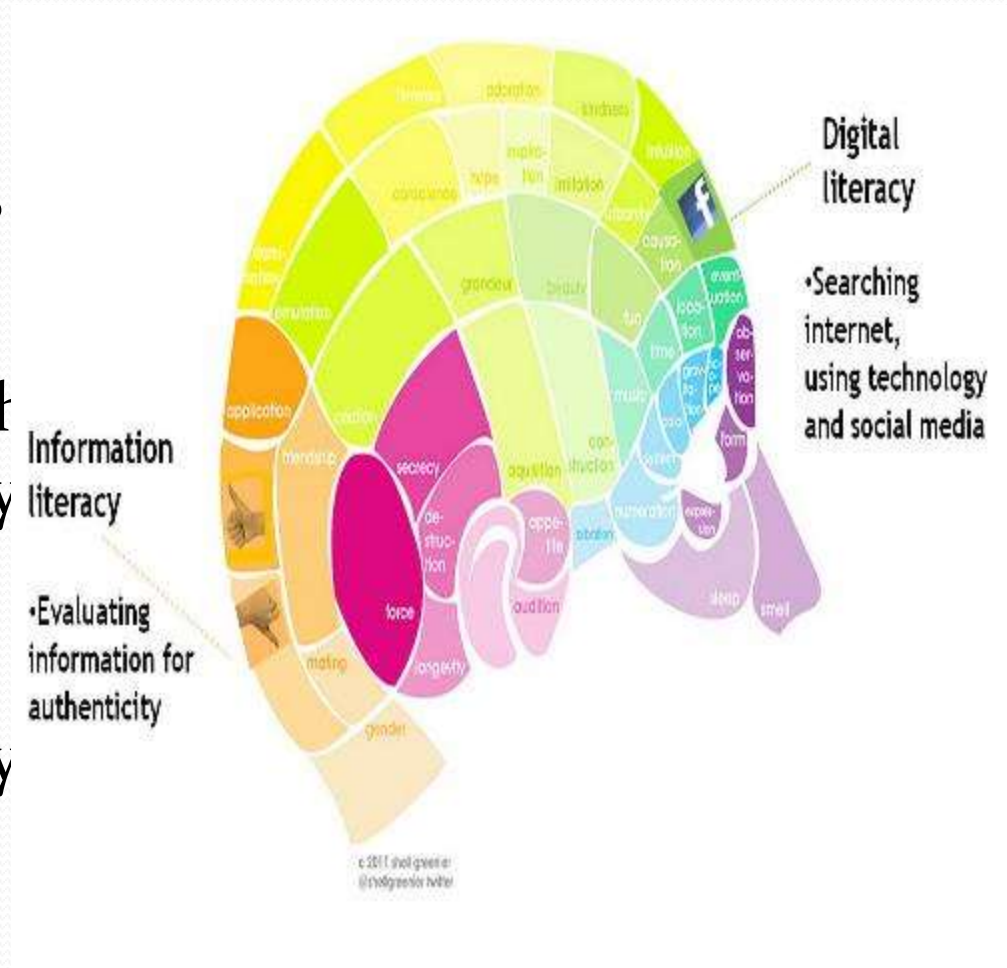
Own empirical studies

Relevance study

- 2005-2007, 21 PhD. students
- Ecological information literacy: semantic, cognitive, social dimensions
- Relevance assesment, tools for filtering

Information ecology - study

- 2010-2011, 17 managers
- Enhance interest, motivation, tools

Study of information practices of doctoral students

- Which information interactions are crucial for research and study?
- Which information interactions compose th methodological literacy
- Which knowledge is needed for methodological literacy

Digital literacy

- Searching internet, using technology and social media

Information literacy

- Evaluating information for authenticity

Study of information practices of doctoral students

Identify needs, practices

Model interactions

Derive recommendations

The concept of the research

Research behavior	• selection of topic • planning of the research process
Information behavior in information use	• information strategies, practices • serendipitous information gathering
Information gathering and seeking	• types of sources • information horizon
Organization of information	• sorting of sources • sorting tools
Social media	• use • benefits
Information behavior in production	• publishing • types of sources; selection of journals, publisher, forms

Doctoral students in information environment
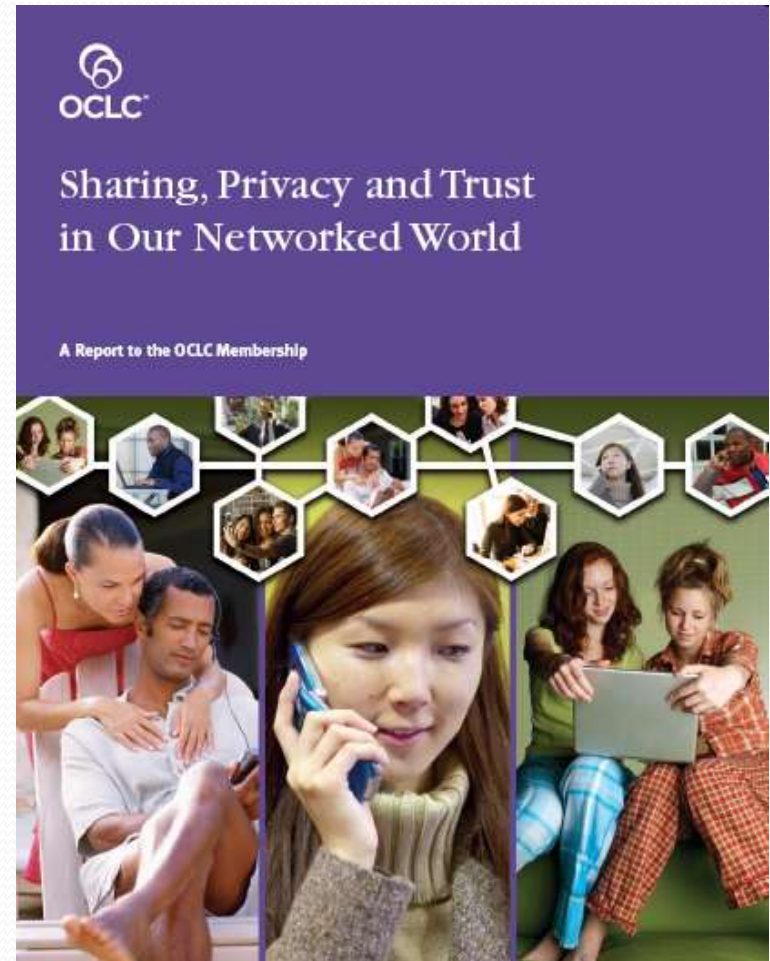
Data acquisition and analysis

- Qualitative study:
- Semi-structured interviews
  - 18 doctoral students, selection of different disciplines (e.g. philosophy, social psychology, mathematics) 10 men, 8 women, average age: 26,9
  - Subjects from 3 universities in Slovakia
  - Visualization of information horizons
- Analyses: content analysis, conceptual analysis

Results: information strategies

Browsing keywords

Google, Google scholar

Digital libraries, electronic databases

Blogs, wikis

Social media, discussion groups

Results: information needs

Curiosity

Verification

Problem solving

Argumentation

Elaboration

Information sharing / social media

Feelings

positive
- Joy, happiness, relief, self-consciousness
- Finding information

negative
- Anger, frustration, disappointment
- Inaccessibility of information, barriers, lack of time
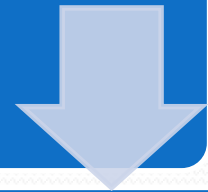
Academic community

Academic community

Supervisors

Foreign experts

Concept definitions

Relationships

Information literacy courses

Academic webpages

Academic community

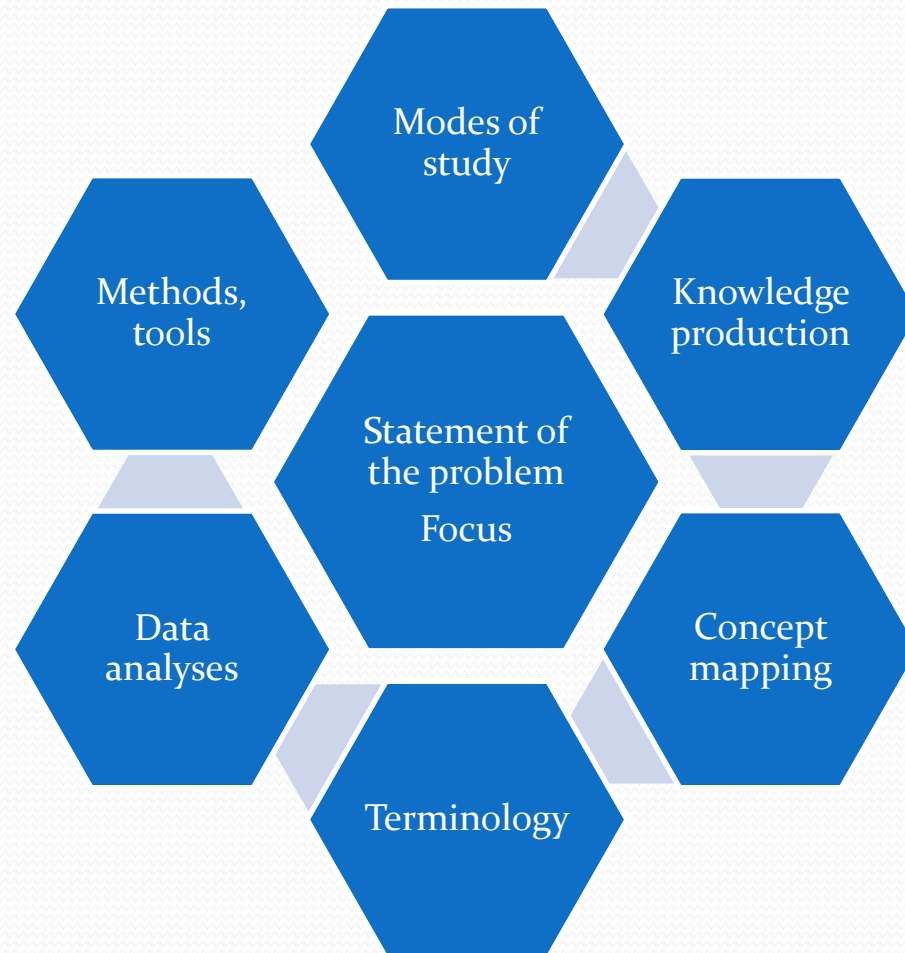| navigation	communication	systems
• Guide in contexts • Information literacy trainings	• International mobility • Assessment of publishing	• Disintegration • Information overload

Methodological knowledge

Proposals for help

Writing works
- Collaboration with colleagues
- Integration of systems

Citing
- Ethics
- E-learning
- Information literacy

Shared use
- Information sharing
- Use of digital sources

Community characteristics of information practices

Common values: curiosity

Collaboration, critical thinking

Terminology: disovery of knowledge

Research ethics: methodological tools

Common characteristics

Content	Context	Social networks
• Availability • Visibility	• Methodology • Disciplines • Project • Tasks • Processes	• Experts • Networking

Differences in disciplines

Interpretations, cognitive filtering

Data analyses, modeling

Laboratory experiments, modeling, design

Experiments, modeling, development

Methodological literacy

- Knowledge and skills in problem statement, project management, analysis, synthesis, interpretation, methodological paradigms and methods
- Abilities to apply the konwledge in research projects and publishing

- Principles:
  - Values, community, tools, contexts
  - Information interactions: orientation, navigation, knowledge organization, learning, social networking

Model of Methodological Literacy
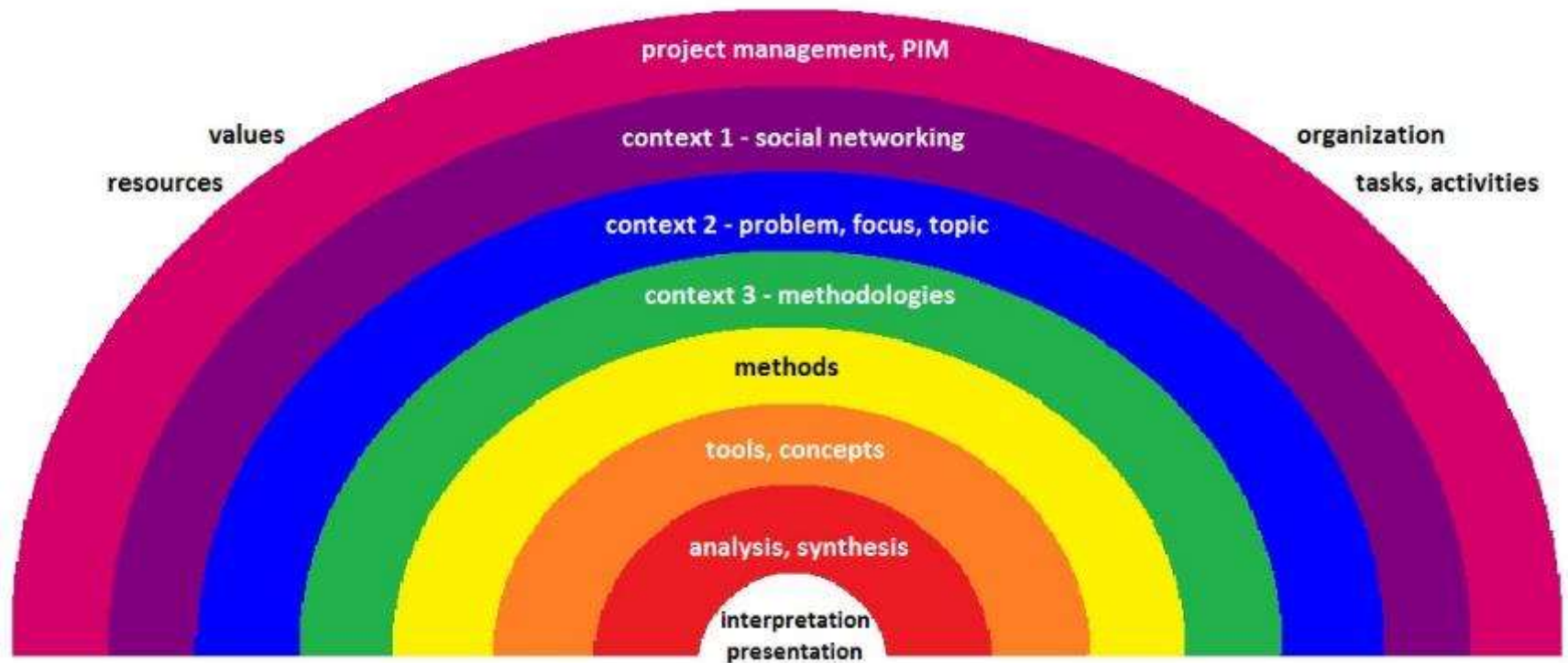
Recommendations

- Support for methodological literacy in:
  - Advanced information seeking and use
  - Conceptual infrastructure, relevance
  - Visualization of knowledge in information sources
  - Interactive communication and collaboration
  - Writing theses, synthesis, interpretation, presentations
  - Publishing, building expert networks

Conclusions

- Multifaceted model :
- Need to cultivate information styles and methodological literacy
- Features: map into digital libraries, community portals
  - Value-added services:
    - E.g. collaborative searching, social networking
    - Consulting, peer-reviewing, technical writing
    - Methodological awareness

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