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Socially-Aware Informal Learning Support: Potential and Challenges of the Social Dimension



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Motivation: The Social Context Matters!

- Paradigm shift in technology-enhanced learning
 - from formal & organized towards informal, networked
 - instead of "content is king", now "context is king" (P. Baumgartner)
 - process-embedded learning, learning in context, ...
 - new system paradigm: learning support in open environments instead of closed learning environments

- The social dimension
 - roles of learner and teacher are changing situatively
 - growing importance of social networks (learning is a social activity)
 - informal teaching situations: it does matter "who is the other side"

- Should learning support not become socially aware as well?



Outline

- **Potentials**

- why do we want systems to be socially aware?
- what are showcases for these potentials?

- **Challenges**

- why is it hard?
 - what prevents us from large-scale usage?
 - what are first steps to cope with the challenges?
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Potentials



Social People Finder & Network Management

- First set of shortcomings of expert finder applications
 - do learners always want to have experts?
 - doesn't the social relationship towards the expert matter?

 - Social factors
 - asking for help means admitting a weakness, exposing vulnerability
 - subjective relevance matters
 - not: the ultimate expert (objective relevance)

 - Generalizable to partner search (research projects, cooperative industry projects)
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Socially-Aware Mediation of Communication

- Second set of shortcomings of expert finder applications
 - the side of the expert is not appropriately considered
 - annoyance of the expert because of overload

 - But...
 - it is not objective overload and bad timing
 - rather: missing consideration of how the informal teacher views the quality of social relationship

 - First solution: balance the recommendation of teachers
 - Second solution: communication mediation
 - take into account interests of both sides to avoid annoying forms of communication
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Challenges



Challenges

- 1 ▪ Social Context is hard to describe
- 2 ▪ Social Context is hard to acquire
- 3 ▪ Social Context is hard to make use of
- 4 ▪ Social Context is a sensitive issue



What do we need?

- 1 ▪ **Social Relationships Ontology**
 - 2 ▪ **Social Relationship Mining**
 - 3 ▪ **Methodological framework** for socially-aware learning support
 - 4 ▪ **Privacy preservation methods**
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Social Relationship Ontology

- Describe social relationships
 - at different levels of abstraction
 - along different criteria
 - trust, loyalty, expectancy of reciprocity, reliability ...
 - from a subjective point of view
 - Existing Approaches
 - several FOAF extensions
 - activities in social network analysis
 - they take an objective (whole-network) point of view
 - Visualization in sociograms
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2

Social Relationship Mining

- Wide range of social networking approaches
 - low level of differentiation
 - usually a relationship intensity, co-occurrence, or roles
 - objective point of view
- Better approach: egocentric networks
 - mailbox
 - address book, buddylists
 - interconnecting with social networking platforms (people tagging)



3

Methodological Framework

- Contextual factors are usually interdependent with respect to the impact on "relevance"
 - how is the effect of a certain quality of relationship
 - to which degree does the social relationship influence it
 - when do I want social awareness?
 - serendipity effects
- Empirical studies are needed
 - sociology can contribute
 - but usually not differentiated enough



4

Privacy Preservation

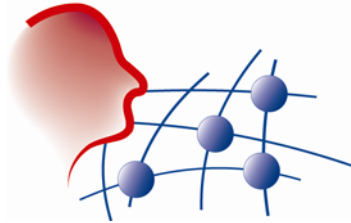
- Already the low detail of SNA is problematic
 - who is the outsider
 - who is the hub
 - whole network approaches usually conflict with privacy protection laws (e.g., in Germany)
- With the increasing level of detail and the subjective opinion about the quality of relationships:
 - revealing asymmetric opinions
 - damaging effect of making explicit
- Principle: only for the individual and adaptation to the individual, no global analysis
- Problem: socially-aware applications can reveal the quality of relationships indirectly (via their adapted behavior)



Summary

- Social awareness of learning support seems to be the next frontier of context awareness
 - potential to provide more (subjectively!) relevant recommendations
 - but poses even more challenges, especially with respect to the sensitivity of the data
 - social relationship data **will be** damaging beyond one's own environment
- Next steps
 - test ideas within scientific collaboration processes





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