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?
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)

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
Socially-Aware Opinion Sharing & Resource Ranking

- Willingness to share your evaluation of what is relevant and good gives away a competitive advantage

- Analysis in applied research institutes revealed
  - high degree of uneasiness of sharing with anyone (especially competing institutes)
  - but also high degree of willingness to share with individuals to whom you have good relationship (even in competing institutes)
  - trusting the opinion of others also depends on your subjective opinion of the person

- We need
  - socially-aware sharing policy
  - socially-aware ranking for results (those we trust most)
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
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)

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
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