An Investment Decision for Teachers?!
The Role of Social Capital in Twitter Conversations among Teachers

Martin Rehm, Michael Kerres, Ad Notten

UNU-MERIT Conference: Innovation & Governance in Development
26-28 November, Maastricht, The Netherlands
Networks of Practice (NoP)

“a larger, loosely knit, geographically distributed group of individuals engaged in a shared practice”
(Wasko & Faraj. 2005. p. 37)
Community of Practice
“people typically value and **protect** what they know”  

“most teachers […] are accustomed to designing teaching activities **in isolation** […]  
(Hou, Sung, & Chang, 2009, p. 101)
Social Capital
“relational resources embedded in the cross-cutting personal ties that are useful for the personal development of individuals”

(Tsai & Ghoshal, 1998, p. 464)

Revolutionary rise of social capital
“[…] individuals create social capital at unprecedented pace and ever-extending networks.”

(Lin, 1999, p. 45)
“Social capital“ offers one possible perspective to analyse SNS (e.g. Tong, Van Der Heide, Langwell, & Walther, 2008)

The open exchange of information allows individuals to accumulate social capital in ever increasing networks (Lin, 1999)

The possibility to access and acquire social capital provides an incentive to (pro)actively engage into (online) networks and possibly influence their structure and content (Bourdieu, 1986)
Three Dimensions of Social Capital

(Nahapiet & Ghoshal, 1997)

Structural social interactions

Cognitive shared code

Relational assets such as trust
Data collected: 22.05. – 28.07.2014

• #edchat
  – Users: 20,012
  – Tweets: 56,194

• #edchatDE
  – Users: 406
  – Tweets: 5,215

weekly live-chats
the latest trends and developments in
education, as well as the integration of
(new) media into the lesson plans and
broader curricula
Method

i. Users metrics
   - Tweets, Mentions, Replies to, Followers, Followed

i. Social Network Analysis
   - Degree, Betweenness, Closeness, Cluster

i. Semantic Network Analysis
   - Top-100 Hashtag Pairs
**ANATOMY OF A TWEET**

- Hashtags - you may use multiple hashtags in a single tweet
- Mention - we have tagged another user by using their handle
- Short URL using custom branded URLshortner
- Interact with this tweet (Reply, Retweet to share on your stream, favorite it or do more with this tweet)
- Click to see tweets and replies/favorite/retweets

---

- The New York Times: @nytimes
- Follow @NYTimesTheater for live coverage of tonight's #TonyAwards, starting soon nyti.ms/17B8GT6

Max 140 characters

---

Expand to see replies/favorite/retweets in the same page
Social Network Analysis

• Twitter networks are scale free; Tweets, Mentions and Replies all follow a power law
• Twitter networks are directed and can be weighted
Social Network Analysis

**General measures:**
In- and Out-Degree

**Centrality measures:**
Betweenness
Closeness

**Centrality related measures:**
Structural holes (Burt’s measure of constraint)
Clustering (Louvain Method – modularity optimization)

Clustering: Louvain Method (Multilevel Coarsening & Single Refinement)
Layout: Kamada-Kawai (Optimized Inside Clusters); Node Size: Degree; Edges > 5
Social Network Analysis

Semantic network

• A network representing semantic relations between concepts or topics.
• Hashtags represent topics
• We focus on the top 100 hashtags
• Networks as visualized are sparse
• “Local” #edchatDE network is topically more specific, and includes the “larger” #edchat networks’ topics as an important component.
#edchat
• Networks of Practice (NoP)
• Yes: “larger, loosely knit […], geographically distributed group of individuals engaged in a shared practice”
  (Wasko & Faraj. 2005. p. 37)

• Social Capital
  – Structural
    “homophily”, structural holes & bridge
  – Cognitive
    ontology/categorization, shared code

• different „investment strategies“
An Investment Decision for Teachers?!  
The Role of Social Capital in Twitter Conversations among Teachers

Martin Rehm, Michael Kerres,  
Ad Notten

UNU-MERIT Conference: Innovation & Governance in Development  
26-28 November, Maastricht, The Netherlands