A Conceptual Model for Analysing Informal Learning in Online Social Networks for Health Professionals

HIC 2014

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XIN LI
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- and clinical issues...
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Endocrinology
Associate Clinical Professor, Baylor Health Care System

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Learn From Experts
• What is CPD?

• Issues on CPD
  – Do not provide opportunities to develop new understandings, skills and capabilities (Institute of Medicine, 2010; Sandars et al., 2012)
• Self-directed learning
• Online social networks could complement (or even replace other modes of) CPD as an informal learning channel (McGowan et al., 2012)
Motivation

- Increasing interest in developing online community for health professionals but many appear to fail (Sandars et al., 2012)
- Online interaction among health professionals is lower (Ikioda et al., 2013)
- Insufficient understanding on the efficacy of online social networking in supporting informal learning (Institute of Medicine, 2010)
- difficult to know how to increase CPD efficiency and effectiveness
What is the nature of the CPD that occurs in online social networks established for health professionals' informal learning?
• Traditional approach – content analysis (Richardson et al., 2012)
• Social network approach – social network analysis (De Laat & Schreurs, 2013)
• Social learning analytics
  – content analytics, social network analytics, discourse analytics, context analytics, and disposition analytics (Ferguson & Shum, 2012)
Conceptual Framework

Methods for analysing dimensions of informal learning in OSN for health professionals

- Social network analysis
  - Learning interaction
    - Participation
    - Connectedness

- Content analysis
  - Learning process
    - Cognitive presence
    - Social presence
    - Facilitation presence
    - Learning presence

- Survey
  - Learning outcome
    - Valued activities
    - Gained knowledge
    - Changed practice
    - Improved performance
    - Redefined success
Learning Interaction (social network analysis)

- Participation
  - Centrality analysis

- Connectedness
  - Regular equivalence block modelling
  - Stochastic actor-oriented models (Snijders et al., 2010)
# Learning Process (content analysis)

<table>
<thead>
<tr>
<th>Construct</th>
<th>Measurement</th>
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| **Social presence**| - Emotional Expression: expression of feelings, unconventional symbolic representations. E.g. humor, self-disclosure  
                        - Open Communication: reciprocal and respectful communication, mutual awareness and recognition of each other’s contributions. E.g. replies, quoting others, direct comment to someone, appreciation, agreement, complements, encouragement.  
                        - Group Cohesion: activities that build and sustain a sense of group commitment, building cohesion and sense of belonging, dialogues. e.g. encouragement, help, support |
| **Facilitation presence** | - Instructional Management: structural, setting topics, design methods  
                                - Building Understanding: productive and valid knowledge construction, challenging and stimulating process, creating effective group. E.g. draw in less active participants, acknowledge individual contribution, focus discussion, facilitate educational transaction  
                                - Direct Instruction: assess the discourse and efficacy of the educational process, present content, question, guide, summaries, confirm understanding, constructive explanatory feedback |
| **Cognitive presence** | - Triggering Event: recognizing the problem, sense of puzzlement  
                               - Exploration: divergence within a message /community, information exchange, suggestions for consideration, brainstorming, leaps to conclusions  
                               - Integration: convergence among group members/within a message, connecting ideas, synthesis, creating solutions  
                               - Resolution: vicarious application to the real world, defending solutions |
| **Learning presence** | - Self-efficacy  
                               - Effort regulation: persistence and ability to deal with failure and setbacks in the process of completing learning related tasks |
## Conceptual Framework

### Learning Outcome (survey)

- Social value creation model (Wenger et al., 2011)
- CPD outcome evaluation model (Moore et al., 2009)

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<tbody>
<tr>
<td>Valued activities</td>
<td>The participants’ self-reports on the value of participation and connections.</td>
</tr>
<tr>
<td>Gained knowledge</td>
<td>The participants’ self-reports on skills acquired, information received, and inspiration gained.</td>
</tr>
<tr>
<td>Changed practice</td>
<td>The participants’ self-reports on innovation in practice such as new ways of doing things.</td>
</tr>
<tr>
<td>Improved performance</td>
<td>The participants’ self-reports on personal and organisational performance.</td>
</tr>
<tr>
<td>Redefined success</td>
<td>The participants’ self-reports on change of understanding of what matters.</td>
</tr>
</tbody>
</table>
Validate framework with an online forum for Australian doctors

• established in 2008
• 11000 members, mainly are GPs
• 40 topic areas, 8000 posts


Thank you!