Network Analysis for Educational Leaders: A workshop

Sue Nichols & Bec Neill
University of South Australia
ACSA Conference
Adelaide September 30th

http://www.fmsasg.com/SocialNetworkAnalysis/SocialNetworkAnalysis_Graph.gi
Thank you for attending this workshop. You have been allocated a number: 1, 2 or 3. Please find the other people with the same number as you.

We will begin the workshop by sharing our: 1) experiences 2) expectations and 3) questions about network analysis for educational leaders.
Introducing Ourselves

**Sue Nichols**
Senior Lecturer. Coordinates the course: *The Networked Educator* in the Master of Education.

Uses network analysis as a researcher in the field of early childhood.

**Bec Neill**
Project Officer and Researcher: *DFAT Australian Aid Developing Community Supports to Supporting Literacy for Preschoolers* (Fiji)

Uses critical systems thinking to identify opportunities for agency within social networks.
Session Overview

• What is critical systems thinking?
• A case study: Exploring women’s relations with ICT and agency within network society
• Using critical and creative systems thinking methods
• Emerging perspectives and opportunities for networked educators
What is critical systems thinking?

- General systems theory (Boulding, Rappoport, Brofenbrenner and more)
- Wicked problems and systems thinking (Churchman, Mitroff & Linstone, Checkland)
- Going further with critical systems thinking (Ulirch, Midgley, Jackson, Flood)
- Holistic and critical approaches provide for and require creative adaption to problem situation

To make senses of network society it is necessary to move towards relational views of technology as an aspect of embodied life, where boundaries and relations between human and machine maybe blurred, but narratable regardless.

1858 - 1877

1858 - 1877

1940 - 1950

1940 - 1950

1980

1980

1990

1990

1996

1996

2000

2000

2006

2006

First personal computer

First personal computer

Wireless networking

Wireless networking

WWW1 & early mobile phones

WWW1 & early mobile phones

WWW2 High speed internet

WWW2 High speed internet

Social media emerging

Social media emerging

Aust telegraph network

Aust telegraph network

First computing machines

First computing machines
Exploring women’s relations with ICT and network society

- Seeing, hearing and thinking with stories (Boje, Frank, Kearney, Bell)
- Expressing complex and interwoven relations narrated by stories through with pictures (Checkland)
- Pictures allow for both:
  - A functionalist mapping of problem domain (Yourdon)
  - Critical mapping of problem domain (Senge 1990, Jackson 2003 Chap 5)

Thinking-in-images might enable us “to move beyond the categorised and known (‘knowledge’) into new experiences and new capabilities”.

(Cranny-Francis 2008, p. 364).
Some ICT-mediated parent-school-agency relations

- Voluntary work stimulates ICT learning and home adoption
- Provide ICT learning support
- Education Standards Consultative Committee
- Preschools
- Primary Schools
- Assistive Communication Devices
- Place hope in new technologies to improve children's access to learning opportunities
- Provide mechanisms for inclusion for children with special needs
- 2006
- Children's ICT interactions stimulates mothers learning ICT
- Making mistakes useful learning strategy
Some ICT-mediated parent-child relations...

- Functionality plus children creates multitasking time and convenience
- Children's ICT interactions stimulates mothers learning ICT
- Provide 'freeware' technical support and knowledge exchange
- Multimedia capabilities provide safer interactions
- Making mistakes useful learning strategy
- Text messages key form of social contact/social calendar
Further ICT mediated parent-child relations...

- Convergence of technologies rapid and significant (a)
- Text messages key form of social contact/social calendar (b)
- Multimedia capabilities provide safer interactions
- Cognitive and technical solutions used to manage risk
- Making mistakes useful learning strategy (b)
- Use social media to resolve circular policy settings
- Creates unnecessary intrusions on mother time
- Deliver impenetrable tick-the-box service
- 2013

Children's ICT interactions stimulate mothers learning ICT 1

Functionality plus children creates multi-tasking time and convenience

Provide 'freeware' technical support and knowledge exchange (4)
Discussion Time

- What connections are you making with the networked way of representing relations?

- What kinds of (dis)connections might you want to investigate in your site of practice?
Recapping

- Networks are relational
- Connections are made in many ways
- Many kinds of ‘goods’ circulate through networks
- Networks are made from different kinds of connections or ‘ties’
- Networks develop over time
- Networks enable us to be present in more than one ‘place’ at once
- Networking can be disabled and resisted
Investigating networks in an education context

### Case One: ‘Bert’

<table>
<thead>
<tr>
<th>Leadership Role</th>
<th>Associate Principal secondary with responsibility for student engagement. Manages a Student Well-being, Engagement and Learning team (SWEL).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus of network analysis</td>
<td>How the SWEL team operates</td>
</tr>
<tr>
<td>Question</td>
<td>What goods/values flow through the SWEL network and how?</td>
</tr>
</tbody>
</table>
| Tool for Thinking                        | Actor Network Theory  
Consider the human and non-human actors.                                                                                      |
<table>
<thead>
<tr>
<th>Categories</th>
<th>Specifics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human actors in the network</td>
<td>Principal&lt;br&gt;Associate Principal (me)&lt;br&gt;Counsellor&lt;br&gt;International Student Coordinator&lt;br&gt;Learning Support Manager&lt;br&gt;Teachers&lt;br&gt;Mentors&lt;br&gt;Students&lt;br&gt;Parents&lt;br&gt;Student Services staff</td>
</tr>
<tr>
<td>Non-human actors in the network</td>
<td><strong>Computer – Email</strong>&lt;br&gt;iPad&lt;br&gt;Meeting room&lt;br&gt;Sharepoint software&lt;br&gt;Traffic Light Analysis document&lt;br&gt;EyRoll Attendance Reports&lt;br&gt;EyNet SWEL Teacher Advice Form&lt;br&gt;Excel</td>
</tr>
<tr>
<td>Goods/Values circulating</td>
<td>Attendance data&lt;br&gt;Qualitative data relating to student engagement&lt;br&gt;Ideas&lt;br&gt;Support strategies&lt;br&gt;Process documentation&lt;br&gt;Response actions</td>
</tr>
</tbody>
</table>
“I believe that leading other teachers through a process of observing their own networks through the lens of ANT would surprise them, as it did me, that often what we think is at the core of our operations and networks are not always so: non-human actors have as much, if not a greater role to play in our work as educators and there are always new tools and new connections just waiting to make our lives easier, our students more engaged and our human connections stronger.” (Bert)
## Investigating networks in an education context

### Case Two: ‘Ella’

<table>
<thead>
<tr>
<th>Leadership Role</th>
<th>Pre-School Director</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus of network analysis</td>
<td>Realising potentials of networks for child learning</td>
</tr>
<tr>
<td>Question</td>
<td>How can we expand networks for inclusive learning?</td>
</tr>
</tbody>
</table>
| Tool for Thinking        | Systems model of child development (Bronfenbrenner)  
                          | Actor Network Theory |
Preschool Director

- Community
- Child's family
- Preschool child
- Preschool staff: teachers, early childhood workers, volunteers, finance officer
- Education Department office: HR, Regional office, Early Childhood Consultant, Regional Director
- Professional networks: Education Union, Preschool Directors
- Local Primary School: Assistant Principal, Music teacher, Library staff, Library, Playground
- Education Department Support services: Disability Coordinator, Speech Therapist, Occupational Therapist, Preschool Support Worker, ICT support
- Governing Council
Digital technology owned by children: iPads, tablets, iPods, DVDs, CDs, audio books, DS console

Other actors: teachers, preschool friends, family friends, playgroup, swimming or sports lessons

Digital technology owned by parents: TV, iPhone, digital camera, interactive video games, video camera, CD player, DVD player, computer, internet access, gaming console

Non-human actors: books, car, sandpit, toys, cubby house, pets, trampoline
“If there is a ‘Child A’ and a ‘Child B’, their understandings of their world have been generated from very different places dependent upon their previous experiences and cultures. … The young child’s world becomes infinitely larger when even just one of these tangents are expanded upon. (Ella)
”While examining the context of a nodule of my network as a preschool teacher intersecting with ‘Child A’ and ‘Child B’ … I can have the opportunity deepen my relationship and strengthen our network bonds as well as expanding the educational learning spaces for the children.“ (Ella)
Implications

- Network ways of thinking can be used to draw attention to relational aspects of education.
- Network tools for analysis can be used to inquire into connections and disconnections between members of a network.
- Network analysis can draw on educators’ existing repertoires.
- Network analysis gains strength from collaboration.
- Network analysis can be past and/or future oriented.
References

Bell, D 1998, Ngarrindjeri wurruwarrin: A world that is, was and will be, Spinifex Press, Melbourne.
Frank, A 2004, 'Thinking with stories: a dialogical approach to narrative inquiry', *Visiting Scholar Workshop*, 23 February 2004, University of South Australia, Magill, SA.
References Continued


