

Translating Networked Learning: Un-tying Relational Ties Online

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ABSTRACT

This paper explores the social network of learning beyond a functional understanding of social relations. It describes and interprets the realities of networked learning within a particular postgraduate course in an English university setting beyond the network analyses and graphical simulations of a software application. The use of social network analysis (SNA) alongside content analysis has dominated to some extent current studies in the field of networked learning. In particular, SNA has been used to analyse response relations among participants in online discussions in terms of, for example, centrality or strong and weak ties. Beyond relational ties, this paper presents a partial possibility and a different performativity of a network of learning, wherein the strength in relational ties does not only come from notions of centrality and frequency of responses, but also from the *relational effects* of multiple technical and social arrangements and engagements beyond the online environment as negotiated and anticipated among those involved.

Keywords

Social network analysis, virtual learning environment, discussion forum, networked learning

INTRODUCTION

Learning that is social and situated is simply translated to collaboration in online discussion forums. The collaborative process is assumed to take place and transcripts of messages make this process more transparent and therefore, may be analysed to assess the quality of knowledge construction or the community of practice.

Content analysis of messages online has been used to analyse knowledge construction by dividing and categorising messages (Aviv et al, 2003; Lally & de Laat, 2002). However, this method is not able to capture *relations* among messages or participants beyond a semiotic analysis through coding and categorisations.

Social network analysis (SNA) provides researchers in the field of networked learning with yet another method/tool to analyse knowledge construction in terms of social relations. Consequently, the use of SNA alongside content analysis has dominated to some extent current studies in areas relating to NL, such as, asynchronous learning networks (ALNs) (e.g. Aviv, Erlich, Ravid & Geva: 2003), communities of practice (COPs) (e.g. de Laat, 2002) and online communities (e.g. Garton, Haythornwaite & Wellman, 1997).

I would like to consider how a relational tie of a social network of learning has been conceptualised in online discussion forums. I proceed to critically review and suggest that the current construing of social relations is rather a functional perspective of networked learning as dictated by a method/tool in trying to understand the complexity of learning in a technology-mediated environment.

Extending further my suggestion of translating networked learning, I consider the social context that locates the technology at the background and that is seemingly defined to be 'what surrounds' or 'contains' the online discussions. I reiterate notion of context as that 'weaves together' (Cole, 1996) and as both socially and materially constituted (Fox, 2005) and notion of structure as biological and productive (Davis and Sumara, 2003) in translating networked learning. This is illuminated by un-tying relational ties though only in a very limited discussion of a discussion forum in a campus-based postgraduate course in an English university.

MESSAGE THREADS AS RELATIONAL TIES

SNA is used to study relations, which are not attributes of actors. The network structure is derived from the relations among actors and these relations have to be presented in a data matrix. Actors can be persons, organisations, attributes or any set of related entities. To do a social network analysis, ties between actors have to be obtained through relational data. Relational data are ties or links (e.g. contacts, affiliations) that cannot be reduced to individual properties of actors. A tie may be represented simply in a matrix as a binary data, 1 to indicate the presence of a link and 0 to indicate the absence of a link. In the case of SNA in discussion forums,

ties are established through response messages between participants (actors). SNA in ALN's has been mainly used in investigating actors who are not co-located (Aviv et al, 2003).

Using Aviv et al's (2003) paper here as an example, a tie is established with a response message matrix obtained through a Visual Basic conversion program that scans the messages stored in a SQL database thread after thread. If at all I understand message threading, an online conferencing tool or software 'threads' the reply to an original or earlier message. A new thread may be started by posting a message that is not a reply to an earlier message in a forum. In short, a response message or relation is a message threaded after a posted message.

The notion of a tie is not easily grasped. A tie represents an architectural arrangement of a social space and at the same time it is a recorded action of exchange, which becomes a measure of its strength and quality in the virtual environment (Sheller: 2000).

It is almost always amiss that network structures of relational ties are produced through translations of matrices into visual networks or graphical simulations as in turn produced by a software application by some statistical and mathematical analyses are mere traces we as researchers further performed and mobilised as products of the process of learning. We tend to ignore that they are products of the tool, too - of the threads stored in SQL database.

NOTION OF SOCIAL-CONTEXT

Every individual whatever role, status or position is implicated in a web of interactions in a situation. There is no way 'out of the situation' in our engagements, involvements and arrangements with other individuals. Consequently, our learning is always situated. This social perspective on learning both in socio-constructivist and community of practice perspectives shifts our attention to the 'situated', either as knowledge construction in a learning activity or as community in a learning practice.

In this understanding, the social, context or social context of learning is defined within participation and collaboration. In short, in terms of human interactions in a situation, space or environment. Furthermore, '... they (referring to contexts) are commonly treated as purely linguistic, symbolic and experiential entities. This makes contexts look like something that can be treated at will by two or more persons in interaction, as if independently of the deep-seated *material* practices and socioeconomic *structures* of the given culture (Cole, 1996, 66, italics added).

This prevails in research in the areas within and surrounding networked learning, particularly with regards to online discussions or conferences in our content analyses and quite recently in SNA. However, I would like to clarify and emphasise that though there are areas wherein context is understood more as the bounded site or situation, that 'which surrounds' activities or practices. In other analyses or approaches, it has been understood as that 'which weaves together'. In content analysis, this means that the collaborative exchanges among participants in an online discussions weaves its context of knowledge construction. In SNA, this refers to the nodes and links that response relations represent between senders and receivers depicted as a network structure.

At this point, I would like to reiterate with Cole (1996) as quoted above and Fox (2005), that the situatedness of learning in a context must not be limited to the social in terms of human interactions, but must not forget to include and recognise the non-human, the material and the technical.

In an attempt to translate networked learning, I would like to extend its definition to an idea of a network that is not only social in terms of its human interactions, but includes the non-human, material elements not only as tools to be used, but also as *acting*. 'This is not to ascribe freewill to objects, nor to anthropomorphise them, but to recognise that objects *act* upon other objects and upon humans' (Fox, 2005: 3). Consequently, our analyses should not begin and end with human agency.

NOTION OF STRUCTURE

In a network of learning, wherein the social context is also materially constituted, it is almost inevitable to reconsider the notion of structure, particularly of network in this case, to be more than just material or technical. We need a different metaphorical sense and sensibility to the notion of network. I have considered changing the name and present a different metaphor that which is of fluids as suggested by Mol and Law (1994). However, I would not be too quick to use yet another word among the many new ones that have circulated and repeated far and removed from their intended meanings in the area of NL research. There is just too much ambiguity arising from multiple meanings of words and symbols branching out from different historical constructions of different disciplines, particularly from the sciences and the social sciences.

In my mind, we only have to un-delete an architectural sense of structure for a start so when we think of networks we do not think of 'hard' realities and static potentialities. As pointed out by Davis & Sumara (2003),

the meaning of “structure” is commonly associated with reference to buildings implying order, rigidity, permanence and linearity. The meaning I would like to engage with is drawn from a more *biological* sense implying fluidity, growth, evolution and change.

‘When the notion of structure was first applied to buildings, communities, and similar human projects some centuries ago, it was at a time when such forms were understood as much more fluid and contingent’ (Davis & Sumara, 2003, 412).

I would like to go back to this thinking of centuries old from which we could depart into a notion of network that is nebulous and malleable, soft and dynamic (Law, 2000; Mol & Law, 1994; Sheller, 2000). This suggestion does not imply that we have to choose between the two, rather to conceptualise a structural sense of networks that is simultaneously hard and soft, static and dynamic.

I would like to untie the relational ties online and to un-bound network analysis from its functional version of relationality as defined by its sophisticated calculations and visual simulations and explore a *radical relationality* (Law, 2000) beyond the formalism SNA presents us with.

Nothing that enters into relations has fixed significance or attributes in and of itself. Instead, the attributes of any particular element in the system, any particular node in the network, are entirely defined in relation to other elements in the system, to other nodes in the network. And it is the analyst's job, at least in part, to explore how relations - and so entities that they constitute - are brought into being. The implication of this apparently simple move, a move to what we might call radical relationality, is that we arrive at a logic which dissolves fixed categories. Elements have no significance except in relation to their neighbours, or the structure of the system as a whole (Law, 2000, 6).

I would like to be one of the analysts of relations that considers and enacts material entities and structural properties alongside human subjects that constitute the social network of learning without having to differentiate between agency and structure or subject and object.

I do not mean to discredit the value of the performativity of mathematical or statistical formulations in network analysis, however, I would like to explore and attempt a different performativity that permeates shifting structures.

The following sections describe an attempt to perform partially, selectively and conditionally a social network analysis that illuminates network of learning both socially and materially.

A CASE STUDY

In the academic term 2005-2006, I was given the permission and opportunity to get involved in a PGCE History course in an English university. I present partial data from this study to explore the considerations put forward for discussion in the previous sections. There were 21 students in the course. Thirteen decided to get involved plus their tutor in this study. The course used Blackboard and had 14 separate discussion forums. I select a forum named 'Assessment' with a total of 50 messages in my discussions later.

In the following sections, I present the response relations in the Assessment forum. Then, I proceed to illuminate the relations or ties beyond the message threads Blackboard is able to store in a SQL database.

RESPONSE RELATIONS IN A FORUM

The forum was initiated by four messages from TH (the tutor). These were the main threads in these forum. The first thread had 11 messages; the second 11; the third 5 and the last thread 23. The following codes and links visually depicts the relational ties within each thread as visually represented with a *hanging indent* of a posted message under the message its 'replying' to in the Discussion Forum of Blackboard (see Figure 1). In translating this data into a network data, the *indent* becomes a *tie*.

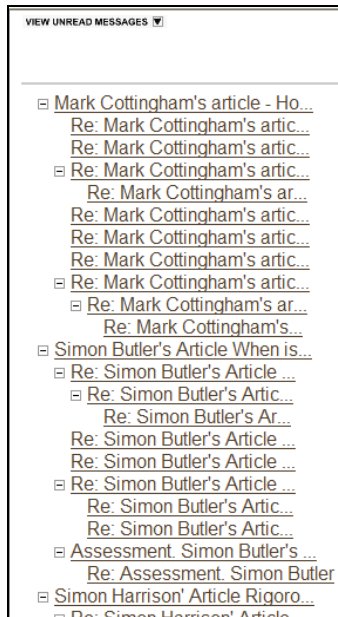


Figure 1. Assessment Forum Threads in Blackboard

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Figure 2. Response Ties in the 4 main threads of the Assessment Forum
The ties in this discussion forum as depicted in Figure 2 may not be simply reduced to the entries in the SQL database or message threads for the following reasons:

For the first thread: H13 acknowledged the postings of others in his message in saying 'I would like to echo the comments made by many in response to this article' and yet a tie is established with H20. H10 posted the last message for this thread after 2 weeks the last message was posted. Is this really a 'responsiveness tie' (Aviv, et.al., 2003) to H15.

For the second and third threads: H13 posted a message for each thread after 6 weeks the last message in each thread was posted. Again, may this be considered as a 'responsiveness tie'?

For the fourth thread: The second message was from H21, but it was posted by TH. Consequently, the third message which was a response to the message of H21 would appear to be responding to a posting by TH. H1 has a 'tie' to H3. However, having read the message, it mentions H12's name and comments on his posting, too. And there is H19 'tied' to H1 and yet in H19's message she comments on H5's and H20's postings. Are these not examples of messages with more than one responses and in effect, more than one relational tie?

In addition, H20's message was posted in this thread because:

'... I would have put this up as a separate notice but I am unable to put up notices in this section - the 'add new thread' button has gone - its a mystery!!!'

UNTYING RELATIONAL TIES

The Reply button is pressed and a message posted not solely as a response to an individual, but also as responses to more than one individual. There were messages in the 'Assessment' forum that acknowledged postings from other participants and yet the Discussion Forum in Blackboard *acts* in ways that limits where a 'tie' may be established as a response. It 'threads' a reply intended to be read by more than one actor to just one.

Furthermore, given the user interface of the discussion forum of Blackboard in Figure 1, responses to H5 and H20 in H19's message 'tied' to H1 in the fourth thread above would be hidden and would only appear to be posted for H1, unless H5 and H20 opens the message in this thread. However, the tendency or priority is to read messages that are directly threaded to one's name in the forum, especially when the number of messages to be read grows.

Participants in the 'Assessment' forum either posted messages once or more than once on the same date as below:

...		
13/10/04 21:58	H5	Butler's article
13/10/04 22:14	H5	Cottingham's article
13/10/04 22:27	H5	Harrison's article
13/10/04 22:32	H5	SPAG
...		
16/10/04 10:30	H10	SPAG - this from [H21]
16/10/04 14:54	H10	Butler's article
16/10/04 15:18	H10	Cottingham's article
...		
06/12/04 15:21	H13	Butler's article
06/12/04 15:33	H13	Harrison's article

06/12/04 15:54	H13	SPAG
...		

Table 1. Postings by 3 Participants

In table 1, H5's four messages are responses to the task posted by TH. H13' postings are tied to H20, H5 and H19 after 6 weeks their messages have been posted. H13's messages are delayed and possibly not intended to be read.

The communicative action or relation is an effect of what the discussion forum of Blackboard stores as a tie, restricted to a location of a message thread and presented in a layout that appeals to dyadic interactions and a message that appears to be a response to one and not many. And possibly in an instance or two, a tie is not really a tie as with H20's last message in the fourth thread above. H20 was not able to add a new thread in the forum as 'the 'add new thread' button has gone'.

And for those who read and not post, they become isolates in the social network of a forum that calls the silent learners 'lurkers'. There are no *reading ties* because readers are invisible participants in online discussions.

RELATIONAL EFFECTS

In looking for relations in online discussions, we are confronted with relational effects in a context that includes both the social and material in its situatedness and in a network that is not merely spatial or structural in an architectural sense.

Response ties were strengthened in some and weakened or broken in others. A tie is not just established by clicking the Reply button in the forum. Moreover, it is constituted by the content of the message as described in the previous section, the structure of the messages in the forum which changes every time a new message is posted or whenever the tutor chooses to delete a message for reasons like flaming, participants and other media or modes of communication. As an example here, the second message posted by TH in the fourth thread was a message from H20, which was sent via email to TH.

In some instances, there were postings relating to school experiences when the students were in placements, which possibly would not be prompted, posted and 'tied' otherwise. For example, H4 posted a message on 16 Oct 2004 saying:

'I think that some of the ideas put forward in this article were very interesting and it would be interesting to try them on my placement. The comments only marking sounds great although I did mention this to my mentor at my placement and he made it clear that he preferred a grade and a single sentence comment!!!'

The course programme schedule of the course tells me that the students started their placements on 12 October 2004.

Yet in others, an article initiates a posting as H15 did:

'... I have just read an article in the TES (15 October 2004) based on a school in Orkney who just uses the system of comments. ... if anyone would like to read the article just let me know and I'll give it to them.'

Here, I have discussed relational ties as effects of both social and material relations. Relations are emergent and heterogeneous products extending beyond the boundary defined within a VLE. Actors do not simply move within the forum space and form network of response ties.

In addition, participants in the forum selectively link elements of past, present and future in what they have experienced, read, heard, said, seen, used, ignored, forgotten and remembered. Thus, relations are effects of the social and material constitutions of networked learning.

PARTIAL CONCLUSION

Response ties in networked learning are relational effects elucidated beyond a thread and beyond the virtual space of the VLE. They are produced within the material arrangements and engagements those involved have had face-to-face, given a task, a school placement, a lesson, an email or a phone call.

Individuals have anticipated and participated in the social network we perform in an analysis and yet they are muted and disconnected in how networked learning is structured and assessed in terms of strong and weak ties or cohesion and equivalence.

As I already said, I do not mean to discredit the contribution of SNA to NL research. I, myself, have chosen to use SNA to further explore the social network of learning as briefly translated in this paper. However, I have chosen to analyse the social relations among students and their tutor online based on their own perceptions of responsiveness.

Before proceeding further, I have to remind myself that SNA is not sufficient to illuminate learning as a network, except in its architectural sense and in a context bounded in space. With this reminder, I make a partial conclusion and open possible relations in discussions, meetings and further reading and analyses.

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