

# An Analysis of Network and Networking Concepts:

## A New Viewpoint for Researchs on School-based Inservice Teacher Education

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(Received September 30, 2004)

### Abstract

This article analyzes the network, networking and related concepts such as network organization, networked organization and network governance, then propose the concept of organizational network and networking, and suggest it as a new viewpoint for researching inservice teacher education from school-based organizational network and networking perspective.

Key words : Network; Networking; Inservice Teacher Education

## 1. Network and networking

According to *Longman Dictionary of Contemporary English* (New Edition, 2003), “network” can be a noun and may refer to: (1) a system of lines, tubes, wires, roads etc that cross each other and are connected to each other, such as telephone network, rail network; (2) a group of radio or television stations, which broadcast many of the same programmes, but in different parts of the same country; (3) a set of computers that are connected to each other so that they can share information; (4) a group of people, organizations etc that are connected or that work together. And “network” can also be a verb and may mean: (1) to connect several computers together so that they can share information; (2) to meet and talk with people who have similar jobs to yours, especially because they may be useful for your work; (3) to broadcast a radio or television programme on several different channels at the same time. “Networking” comes from “network” as a verb, and it refers to “the practice of meeting other people involved in the same kind of work, to share information, support each other etc.”<sup>1</sup>

In his famous and far-influencing book *The Rise of Network Society*, Castells (2000) defines the concept of “network” as “a set of interconnected nodes.” He writes, “A node is the point at which a curve intersects itself. What a node is, concretely speaking, depends on the kind of concrete network of which speak.”

Networks are open structures, able to expand without limits, integrating new nodes as long as they are able to share the same communication codes (for example, values or performance goals). “Networks are appropriate instruments for a capitalist economy based on innovation, globalization, and decentralized concentration; for work, worker, and firms based on flexibility and adaptability; for a culture of endless deconstruction and reconstruction; for a polity geared toward the instant processing of new values and public moods; and for a social organization aiming at the supersession of space and the annihilation of time.” In his book, “networking” is used to refer to the evolution and management of networks<sup>2</sup>.

The notion of a network implies nodes and links. The nodes can be people, teams or even organizations - networks operate at many levels. Common examples are distributed geographic teams in large organizations, or small organizations operating as networks to compete against large corporations. The links are the various coordination and “agreement” mechanisms. In a network, high degrees of informal communications (both face-to-face and over electronic networks) achieve success where formal authority and communications in hierarchical organizations often fail. Two-way links and reciprocity across the links are what makes networks work.

In this article, the term “network” will be used a noun, mainly at the meaning of “a group of people,

organizations etc that are connected or that work together." "Networking" will refer to the functioning and process of networks namely how to develop and run networks.

## 2. Network organization, networked organization, network governance and organizational network

Castells (2000) calls this society based on networking logic (instantaneous flow and exchange of information, capital and cultural communication) as "network society." In network society, organizations naturally should and need transform themselves into network forms. We can get Castells's definition of "network organization" from his definition of "network enterprise:" a specific form of enterprise whose system of means is constituted by the intersection of segments of autonomous systems of goals<sup>3</sup>. That means, the components of the network organization are both autonomous and dependent vis-à-vis the network, and may be part of other networks, and therefore other systems of means aimed at other goals. The performance of a network organization will depend on two fundamental attributes of the network: its connectedness, that is, its structural ability to facilitate noise-free communication between its components; and its consistency, that is, the extent to which there is a sharing of interests between the network's goals and the goals of its components.

"Networked organization" is typically defined as "where independent people and groups act as independent nodes, link across boundaries, to work together for a common purpose; it has multiple leaders, lots of voluntary links and interacting levels."<sup>4</sup> In fact, it has the same meaning with network organization, and the two core points are: (1) patterns of interaction in exchange and relationships; and (2) flows of resources between independent units. The only difference is, "network organization" emphasizes that now these units are in an organization of network form, and "networked organization" emphasizes that these units are networked, connected as an organization.

But the question is, it is a loosely connected relationship among units, and we should not underscore the independence of interacting units. Just

like Benini (1998) points out, "The network in point was a temporary alliance among a pool of partners each capable of contributing something valuable to a short-term project"<sup>5</sup>. In fact, after analyzing many definitions (such as organization network, networks forms of organization, business groups, informal interfirm collaborations) related to this kind of inter-organizational relationships, Jones et al (1997) propose the concept of "network governance," because that "many scholars in management define 'organization,' either implicitly or explicitly, as a single entity. 'Governance' more accurately captures the process and approach to organization among firms that we discuss here." Network governance involves "a select, persistent, and structured set of autonomous firms (as well as nonprofit agencies) engaged in creating products or services based on implicit and open-ended contracts to adapt to environmental contingencies and to coordinate and safeguard exchanges." These contracts are socially-not legally-binding.<sup>6</sup>

This definition is quite reasonable, however, I do not think the network is always "persistent," "members work repeatedly with each other over time," as they defined. Organizations come together to form a network just because they have the same goal to pursue, they need to exchange something and support each other. One distinct feature of network is flexibility, if certain common task is over, readjust, rearrange even disband the network is needed.

Based on the literature on network in Japan and China (In Japan, such as special issues of *Organizational Science on Networking* (1986), on *Group, Organization and Social Network* (1989), and on *Asian Networking* (1997); Imai (1984)<sup>7</sup>; Kaneko (1986)<sup>8</sup>; Imai and Kaneko(1988)<sup>9</sup>; Imai et al (ed. 1988)<sup>10</sup>; Miyamoto et al (ed. 1994)<sup>11</sup>; Kokuryo (1995)<sup>12</sup>; Eshita (2000)<sup>13</sup>; Ito (2002)<sup>14</sup>; Kokuryo et al. (2003)<sup>15</sup>; Paku (2003)<sup>16</sup>. In China, such as Chen (2002)<sup>17</sup>; Liu (2003)<sup>18</sup>; Song (2004)<sup>19</sup>), the main benefits of network can be summarized as: (1) Being closer to the customer - there is rapid communication between those at the sharp-end and those who support them. (2) Maximizing the knowledge potential of an enterprise; network members tap into expertise wherever it may reside. (3) Minimizing disruption; a network has resilience to operate even if some parts fail (e.g. in a natural disaster). (4) Responsiveness and adaptiveness. Like

an amoeba, a network is sensitive to stimuli and adjusts accordingly. And the main characteristics of network are: (1) Gaining authority not from a hierarchy but from recognized ability of node itself. (2) Linking people and teams across conventional boundaries (e.g. departments and geographies). (3) Having members and structures that adapt to changing circumstances. (4) Where management is a sense of mutual responsibility vs. following orders. (5) Exploring ways to work effectively vs. following pre-defined processes. (6) Readjusting or disbanding teams as needed.

Based on these benefits and characteristics, I would like to propose the concept organizational network and networking mainly for my "member-based" idea:

(1) By now, researches on network are always done from an entirety viewpoint, namely how the units should be run as a whole. However, I think more attention should be attached to the individual member of a network, namely how an organization should choose to join a network for support and benefit, how to develop the organization itself in the network environment.

(2) Network is not only a relationship inter-organization, but also intra-organization, and needs its every member to transform its infrastructure even fundamentally. If an organization is only peripherally join a network and keeps its traditional crystalline structure just like before, it is hard for the organization to work well in the network and develop well for itself.

(3) Therefore, by using the term "organizational network and networking," we refer to both the inter-organization and intra-organization structures and functions, both external and internal exchanges and communications of an organization, both static situation and dynamic running of an organization in a network.

### **3. Research school-based inservice teacher education from organizational network and networking viewpoint**

Nowadays, school-based inservice teacher education<sup>20</sup> has been a common understanding of educational researchers. How can we go further in this

field? I think the theory of organizational network and networking brings to us a good research viewpoint.

Network and networking theory came into the world is not occasional, but well based on theories of knowledge management, intellectual capital and learning organization, etc<sup>21</sup>. On the other hand, network and networking is needed to create a Ba for knowledge socialization, combination and creation<sup>22</sup>, to implement a knowledge continuity initiative in the intellectual capital schools<sup>23</sup>, to accelerate the academic foundations of transformation and then make school a learning system.<sup>24</sup> Therefore, by researching the school organizational network and networking, we can unite these theories as one and then make school a really good base for inservice teacher education.

Form the perspective of inservice teacher education, study of school-based organizational network and networking will deal with the following basic: (1) what are the inter-organizational networks: patterns of school with universities, teacher training agencies, academic institutions and other schools, etc.; (2) how is to form inter-organizational networks; (3) what are the intra-organizational networks, such as teacher team work networks; (4) how to transform the infrastructure of school to develop internal networks.

### **Notes**

- <sup>1</sup> Summers, D. et al. (ed.) (2003) Longman Dictionary of Contemporary English (New Edition) UK: Pearson Education Limited, pp.1287
- <sup>2</sup> Castells, M. (2000) *The Rise of the Network Society (Second Edition)*, Cambridge: Blackwell Publisher, pp.501-502
- <sup>3</sup> Castells, M. (2000) *The Rise of the Network Society (Second Edition)*, Cambridge: Blackwell Publisher, pp.187
- <sup>4</sup> Skyrme, D. (1999) <http://www.skyrme.com/insights/1netorg.htm>
- <sup>5</sup> Benini, A. A. (1998) Network Without Center? –A Case Study of an Organizational Network Responding to an Earthquake, <http://www.colorado.edu/hazards/wp/wp100/wp100.html>
- <sup>6</sup> Jones, C, Hesterly, W.S and Borgatti, S.P (1997) A General Theory of Network Governance: Exchange Conditions and Social Mechanisms. *Academy of Management Review*, Vol.22, No.4, pp.911-945

- <sup>7</sup> 今井賢一 (1984) 『情報ネットワーク社会』岩波書店
- <sup>8</sup> 金子郁容 (1986) 『ネットワーキングへの招待』中央公論社
- <sup>9</sup> 今井賢一, 金子郁容 (1988) 『ネットワーク組織論』岩波書店
- <sup>10</sup> 今井賢一, 塩原勉, 松岡正剛 『ネットワーク時代の組織戦略』第一法規出版社
- <sup>11</sup> 宮本孝二, 森下伸也, 君塚大学 (編) (1994) 『組織とネットワークの社会学』新曜社
- <sup>12</sup> 国領二郎 (1995) 『オープン・ネットワーク』日本経済新聞社
- <sup>13</sup> 江下雅之 (2000) 『ネットワーク社会の深層構造』中央公論新社
- <sup>14</sup> 伊藤孝夫 (2002) 『ネットワーク組織と情報』[増補版] 白桃書房
- <sup>15</sup> 国領二郎, 野中郁次郎, 片岡雅憲 (2003) 『ネットワーク社会の知識経営』NTT出版社
- <sup>16</sup> 朴容寛 (2003) 『ネットワーク組織論』ミネルヴァ書房, 263頁
- <sup>17</sup> 陈守明 (2002) 《现代企业网络》上海人民出版社
- <sup>18</sup> 刘东 (2003) 《企业网络论》中国人民大学出版社
- <sup>19</sup> 宋培义 (主编) (2004) 《网络化企业运营与管理》机械工业出版社
- <sup>20</sup> I would like to use the term “inservice teacher education” instead of “inservice teacher training,” because of the very common sense that teaching is a profession, then teachers cannot be simply trained to become professionals, especially to inservice teacher. The other reason is that “teacher education” has been broadly used in recent decades and it refers to both pre-service and in-service teacher education. See Landsheere, G. D (1987) Concepts of Teacher Education. In Dunkin, Michael J. (ed) *The International Encyclopedia of Teaching and Teacher Education*. Exeter: Pergamon Books Ltd. pp. 77-83
- <sup>21</sup> 宋培义 (主编) (2004) 《网络化企业运营与管理》机械工业出版社, 第1-17页
- <sup>22</sup> 国領二郎, 野中郁次郎, 片岡雅憲 (2003) 『ネットワーク社会の知識経営』NTT出版社, 3-59頁
- <sup>23</sup> Kelly, A. (2004) *The Intellectual Capital of Schools*. Dordrecht: Kluwer Academic Publishers, pp.118-134
- <sup>24</sup> Hargreaves, D. (2003) *Education Epidemic—Transforming Secondary Schools Through Innovation Networks*. London: Demos.pp.67-74