IX CONGRESS CONGRESO
ISKO-SPAIN ISKO-ESPAÑA

Valencia 11th, 12th, 13th March 2009   11, 12 y 13 de Marzo de 2009

New Perspectives for the organisation   Nuevas perspectivas para la difusión
and dissemination of knowledge   y organización del conocimiento

AN INVESTIGATION OF THE CAPABILITY OF LIBRARY AND INFORMATION SCIENCE ELECTRONIC DISCUSSION GROUP IN IRAN TO ESTABLISH SOCIAL CAPITAL

Mehri Parirokh

*Associate professor, Library and Information Science Dep. Ferdowsi University of Mashhad, Iran
(mparirokh@gmail.com)*

Shokrieh Ahmadi.

*Master of Library and Information Science, Ferdowsi University Of Mashhad, Iran
(soha12020000@gmail.com)*

Farhad Daneshgar

*Senior Lecturer, Australian School of Business, University of New South Wales, Sydney, Australia
(f.daneshgar@unsw.edu.au)*

ABSTRACT

In the world of scientific communications, social networks can be considered as effective tools for creating knowledge and sharing ideas. The objective of social networks is to promote knowledge through providing connections among individuals and forming social capital. The aims of this study are: i. to acknowledge the type of knowledge communicated in Library and Information Science Discussion Group (LISDG), and ii. to investigate the extent to which the LISDG is capable to establish social capital. To fulfill the first aim, the content analysis was used to analyze 1400 messages in an established social network. The findings show that although most of the messages sent to the LISDG (about 82%) are of "Know-What" type of knowledge, the numbers of "Know-Why", "Know-How" and "Know-Who" types have been increased during the two years period of study. Survey study and questionnaire were used to fulfill the second aim of the study. The results indicate that LISDG possesses required characteristics such as trust, reciprocity, social support, suitable environment, commitment, cooperation and efficacy for being regarded as a social capital.

KEYWORDS

Typology of Knowledge, Social Network, Social Capital, Library and Information Science Discussion Groups ((LISDG)

IX CONGRESS CONGRESO
ISKO-SPAIN ISKO-ESPAÑA
Valencia 11th, 12th, 13th March 2009 11, 12 y 13 de Marzo de 2009

New Perspectives for the organisation Nuevas perspectivas para la difusión
and dissemination of knowledge y organización del conocimiento

BACKGROUND

Communication results in sharing ideas and exchanging knowledge; and social networks are now considered as an effective tool for creating knowledge and enhancing individual and social development. The ultimate goal of social networking is to facilitate communication among people (e.g., specialists and professionals) and creating collective knowledge or social capital. This knowledge can then be used for dealing with social, professional and scientific problems.

Various researchers have already classified knowledge under a variety of perspectives depending on their research goals. This study is partly based on Zeleny's taxonomy of knowledge (2007) for understanding the aim and types of knowledge. This taxonomy is demonstrated in Table 1, below.

Table 1.- Taxonomy of Knowledge (Zeleny, 2007)

	Effect	Purpose (Metaphor)
Data	Muddling through	Know-Nothing
Information	Efficiency	Know-What
Knowledge	Effectiveness	Know-How
Wisdom	Explicability	Know-Why

The rows of Table 1 show four interdependent layers: (i) 'data': it forms a basis for formulating information; (ii); 'information': is needed to be processed in order to create knowledge; (iii) 'knowledge': allows doing right things (effectiveness), and (iv) 'wisdom': is doing the right thing itself (Zeleny, 2007, 3). Zeleny argues that if knowledge is supported by wisdom it would be effective. According to this framework, all types of knowledge are necessary for execution of effective actions. Many people become aware of events and activities and therefore can fit in the first two layers of the Table 1. Many experienced people on the other hand may possess relevant skills to perform certain specialized activities but, few of them know the reason for, and the philosophy behind their activities, and fit in the third layer. Such knowledge or wisdom is not easy to acquire. It needs a creative, dynamic and critical mind (Ibid). Wisdom is crucial for understanding appropriate means, contexts, and platforms which facilitate knowledge processes and knowledge works to go through the above layers, and/to design effective infrastructure support for professional activities. Professional

IX CONGRESS CONGRESO
ISKO-SPAIN ISKO-ESPAÑA
Valencia 11th, 12th, 13th March 2009 11, 12 y 13 de Marzo de 2009

New Perspectives for the organisation   Nuevas perspectivas para la difusión
and dissemination of knowledge   y organización del conocimiento

development process will not be fully optimized if professionals do not pass through these layers. The terms assigned to these layers are shown in column 3 of Table 1. These are 'Know-What', to achieve appropriate awareness, 'Know-How', to achieve suitable skills, and Know Why, to acquire knowledge about philosophy behind actions.

SOCIAL NETWORKS

Social networks are now becoming the unit of analysis in many studies related to the knowledge transfer and exchange, and are considered as effective tools for knowledge creation, and subsequently, development of social capital. Social networks consist of nodes, each node representing an individual or an organization depending on the scope and granularity of the network. These nodes are linked based on different types of interdependency, such as mutual values, views, common beliefs, financial affairs, friendship, trade, etc. In short, a social network is defined as a group of people who are connected to each other through social communications (Garton, et al., 1997)

ELECTRONIC DISCUSSION GROUPS/FORUMS

Communication in social networks occur through various means, such as: e-mail, discussion groups, face to face interactions, interactions within weblogs, wiki's, etc, depending on the mode and other characteristics of communication. Email and electronic discussion groups are the main focus of the present research. Based on the email internet application, the electronic discussion groups provide a platform for group members to share ideas, distribute knowledge, and create new knowledge. It is a generally accepted assumption that as group members participate in various information and knowledge exchanges, the efficiency of social connections will increase (Roselle, 2002). This implies that electronic discussion groups have the potential to establish social networks (Ibid).

SOCIAL CAPITAL

A review of the current literature reveals that there is no single definition for social capital. Fukuyama (in Coleridge, 2007) has defined social capital as the individuals' capabilities for working together in groups or organizations, sharing the same goal. Woolock (1998 in Coleridge, 2004) on the other hand, believes that social capital is information, trust and norms which are formed through social networks. The definition chosen for this research is a combination of the above two definitions, that is, social capital is a social network which has characteristics such as trust, reciprocity, social support, suitable environment, commitment, cooperation and efficacy.

IX CONGRESS CONGRESO
ISKO-SPAIN ISKO-ESPAÑA
Valencia 11th, 12th, 13th March 2009 11, 12 y 13 de Marzo de 2009

New Perspectives for the organisation   Nuevas perspectivas para la difusión
and dissemination of knowledge   y organización del conocimiento

RESEARCH DESIGN

The present study argues that professional communications through Electronic Discussion Groups (EDG) under a social network umbrella have the potential to create social capital. Although EDG in the fields of library and information science has a long history in many parts of the world (and in the case of this study, in Iran, since 1997), not many studies were found in the current literature that specifically focus on effectiveness of EDGs..The present research therefore is designed to fill this gap by investigating the extent to which the Library and Information Science Discussion Group (LISDG) in Iran can be considered as a social capital; the research methodology of this study can then be applied to various other situations.

Aims of the Study:

The first aim of this research is to identify the types of knowledge communicated in LISDG. Zeleny's classification of knowledge (Zeleny, 2007), which is rooted in the Lundvall's classification (Lundvall, 1998) is chosen for the present study. According to this classification provides four types of knowledge including "Know-What", "Know-How", "Know-Why" and "Know-Who". The second aim is to explore the degree of conformity of the LISDG for being considered as a social capital. Factors that are considered include trust, reciprocity, social support, suitable environment, commitment, cooperation and efficacy.

Research Questions

1- What kind of knowledge has been communicated among the members of LISDG?

2- From the members' perspective, to what extent the exchanged messages affect members' individual and professional development?

3- To what extent the LISDG has turned into a social capital?

Survey research and case study methods were used for this research. The data collection methodology is a hybrid method combining content analysis and seeking opinions, using checklist and questionnaire tools.

To answer the first research question, 1904 messages from the LISDG list were reviewed. Those messages that did not focus on professional subjects, e.g., congratulations, condolence, subscription, spam ,etc. were deleted. Data analysis, therefore, was conducted on the 1400 remaining messages.

The population of the study for answering the second research question was all members of the list. The number of members on February 2007 when the study began was 1256 and 297 members responded to the questionnaire. To avoid selection bias, and to provide equal/opportunity to all members for completing the questionnaire, the questionnaire was sent to all members. Earlier similar studies indicate that low response rate should be expected, and this was initially the case for this study. However, after three follow ups, the study succeeded to secure a reasonably high rate of 60% of the sample size completed and returned questionnaires.

IX CONGRESS CONGRESO
ISKO-SPAIN ISKO-ESPAÑA
Valencia 11th, 12th, 13th March 2009 11, 12 y 13 de Marzo de 2009

New Perspectives for the organisation   Nuevas perspectivas para la difusión
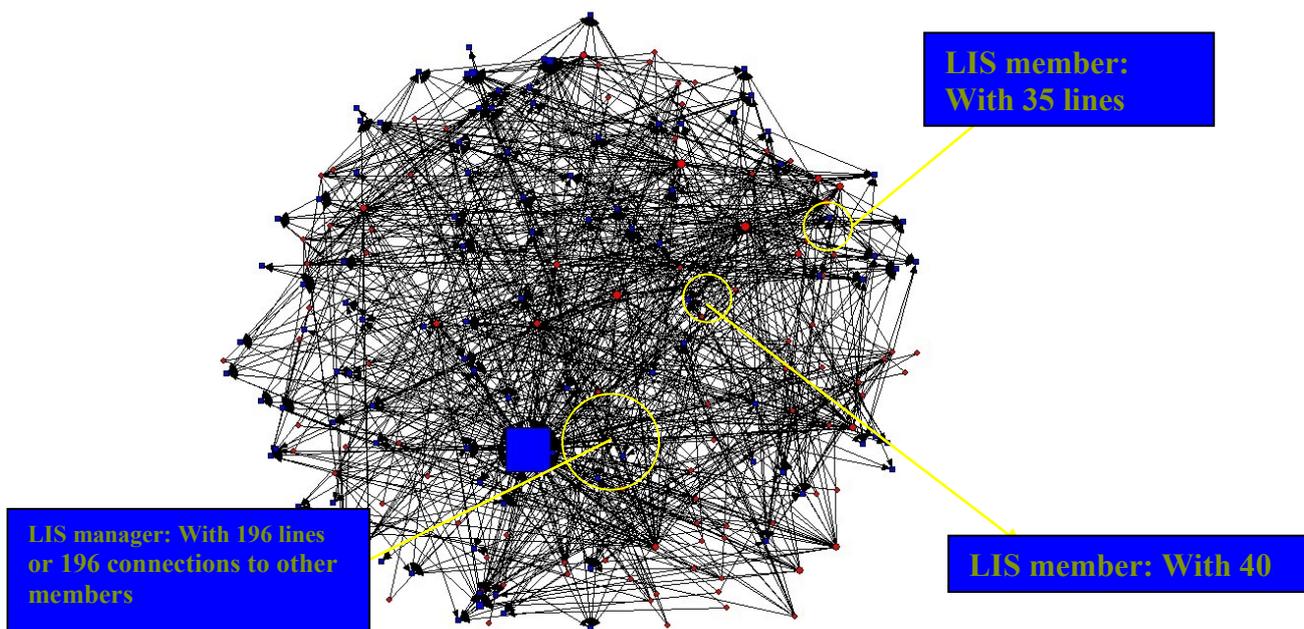and dissemination of knowledge   y organización del conocimiento

In order to maintain validity and reliability of the data collection instruments a pre study was conducted during which 126 messages from different months of the year were reviewed and analyzed. To control the accuracy of assigning different kinds of knowledge to the content of messages, the checklists of the same analysis was implemented by three LIS Master Students. A similar approach was adopted for controlling the accuracy of the content of checklists in the actual data gathering process. In that phase a random sample of messages were examined by an LIS expert. In most cases there was high consistency between the checklists.

For the questionnaire, a pretest of the questionnaire was responded by 7 librarians and 4 MLS students. The value of the alpha Cronbach test was.0/88 indicating that consistency between the questions in different sections was high.

FINDINGS

The analysis of messages showed that 66% of 1400 messages were send by 200 members, or 16% of total respondents. This is in agreement with the Lotka's law that states many of the articles are normally written by little number of writers (Hertzel, 2003).

The number of connections to each member within the LISDG list was calculated using the 'betweenness' scale of the UCINET and Net Draw software. The result is demonstrated in Figure 1. The largest square in Figure 1 shows the most active member in the network .This node is related to the moderator of the list.


Figure 1.- The Communication pattern between LISDG members

IX CONGRESS CONGRESO
ISKO-SPAIN ISKO-ESPAÑA
Valencia 11th, 12th, 13th March 2009   11, 12 y 13 de Marzo de 2009

New Perspectives for the organisation   Nuevas perspectivas para la difusión
and dissemination of knowledge   y organización del conocimiento

The pattern of communication in the above Figure shows that communication has scattered among members although with various rates of intensity. The moderator or leader of the list is not the mere active member; there are also high levels of interactions among other members. This is an indication that the LISDG is already an active social network.

Research question 1: What kind of knowledge has been communicated between the members of LISDG?

The typological analysis of messages show that those with focus on the existence of an entity, and classified under "Know-What" category, are the most frequently generated messages and constitute 82% of all messages (i.e., 1143 messages). Within this category, the news and information about publishing articles, books, running workshops, designing/establishing weblogs or websites, and different activities of libraries and information centers constitute the bulk of messages. This also shows that members receive news in regard to all types of events related to the LIS profession. The concept 'Awareness' is regarded as a major characteristic of any social capital (Royal et.al. 2004); the present study reveals presence of a high level of 'awareness' among the members of LISDG.

In terms of other types of knowledge, although, the numbers were initially relatively few, they have been increasing during the two years period of the present study. This is demonstrated in Figure 2.
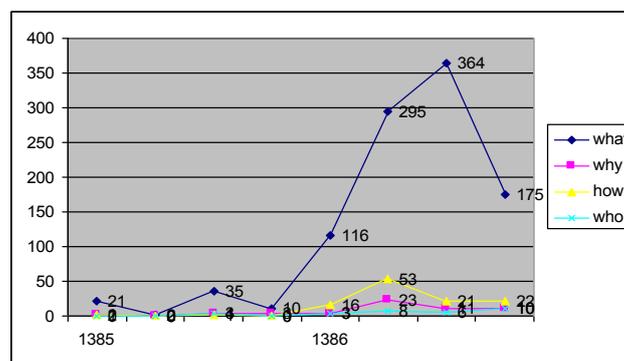
Figure 2.- Frequency of messages and their increase in 2006 and 2007

The growth in all types of knowledge is an indication of active participation of members in exchanging all types of knowledge. The difference between the frequencies of knowledge types is in agreement with Zeleny's findings that suggest a large number of communication is about news, whereas fewer numbers are related to 'skills' and very few are related to the ' wisdom' (Zeleny, 2007).

Research question 2: From the members' perspective, to what extent the exchanged messages affect members' individual and professional development?

IX CONGRESS CONGRESO
ISKO-SPAIN ISKO-ESPAÑA
Valencia 11th, 12th, 13th March 2009 11, 12 y 13 de Marzo de 2009

New Perspectives for the organisation   Nuevas perspectivas para la difusión
and dissemination of knowledge   y organización del conocimiento

The analysis of reactions of member to the first following statement, and their answers to the next question were combined and are summarized in Table2.

- The statement: Although most messages sent to the list are news, they are useful for individual and professional development.

- The Question: How do you evaluate the discussion group in enhancing individual and professional development?

Table2.- Respondents' idea about the effectiveness of LISDG on individual and professional development

		How do you evaluate the discussion group in enhancing individual and professional development?					
		Not Effective at all	Not Effective	Effective to some degree	Effective	Completely Effective	Total
Although most messages sent to the list are news, they are useful for individual and professional	Completely disagree	0	1	3	1	1	6
	Disagree	0	1	2	4	2	9
	Agree to some degree	1	7	12	14	5	39
	Agree	3	4	12	34	12	65
	Completely agree	0	1	4	8	23	36
	Total	4	14	33	61	43	155

Table 2 shows that more than 50% of respondents acknowledge LISDG as an effective list. Since efficacy was one of the evaluation criteria for a social network and social capital, it can be claimed that LISDG has been nearly successful.

Research question 3: To what extent the LISDG has turned into a social capital?

The evaluation criteria used to examine the capability of LISDG to form social capital include trust, reciprocity, social support, suitable environment, commitment, cooperation and efficacy. Table 3 shows that 80% of respondents agreed to some extent or agreed completely that LISDG had the characteristics of a social capital. In other words, the members realized that the list is a trustable environment for communication, The messages help develop their personal and professional capabilities; members are responsible and pay attention towards other people's problems; they can receive support whenever they are confronted with a problem; and the list is a suitable environment for various discussions and critical analyses.

IX CONGRESS CONGRESO
ISKO-SPAIN ISKO-ESPAÑA
Valencia 11th, 12th, 13th March 2009   11, 12 y 13 de Marzo de 2009

New Perspectives for the organisation   Nuevas perspectivas para la difusión
and dissemination of knowledge   y organización del conocimiento

Table 3.- LIS Members' Viewpoints about Social Capital

	Agree & Completely Agree	Nearly agree	Disagree & Completely Disagree
Commitment	68.3%	21.27%	10.43%
Trust	64.4%	26.5%	9.1%
Reciprocity	61.3%	28.93%	9.77%
Efficacy	59.1%	30.18%	10.72%
Healthy	51.9%	30.8%	17.3%
Social Support	50.9%	36.58%	12.52%
Cooperation	48.2%	34.87%	16.93%

CONCLUSION AND FUTURE WORK

This study confirms that the LISDG list is an active social network, that majority of the messages are of the "Know-What" type, and the number of other types of messages increased over the period of this study, that is, two years. Also based on the members' perception, the list possesses required characteristics of a social capital.

 This research provides ground for the following future studies:

1. Investigating and analyzing other social capital evaluation criteria, such as social cohesion, social norms and the level of cohesiveness in communications,

2. Using other measurement scales such as centralization, for exploring patterns of communication,

3. To take maximum advantage of the recent updates on the capabilities and functions of the software systems used in this study; it is recommended to re-evaluate the results of similar studies in the light of these recent updates on a regular basis.

REFERENCES

Coleridge, Tristan. Social Capital Theory. 2004. [viewed: January 27, 2008]. Available on the Web: <HThttp://www.gnudung.com/literature/definition.htmlTH>

Garton, Laura, Haythornthwaite, Caroline, Wellman, Barry. "Studying Online Social Networks". JCMC, 3(1), 1997. [viewed: October 20, 2007]. Available on the Web: <HThttp://jcmc.indiana.edu/vol3/issue1/garton.htmlTH>

IX CONGRESS CONGRESO
ISKO-SPAIN ISKO-ESPAÑA
Valencia 11th, 12th, 13th March 2009 11, 12 y 13 de Marzo de 2009

New Perspectives for the organisation   Nuevas perspectivas para la difusión
and dissemination of knowledge   y organización del conocimiento

Hertzel, Dorothy H. "Bibliometrics History". Encyclopedia of Library and Information Science. 2nd. ed. vol.1, 2003. pp. 288-325.

Lundvall, Bengt- Ake. "Why Study National Systems and National Styles of Innovation". Technology Analysis & Strategic Management, 10(4), 1998. [viewed: January 29, 2008]. Available on the Web:
<HThttp://dx.doi.org/10.1080/09537329808524324TH>

Roselle, Ann. "The Effect of Electronic Communication and World Wide Web on US Academic Documents Librarians Relationships". Journal of Government Information, 26. 2000. [viewed: January 2, 2007].

Royal C.; Daneshgar F.; O'Donnel, L. "Facilitating Organisational Sustainability Through Expert Investment Systems". Electronic Journal of Knowledge Management, issue 2, vol. 2, 2004.

Zeleny, Milan. "From Knowledge to Wisdom: Strategic Challenges of Global Business Education". International Association Jesuit Business Schools. 2007. [viewed: October, 14, 2008]. Available on the Web:
<HThttp://www.fordham.edu/workingpapers/images/Brazil01.pdfTH >