Critical Success Factors for Effective Knowledge Sharing in Group Learning

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ABSTRACT

In the area of knowledge management, many studies have been devoted to investigating how to design an effective knowledge-sharing system in organizations. These studies emphasized the importance of various aspects to the success of the knowledge-sharing system and provided us with hints concerning what critical factors we should consider in the design of a knowledge-sharing system for group learning. In this study, we aim at exploring the critical components of a successful knowledge-sharing system and influential aspects we should consider in the design of a system for group learning. To achieve this task, we conducted an experiment during a semester-long course. The participants in the experiment were the final-year undergraduate students of a business school in Hong Kong. Finally, several factors important to the success of a knowledge-sharing system were identified. Implications for teaching and learning were also provided.

Keywords

Knowledge sharing, group learning, critical success factor

INTRODUCTION

Knowledge sharing among students is believed to be an effective approach to facilitate studying and improve their academic performance. Therefore, how we should carry out successful knowledge sharing in the classroom is a meaningful topic and should be given some attention. To build a knowledge-sharing system is an approach worthy of effort in conducting effective knowledge sharing in school. However, which system aspects merit consideration is still a problem under investigation. Based on previous research, the present study explores potential factors that are important to a successful knowledge-sharing system and discusses some implications for academic teaching and learning.

LITERATURE REVIEW

In the area of knowledge management, many studies have been done to investigate how

to establish an efficient system for sharing knowledge in organizations. These studies emphasized the importance of various aspects to the success of knowledge sharing system. For example, Almeida et al's study (2002) emphasized the availability of multiple mechanisms, formal and informal, to share and transfer knowledge so as to flexibly and simultaneously move, integrate and develop technical knowledge. Besides, the organizational culture that is capable of supporting the flow of knowledge was also addressed as an important factor. Another study by Nelson and Cooprider (1996) empirically tested the relationships between IS performance and mutual trust and influence among IS groups and their line customers. They found that mutual trust can facilitate knowledge sharing and can then increase shared knowledge. Bryant's paper (2003) mainly studied the role of leadership in organizational knowledge management by comparing the effect of transformational leadership and transactional leadership on knowledge sharing. The involvement of high technology in knowledge sharing is addressed by Huber's study (2001) that claimed that some of the barriers to knowledge sharing can to a certain extent be raised by utilizing appropriate technologies.

A few studies noted the role of motivation in knowledge sharing. Most of them discussed the different effects of both extrinsic and intrinsic motivation on knowledge sharing. It was believed that extrinsic motivation is a short-term approach and cannot create a lasting commitment to sharing knowledge (Kohn, 1993). Moreover, extrinsic motivation is also inappropriate if the knowledge shared is mainly tacit in nature (Osterloh et al., 2000). In Hansen's paper (2002), the results showed that project teams who could conveniently access related knowledge from other units by virtue of pre-existing relationships could complete their projects faster than those who failed to do so. Thus, pre-existing relationships are also a facilitating factor due to their shortening the path among units who possess related knowledge. Lastly, a common language is also believed essential for effective knowledge sharing so that knowledge producers and recipients can achieve fluent and accurate communication in exchanging ideas and knowledge (Ali, 2001).

EXPERIMENTAL SETUP

For this study, we planned an experiment that was conducted during a course and lasted for whole semester. The participants in the experiment were the final-year undergraduate students of a business school. For the purposes of this experiment, we separated all students into different groups with each group consisting of five to six students. We then assigned relevant project topics to different groups and asked them to finish the projects by the end of semester. At the beginning, we counseled the participants that sharing knowledge is an effective way of improving performance and encouraged them to share their knowledge with their group mates as much as possible during the projects.

MEASUREMENT

A questionnaire was designed to test the participants' perceptions concerning knowledge sharing based on their experience acquired in the group projects. The

questionnaire consisted of two parts. In the first part, we selected eight factors based on past studies, including knowledge-friendly culture, motivational practices, multiple available channels, leader supportiveness, trust, pre-existing relationship, common language and level of technology. Participants were asked to indicate the extent to which each of these factors is important to the success of knowledge sharing. The second part had four items: Email, Knowledge repository, Face-to-face (F2F) meeting and Formal seminar. We ask participants to indicate the frequency with which they used each of the above methods to share knowledge with their group mates. We distributed the questionnaire to 91 students in a course and finally obtained 75 usable samples for further data analysis.

RESULTS

The mean, max and min values for each of the eight variables in the first part are summarized in Table 1. In addition, we conducted a series of paired t-tests to statistically compare every possible pair of means. Based on the results of the t-test (Table 2), we categorized the eight factors into five different groups: knowledge-friendly culture and motivational practices, multiple available channels and leader supportiveness, trust, pre-existing relationship and common language, and, lastly, level of technology.

	Trust	Culture	Motivation	Channels	Leader	Relation	Language	Tech
MEAN	6.04	5.84	5.76	5.52	5.51	5.12	5.27	4.71
MAX	7	7	7	7	7	7	7	7
MIN	3	4	4	3	4	3	3	1
Importance	MAX ---------- MIN							

Table 1. Results of the first part

Culture	2.15						
Motivation	2.71	**0.92**					
Channels	4.36	2.66	2.31				
Leader	5.18	3.42	2.32	**0.12**			
Relation	6.54	6.11	5.16	2.95	3.04		
Language	6.31	4.22	3.66	1.98	1.96	**0.95**	
Tech	9.28	8.41	6.83	5.03	5.73	2.70	3.50
t-value	Trust	Culture	Motivation	Channels	Leader	Relation	Language

Table 2. Results of paired t-test ($p < .05$)

In each above group that contains more than one factor, the factors are not statistically different from each other. For example, the knowledge-friendly-culture factor is perceived as equally important as the factor on motivational practice. We then prioritized these five groups in terms of their importance to the success of knowledge sharing by comparing their mean level. Obviously, building trust is the most important factor and the level of technology the least, as shown in Table 1.

The mean, max and min values of the second part of the dataset are exhibited in Table 3. We also worked out the percentage of responses that rated the item more than 4

points. By referring to this percentage and checking the corresponding mean values, we can obtain information concerning how many of participants at least frequently used each method to share their knowledge with others. To conclude, F2F meeting is the most frequently used approach to sharing knowledge. Formal seminars, on the contrary, were the least used.

	F2F	Email	Repository	Seminar
MEAN	5.83	5.41	4.48	3.00
MAX	7	7	7	7
MIN	4	2	2	1
Frequent Usage	94.7%	85.3%	46.7%	21.3%

Table 3. Data of the second part

IMPLICATIONS

Our study has essential implications for course teaching and learning. Our study suggests that in order to facilitate knowledge sharing among students, building trusting relationships is the first and most important step to take. Such trust can be built and strengthened via gradual mutual understanding. Therefore, there should be various opportunities and occasions for students to get to know each other. In this way, improved trust due to good understanding can raise the psychological barriers to communication and can then increase the students' willingness to share knowledge. Moreover, a healthy culture should be fostered among students that learning from others and sharing what you know with others is the right thing to do and an effective way of improving study. In this arena, instructors play a particularly critical role. As for the sharing activity itself, increasing interactive communication between students is still an ideal way of proceeding. Whether in class or after class, students should be provided with adequate opportunities for face-to-face discussions without the presence of instructors so that they can actively share knowledge during these discussions. Frequent formal seminars are not an effective approach for sharing knowledge because they hardly communicate with each other to exchange opinions and thoughts during the seminars.

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