ANALYSIS OF THE FACTORS AND THE ROLES OF HRD IN ORGANIZATIONAL LEARNING STYLES AS IDENTIFIED BY KEY INFORMANTS AT SELECTED CORPORATIONS IN THE REPUBLIC OF KOREA

A Dissertation

by

JINCHUL JEONG

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 2004

Major Subject: Educational Human Resource Development

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May 2004

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ABSTRACT

Analysis of the Factors and the Roles of HRD
in Organizational Learning Styles as Identified by Key Informants
at Selected Corporations in the Republic of Korea. (May 2004)
Jinchul Jeong, B.S., Seoul National University;
M.Ed., Seoul National University
Chair of Advisory Committee: Dr. Kenneth E. Paprock

The core competency of the most effective organizations will be their capacity to learn in an increasingly complex and unpredictable business environment and HRD should expand its role to become a partner in the transformation of the entire organization. Organizational learning style, therefore, is an important research topic for the field of HRD (human resource development).

This study had four primary purposes, which were germane to the corporations in the Republic of Korea: 1) to identify what organizational learning styles exist; 2) to identify the factors that differentiate the organizations with different organizational learning styles; 3) to identify the roles of HRD to facilitate organizational learning within the organizations in each organizational learning style; and 4) to identify the differences in the roles of HRD to facilitate organizational learning among the organizations with different organizational learning styles.

The population for this study was the key informants at the corporations in the three industry areas: wholesale and retail trade; manufacturing; and hotels and

restaurants. The survey instrument was delivered to 353 key informants, i.e. HR persons, at 240 corporations and 237 key informants at 166 corporations returned the survey instrument for a return rate of 67.1%.

The findings of this study revealed the followings: 1) there are four types of organizational learning styles and the characteristics of each type of organizational learning style is determined by the combination of the organizations' learning orientations, i.e. Knowledge Source, Learning Content, Dissemination Mode, and Learning Scope; 2) types of organizational culture, industry classification, and the size of an organization are the factors that differentiate the organizations with different organizational learning styles; 3) all roles of HRD are necessary for facilitating organizational learning; and 4) there are not differences in the roles of HRD to facilitate organizational learning among the organizations with different organizational learning styles.

DEDICATION

I would like to dedicate this dissertation to my parents, Wanmo “John” Jeong and Jeongsook “Rosa” Chae, who have always believed and supported me.

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The guidance of my committee was absolutely essential for this research. Dr. Kenneth Paprock always provided advice and valuable insight. This research could not keep moving without his encouragement. Dr. Homer Tolson's focus on the statistical analysis and affirmation ensured this research was moving toward completion. I would like to express additional thanks to Dr. Tolson for making corrections for several proofs. Dr. Toby Egan's feedback and comments improved this research immensely. Dr. Ben Welch's advice and availability assisted greatly with keeping on track.

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CHAPTER I

INTRODUCTION

Intense global competition has produced an increasingly complex and unpredictable business environment (Bontis, Crossan, & Hulland, 2002) and, within this turbulence, an organization's capacity to learn may be the only sustainable competitive advantage (DeGeus, 1988; Stata, 1989). Therefore, a "consensus is emerging that the hallmark of tomorrow's most effective organizations will be their capacity to learn" (Adler & Cole, 1993, p. 85).

Organizational learning can be treated as an established field of study (Easterby-Smith, Crossan, & Nicolini, 2000) since the concept first emerged in scholarly literature in 1953 with Herbert A. Simon (Cangelosi & Dill, 1965). Even though fundamental initial academic works regarding organizational learning were reported by Argyris (1967, 1976, 1977), the popularity of organizational learning was gained by the success of Senge's *The fifth discipline: The art and practice of the learning organization* (1990).

The authors of several seminal works on organizational learning such as March and Olsen (1976), Argyris and Schön (1978), and Huber (1991) have been skeptical about the ability of organizations to learn (Lipshitz, Popper, & Friedman, 2002), and there was little agreement on what organizational learning was (Huber, 1991). More recently, however, "there seems to be little question that organizations can learn

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The style and format of this dissertation follow that of *Human Resource Development Quarterly*.

and that learning is critical for long-term survival" (Lipshitz et al., 2000, p. 79).

According to Nevis, DiBella, and Gould (1995), all organizations are learning systems and there are clearly different organizational learning styles (McGill, Slocum, & Lei, 1992; Ribbens, 1997). Therefore, even though the idea of a learning style was originally developed in reference to individuals, the idea of a learning style can be applied to understand organizational learning.

Statement of the Problem

From the linguistic point of view, organizational learning can be interpreted as learning of an organization. Organizational learning also means learning for an organization. Organizational learning is an important research topic for the field of HRD because HRD is deeply related to learning activities for an organization. As a research topic, however, organizational learning has not been fully embraced in the field of HRD, while organizational learning has been studied deeply in the field of management. According to Callahan (2003), when interest in organizational learning began to emerge in the field of management, HRD only appeared as a distinct field itself. Only five articles on organizational learning or learning organizations had been published in the journal of *Human Resource Development Quarterly* during 1994-2002.

The controversy over the question of whether or not organizational learning is necessarily beneficial has been a source of confusion in regard to organizational learning (Argyris & Schön, 1996). Scholars such as Huber (1991) and Cook and Yanow (1993) contended that learning does not always improve organizational performance. However,

"learning usually, though not always, increases an organization's capacity to perform" (Tsang, 1997, p. 79).

Furthermore, organizational learning mechanisms are likely to yield productive learning if the mechanisms are embedded in an appropriate organizational culture (Popper & Lipshitz, 2000) because learning conforms to culture (Nevis et al., 1995) and it may be difficult to alter an organization's learning style (Ribbens, 1997). Therefore, organizational learning style is a critical topic in understanding organizational learning.

"With a growing number of publications on HRD's role in organizational learning by fostering the learning of employees, the changing nature of HRD is gradually becoming more clear. However, many uncertainties remain for HRD professionals, especially in terms of how to enact their new roles" (Tjepkema, Stewart, Sambrook, Mudler, Ter Horst, & Scheerens, 2002, p. 2). In addition, no reported study has been conducted to identify the roles of HRD in various organizations with different organizational learning styles.

Significance of the Study

Thinking about a framework for understanding preferences rather than to conceptualize a prescribed model may be productive (Nevis et al., 1995) because learning style plays a critical role in providing a mechanism through which corporations acquire and retain a competitive advantage (Senge, 1990). The learning style must support the acquisition of new knowledge that can be used to upgrade competencies that permit the organizations to be more effective than their competitors (Hamel & Prahalad,

1993). “Organizational learning has been linked to vital organizational phenomenon, therefore, it will be to an organization’s benefit to critically examine and refine its learning style” (Ribbens, 1997, p. 60). Organizational learning is an exciting concept for HRD because HRD has the potential to expand the roles of HRD to include not only changing the threshold of skills in organizations, but also to become partners in the transformation of the entire organization (Watkins & Marsick, 1992).

The information from this study will provide an insight into what organizational learning styles exist, what are the organizational factors that differentiate the organizations with different organizational learning styles, what are the roles of HRD to facilitate organizational learning within the organizations in each organizational learning style, and what are the differences in the roles of HRD to facilitate organizational learning among the organizations with different organizational learning styles at selected corporations in the Republic of Korea. Therefore, this study will inform if unique roles of HRD exist in different organizations. This study will also nourish the organizational learning research literature that lacks a non-Western organizational perspective since most of the studies of organizational learning have only been based on Western organizations (Tsang, 1997).

Purpose of the Study

The purpose of this study was germane to the corporations in the Republic of Korea. Within that framework, the following purposes were examined.

First, the purpose of this study was to identify what organizational learning styles exist. Secondly, organizational factors that differentiate the organizations with different organizational learning styles were identified. Thirdly, the roles of HRD to facilitate organizational learning within the organizations in each organizational learning style were identified. Lastly, the differences in the roles of HRD to facilitate organizational learning among the organizations with different organizational learning styles were identified.

Research Questions

The following questions were addressed in this study as identified by key informants at selected corporations in the Republic of Korea:

1. What kinds of organizational learning styles exist?
2. What are the organizational factors that differentiate the organizations with different organizational learning styles in terms of organizational culture, industry classification, and the size of an organization?
3. What are the roles of HRD to facilitate organizational learning within the organizations in each organizational learning style?
4. Are there differences in the roles of HRD to facilitate organizational learning among the organizations with different organizational learning styles?

Operational Definitions

Organizational Learning: The process by which an organization's capacity to take effective action is increased through knowledge acquisition, dissemination, and utilization by collective group of people (Fiol & Lyles, 1985; Huber, 1991; Kim, 1993). Organizational learning encompasses three levels of learning such as individual-level learning, group-level learning, and organization-level learning (Crossan & Hulland, 1997; Crossan, Lane, & White, 1999).

Organizational Learning Style: Preferred ways in which an organization acquires, disseminates, and utilizes knowledge necessary for increasing its capacity to take effective action (Huber, 1991; Kim 1993; DiBella, Nevis, & Gould, 1996).

Factors of Organizational Learning Style: Organizational conditions that directly and/or indirectly contribute to an organizational learning style, including organizational culture, industry classification, and the size of an organization.

Organizational Culture: A set of assumptions, beliefs, values, and norms shared by the members of an organization (Newstrom & Davis, 1993; Kowalczyk & Pawlish, 2002).

HRD (human resource development): A component of an organizational system to facilitate organizational learning.

Role of HRD: The total patterns of occupational behaviors in HRD functions as perceived by the informants who are responsible for HR functions (Gordon, Mondy, Sharplin, & Premeaux, 1990; Newstrom & Davis, 1993).

Key Informants: The HR staffs, HR managers, and/or HR directors who are knowledgeable about organizational learning, organizational culture, and the roles of HRD and able and willing to communicate (Kumar, Stern, & Anderson, 1993).

Selected Corporations: Corporations in the three industries of wholesale and retail trade, manufacturing, and hotels and restaurants.

Assumptions

1. Organizational learning occurred in every organization.
2. The survey instrument used in this study provided data that were valid for the purposes of the study.
3. The key informants understood the survey instrument, had the ability to self-report, and responded honestly.
4. The researcher was impartial in collecting and analyzing the data.

Limitations

1. This study was limited to the information acquired from a literature review and the survey instrument.
2. Non-probability sampling, not random sampling, was introduced in this study. The survey instrument was sent out only to the key informants who agreed to participate in the study.

3. Basically, three key informants were used to create the organization-level indicator. In small corporations, however, one or two HR persons were used as the key informants because there were not three HR persons in the corporations.
4. Findings were generalized only to the corporations of wholesale and retail trade, manufacturing, and hotels and restaurants industries in the Republic of Korea during July 2003 and December 2003.

CHAPTER II

REVIEW OF LITERATURE

In this chapter, at first, the literature regarding the concept of organizational learning was reviewed to define organizational learning. Secondly, the literature regarding organizational learning style was reviewed to explain on which organizational learning style this study is based. Thirdly, the literature regarding the factors influencing organizational learning style was reviewed to select the independent variables influencing organizational learning style. Fourthly, the literature regarding organizational culture was reviewed to define organizational culture and to explain on which types of organizational culture this study is based. Fifthly, the literature regarding the concept of HRD was reviewed to define HRD. Finally, the literature regarding the roles of HRD was reviewed to develop a role model for HRD.

Concept of Organizational Learning

To understand the concept of organizational learning, four aspects were reviewed: definition of organizational learning; perspectives regarding organizational learning in research; constructs relevant to organizational learning; and debates upon organizational learning.

Definition of Organizational Learning

Organizational learning has been defined in as many ways as there are writers on the subject. Therefore, the definitions of organizational learning are elusive and lack

consistency among authors (Marks & Louis, 1999). Representative definitions of organizational learning are listed in Table 1.

The definitions in Table 1 don't cover all definitions of organizational learning. Even though more definitions of organizational learning were discovered in the literature, not all of them were the definition of organizational learning.[1] However, by inspecting the definitions in Table 1, some commonalities could be discovered.

Commonalities from the definitions of organizational learning listed in Table 1 can be summarized as follows:

- Organizational learning is a process.
- Organizational learning improves or changes something.
- Something improved or changed is the outcome of organizational learning and these can be improved or changed cognition (i.e. knowledge) and/or behavior (i.e. action).

[1] Several definitions of organizational learning were summarized well in Tsang (1997), Bontis et al. (2002), and Sun (2003). However, some of the definitions were not actually the definition of organizational learning. For example, Huber (1991) contended that "an entity learns if, through its processing of information, the range of its potential behaviors is changed" (p. 89). Absolutely speaking, previous statement by Huber (1991) only deals with what an organization processes when it learns and how we can judge whether or not an organization has learned something by inspecting the result of learning. Another example is the definition by Crossan, Lane, White, and Djurfeldt (1995). They mentioned that "learning is a process of change in cognition and behavior, and it does not necessarily follow that those changes will directly enhance performance" (p. 353). Bontis et al. (2002) listed Crossan et al.'s (1995) definition under the title of "definitions of organizational learning" (p. 439). However, this is the definition of learning, not that of organizational learning. An additional problem of the definitions listed in Bontis et al. (2002) and Sun (2003) was that the authors confused the definition by Daft and Weick (1984) with the original definition by Duncan and Weiss (1979).

Table 1. Definitions of Organizational Learning

Author	*Year*	*Definition*	*Page*
Argyris	1977	A process of detecting and correcting errors	116
Duncan & Weiss	1979	The process within the organization by which knowledge about action-outcome relationships between the organization and the effect of the environment of these relationships is developed	84
Shrivastava	1981	The process by which the organizational knowledge base is developed and shaped	15
Fiol & Lyles	1985	The process of improving actions through better knowledge and understanding	803
Stata	1989	The principal process by which management innovation occurs	64
Swieringa & Wierdsma	1992	The changing of organizational behaviour	33
Cook & Yanow	1993	The acquiring, sustaining, or changing of intersubjective meanings through the artifactual vehicles of their expression and transmission and the collective actions of the group	384
Kim	1993	Increasing an organization's capacity to take effective action	43
Nicolini & Meznar	1995	A social construction which transforms acquired cognition into accountable abstract knowledge	727
Nevis et al.	1995	The capacity or processes within an organization to maintain or improve performance based on experience	73
Slater & Narver	1995	The development of new knowledge or insights that have the potential to influence behavior	63
Miller	1996	The acquisition of new knowledge by actors who are able and willing to apply that knowledge in making decisions or influencing others in the organizations	486
Marks & Louis	1999	The social processing of knowledge, or the sharing of individually held knowledge or information in ways that construct a clear, commonly held set of ideas	711
Preskill & Toress	1999	The organization's commitment to using of its members' capabilities	43
Templeton, Lewis, & Snyder	2002	The set of actions (knowledge acquisition, information distribution, information interpretation, and organizational memory) within the organization that intentionally and unintentionally influence positive organizational change	189

The input for organizational learning was not clearly mentioned in the definitions of organizational learning. However, the input might be an organization. There has been a long controversy concerning what is the final outcome of organizational learning, i.e. improved or changed cognition and behavior (Fiol and Lyles, 1985; Gehrardi, 1999; Nicolini & Meznar, 1995). At this point, the debate on cognition and behavior is not critical. The important thing is that there might be something that is the output through organizational learning. This output can be called a learning organization.[2] According to Callahan (2003), organizational learning is a means to achieve the end goal of becoming a learning organization.

A simplified organizational learning system is depicted in Figure 1. The input of the organizational learning system is an organization. This is related to the level of organizational learning that had been debated over a long time. Even though organizational learning is occurred by the individuals in an organization (Argyris & Schön, 1996), generally speaking, organizational learning is more than the learning of its individual members (Hedberg, 1981). The level of organizational learning could be

[2] The definition of learning organization was not dealt with deeply in this dissertation. However, there had been a long debate regarding the difference between organizational learning and learning organization. "For many years researchers and practitioners studying learning in organizations appeared to be talking about the same phenomenon but in different ways" (Easterby-Smith et al., 2000, p. 786). There were several studies (Easterby-Smith, 1997; Tsang, 1997; Örtenblad, 2001; Sun, 2003) regarding the difference between organizational learning and learning organization. According to Tsang (1997), organizational learning is a descriptive approach and this seeks to the answers to the question of how an organization learns. Learning organization is a prescriptive approach and this seeks to the answers to the question of how an organization should learn. Target audience of organizational learning has been academics, and that of learning organization has been practitioners. In a recent study, Sun (2003) intended that there were differences between the term 'learning organization' and the term 'a learning organization'. 'Learning organization' stands for a concept functioning as a guiding vision and a name of a subject for scientific study and research. 'A learning organization', however, refers to a living representative of the image of 'learning organization'. It means 'a learning organization' possesses some major characteristics or features of 'learning organization'.

individual, group, and organizational (Crossan et al., 1999).[3] Based on this conception, Bontis et al. (2002) defined individual level learning as "individual competence, capability, and motivation to undertake the required tasks" (p. 443), group level learning as "group dynamics and the development of shared understanding" (p. 443), and organizational level learning as "alignment between the non-human store houses of learning including systems, structure, strategy, procedures, and culture, given the competitive environment" (p. 444).

In this dissertation, the general definition of organizational learning is the process by which a learning organization is produced. A learning organization can be defined as an organization that has improved or changed organizational knowledge (cognition) and behavior through organization learning. Specifically, organizational learning in this dissertation is defined as the process by which an organization's capacity to take effective action is increased through knowledge acquisition, dissemination, and utilization by collective group of people.[4]

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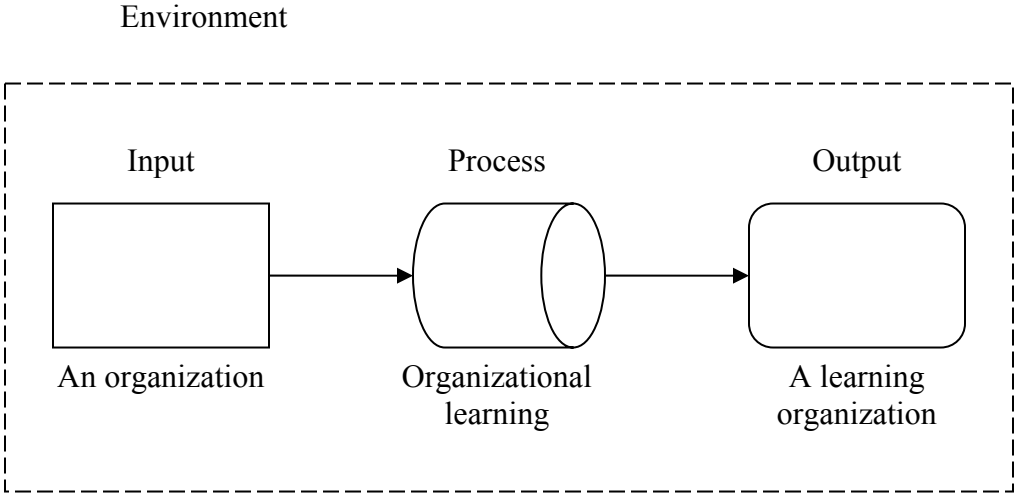
[3] Crossan et al. (1995) contended that there were four levels of learning: individual; group; organizational; and interorganizational. Cantley and Sahal (1980) identified five hierarchical levels of learning in socio-technical system comprising of the unit level (individual and single equipment), the plant level, the organizational or company level, the industry level, and the societal level.

[4] There is confusion about the concept of data, information, and knowledge, which is largely fueled by disparate meanings assigned by diverse academic field of discipline and industry groups to use these terms. However, there are subtle and relevant differences among data, information, and knowledge. Data are carriers of information and knowledge. Information is predominantly descriptive, and refers to the past, present, and future. Knowledge is chiefly associative. That is, it defines associations between pieces of generic of specific information, so "hidden" information instances can be inferred from information at hand (Kock, 1999).
Knowledge acquisition, dissemination, and utilization are related to the process of organizational learning. These three processes of organizational learning are in reference to Huber (1991).

Figure 1. A Simplified Model of Organizational Learning System



To understand in which situation organizational learning occurs, the following statement by Argyris and Schön (1996) is helpful:

> Organizational learning occurs when individuals within an organization experience a problematic situation and inquire into it on the organization's behalf. They experience a surprising mismatch between expected and actual results of the action and respond to that mismatch through a process of thought and further action that leads them to modify their images of organization or their understandings of organizational phenomena and to restructure their activities so as to bring outcomes and expectations into line, thereby changing organizational theory-in-use. [5] In order to become organizational, the learning that results from

[5] Theory-in-use is one form of theory of action. Theory of action is a system of beliefs that underlie action, i.e. organizational knowledge. Theory of action has the advantage of including strategies of action, the values that govern the choice of strategies and the assumptions on which they are based. Theory of action may take two different forms. Espoused theory means the theory of action which is advanced to explain or

> organizational inquiry must become embedded in the images of organization held in its members' minds and/or in the epistemological artifacts (the maps, memories, and programs) embedded in the organizational environment. (p. 16)

Perspectives Regarding Organizational Learning in Research

An excellent summary of perspectives regarding organizational learning was presented by Shrivastava (1983). "In contrast to the research on the psychology of individual learning, the research on organizational learning has been fragmented and multidisciplinary" (Shrivastava, 1983, p. 9). He summarized those perspectives in terms of four distinct and contrasting perspectives like the followings:

1. Organizational learning as adaptation;
2. Organizational learning as assumption sharing;
3. Organizational learning as developing knowledge of action-outcome relationships; and
4. Organizational learning as institutionalized experience

All of those perspectives above can be reliable because of the following reasons:

1. An organization is surrounded by the environment. Therefore, "organizations adapt to changes in the environment by readjusting their goal, attention rules and search rules" (Shrivastava, 1983, p. 10).[6]

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justify a given pattern of activity. Theory-in-use means the theory of action which is implicit in the performance of that pattern of activity (Argyris & Schön, 1996).

[6] If we compare this perspective of organizational learning as adaptation with the theory of autopoiesis (Maturana & Varela, 1980, 1987; Mingers, 2001), it's not difficult to discover that the perspective of organizational learning as adaptation is controversial. According to the theory of autopoiesis, systems, i.e. organizations, are self-producing or self-constructing. Organizations don't adapt to the environment.

2. According to Argyris and Schön (1996), organizational theories-in-use result from shared assumptions. Learning involves changes in these theories-in-use.
3. As already mentioned in the previous section, the outcomes of the organizational learning are improved or changed organizational knowledge and/or behavior.
4. According to Shrivastava (1983), "the gains of experience are attributable to better knowledge and anticipation of the environment enabling the firm to cope with it more effectively, better understanding of the activities involved, substitution of material, technological innovation and redesign of processes, economics of large scale production, etc" (pp. 15-16).

Constructs Relevant to Organizational Learning[7]

"In addition to the conceptual confusion within the field of organizational learning, there is also conceptual confusion between the terms organizational learning, knowledge management, and intellectual capital" (Bontis et al., 2002, p. 440). Intellectual capital can be described as the stock of knowledge that exists in an organizational at a particular point of time, knowledge management can be described as managing this stock of knowledge as it flows over time, and organizational learning can

[7] A lot of constructs are related to the concept of organizational learning. Some of them are knowledge acquisition, information distribution, information interpretation, and organizational memory in Huber (1991), learning style, organizational unlearning, organizational memory, learning capacity in Tsang (1997), organizational action, organizational inquiry, organizational knowledge, single-loop learning, double-loop learning, and organizational deutrolearning in Argyris and Schön (1996), and organizational adaptation in Fiol and Lyles (1985). Among many constructs related to organizational learning, some constructs that provoked conceptual confusion not within the field of organizational learning were reviewed in this section briefly.

be described as means to understand how the stocks of knowledge as well as behavior flow over time (Bontis et al., 2002).[8]

The tension between the ideas of organizational learning and knowledge management has emerged in the last few years (Easterby-Smith et al., 2000). Even though it seems that organizational learning and knowledge management deals with the same phenomenon, organizational learning is a broader concept than knowledge management according to Bontis et al. (2002). While knowledge management concerns are with stocks of knowledge, organizational learning concerns are with both stock and flow of knowledge.

Debates upon Organizational Learning

Past debates and established ideas regarding organizational learning included levels of learning, whether learning necessarily implies cognitive or behavioral change, the respective values of single- and double-loop learning, the relationship between learning and unlearning, and the distinction between organizational learning and the learning organization. Current debates and ideas in contention regarding organizational learning consist of the nature and location of organizational learning, how to investigate organizational learning (macro/positivist studies vs. micro/interpretative studies), and

[8] To understand flow and stock concept of organizational learning, Strategic Learning Assessment Map (SLAM) proposed by Crossan and Hulland (1997) and 4I framework proposed by Crossan et al. (1999) should be understood. According to those two articles, there are three levels of learning: individual level learning; group level learning; and organizational level learning. If input and output of learning occurs at the same level, those are the stock of organizational learning. Individual-level learning stock can be called cognitive map (Huff, 1990), group-level learning stock can be called shared understanding or collective mind (Weick & Roberts, 1993), and organizational-level learning stock can be called organizational memory (Walsh & Ungson, 1991). These three levels of learning stock are linked by intuition, interpreting, integrating, and institutionalizing (4Is). "Not only does learning occur over time and across levels, but it also creates a tension between assimilating new learning (feed-forward) and exploiting or using what has been learned (feed-back)" (Crossan et al., 1999, p. 532).

tension between the ideas of organizational learning and knowledge management. Emergent issues and promising ideas regarding organizational learning that lead to further research include practice and activity as new units of analysis, reconciling learning with diversity, and focusing on power and politics (Easterby-Smith et al., 2000).

Organizational Learning Style

The idea of learning style was originally developed to describe the characteristics of individual learning. A number of frameworks have been developed to assess individual learning style. Representative examples include the Learning Styles Inventory (LSI) by Kolb, Rubin, and McIntyre (1979) and the Learning Styles Questionnaire (LSQ) by Honey and Mumford (1982). Gregorc (1985) developed another learning style derivative of Kolb's (1984) framework. One of the characteristics of these frameworks is that bipolar dimensions have been used. Few of those dimensions, however, are meaningful at an organizational level, because classification of organizational information processes in terms of sensation—intuition, perception—judgment, and thinking—feeling, just to name a few, is hard to understand (Ribbens, 1997).

Representative researchers dealing with organizational learning styles include Shrivastava (1983), DiBella et al. (1996), Ribbens (1997), and Yeung, Ulrich, Nason, and Von Glinow (1999). Each research was reviewed in the following section.

Shrivastava's (1983) Typology of Organizational Learning Systems

Shrivastava (1983) used "types of learning system" in organizations instead of organizational learning style. However, the typology is similar to the concept of organizational learning style.

According to Shrivastava (1983), organizational learning system is "the means by which organizations learn" (p. 7). Some of the features of organizational learning systems are as follows (Shrivastava, 1983, pp. 17-18):

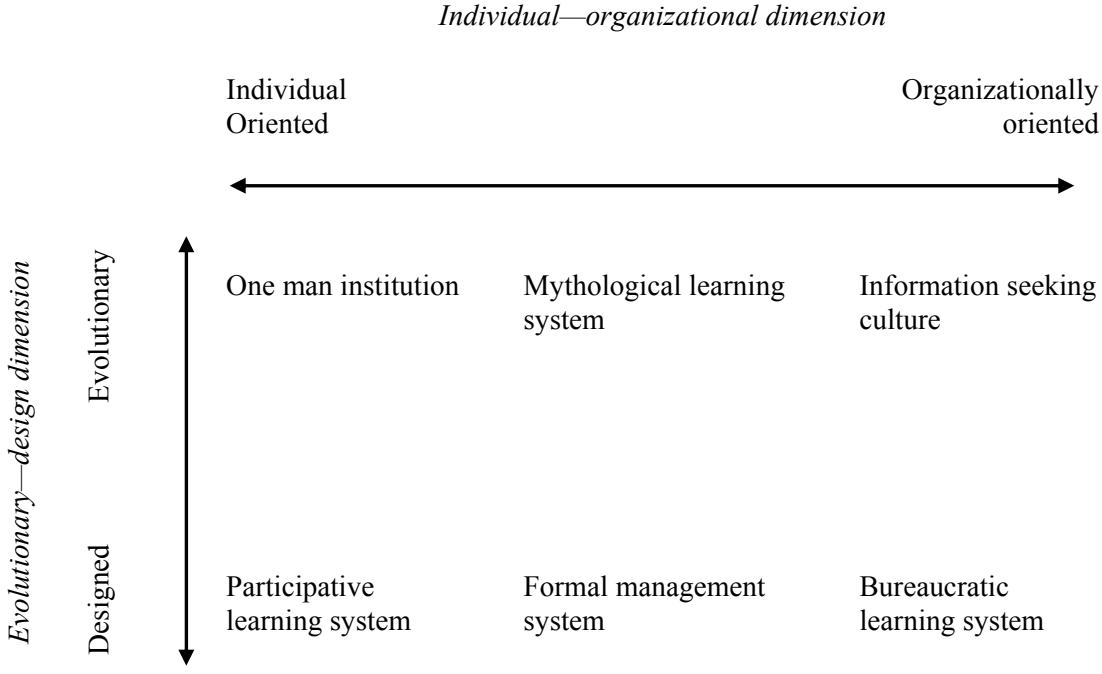
1. Organizational learning *systems* [*sic*] are systems which acquire, communicate and interpret organizationally relevant *knowledge for use* [*sic*] in decision-making. They attempt to objectify the subjective personal knowledge of individual members into an organizational knowledge base.
2. These systems are relevant to a *broad range* [*sic*] of organizational activities and they provide inputs to the decision-making process simultaneously in multiple departments, divisions, and hierarchical levels of the organization. They are not necessarily task specific or functional area specific.
3. They are rooted in organizational *practice* [*sic*]. This means they reflect the actual 'theories-in-use' [*sic*] and not the 'espoused theories' [*sic*] or rhetoric in organizational activities.
4. Organizational members *know* [*sic*] about the systems, even though some of the systems may not have been explicitly verbalized or documented.

In order to generate a typology of organizational learning systems, Shrivastava (1983) identified two critical dimensions that characterized these learning systems based

on the literature review and empirical studies of organizational learning such as Argyris and Schön (1978), Jelinek (1979), and Shrivastava (1981).

By using two dimensions, i.e. individual—organizational dimension and evolutionary—design dimension, six types of organizational learning systems were proposed: one man institution; mythological learning systems; information seeking culture; participative learning systems; formal management systems; and bureaucratic learning systems. Those six types of organizational learning systems are depicted in Figure 2.

Figure 2. A Typology of Organizational Learning Systems by Shrivastava (1983)



Note: From "A Typology of Organizational Learning Systems," by P. Shrivastava, 1983, *Journal of Management Studies*, *20*, p. 18. Copyright 2001 by Blackwell Publishing. Reprinted with permission.

Organizational learning systems may vary on individual—organizational dimension from being a single person dependent system to a highly participative one depending on how the process of knowledge sharing is accomplished. The second dimension that characterizes organizational learning systems is the process by which organizational learning systems come to exist in the organization, i.e. how organizational learning systems develop. Learning systems may develop purely as a result of socio-cultural norms, historical practices, or managerial traditions. Therefore, no conscious effort to design the learning mechanisms emerges in the organization. On the other hand, organizational learning systems can be designed and implemented to serve specific information and learning needs identified by managers (Shrivastava, 1983).

The four corners of the matrix in Figure 2 represent the four pure types of organizational learning systems, i.e. individually oriented-evolutionary systems, individually oriented-designed systems, organizationally oriented-evolutionary systems, and organizationally oriented-designed systems. However, the more interesting and practical learning situations arise not necessarily at the end points of the two dimensions but along the continuum (Shrivastava, 1983).[9]

In a study of organizational learning systems in 32 business organizations (Shrivastava, 1981), six types of learning systems were identified. The Characteristics of six organizational learning systems are summarized in Table 2 in terms of the type of

[9] Logically, nine types of organizational learning systems can arise from Shrivastava's (1983) two dimensions because practical learning situations can also arise along the evolutionary—design dimension continuum. Shrivastava (1983), however, didn't mention anything regarding the evolutionary—design dimension continuum.

organizational knowledge they handle, structuredness, explicitness of rules, scope, media of communication, motivation of activity, time frame, and organizational make up.

Table 2. Characteristics of Organizational Learning Systems by Shrivastava (1983)

Characteristic	*One Man Institution*	*Mythological Learning Systems*	*Information Seeking Culture*	*Participative Learning Systems*	*Formal Management Systems*	*Bureaucratic Learning Systems*
Types of knowledge	Subjective	Subjective/ Mythical	Subjective/ Objective	Subjective/ objective	Objective	Objective
Structuredness	Medium	Low	Low	Medium	High	High
Explicitness of rules	Low	Low	Low	Medium	Low	High
Scope of system	General	General	General	Problem specific	Task or area specific	Task specific
Media for communication	Writs, memos	Stories	Word of mouth	Discussion groups	Reports	Memos, reports
Motivation of activity	Crises	Social norms	Social norms	Problems	Periodic requirements	Specific decision
Time frame	Current information	Historical information	Current information	Current information	Current/ future	Historical information
Organizational make up	Single or top management	Informal networks	None	Problem or department specific	Divisions or departments	Departments

Note: From "A Typology of Organizational Learning Systems," by P. Shrivastava, 1983, *Journal of Management Studies*, *20*, p. 21. Copyright 2001 by Blackwell Publishing. Reprinted with permission.

DiBella et al.'s (1996) Styles of Learning

Nevis et al. (1995) proposed a model of organizations as learning system. Nevis et al.'s (1995) organizational learning system has two aspects, i.e. descriptive and normative. Descriptive aspect concerns what and where learning occurs and this is related to learning orientations. Normative aspect concerns what promotes learning and this is related to facilitating factors. Learning orientations are "the values and practices

that reflect where learning takes place and the nature of what is learning" and "these orientations form a pattern that defines a given organization's learning style" (Nevis et al., 1995, p. 76). Facilitating factors are "the structures and processes that affect how easy or hard it is for learning to occur and the amount of effective learning that takes place" (Nevis et al., 1995, p. 76).

The definitions and the dimensions of the seven learning orientations are summarized in Table 3. Seven learning orientations are "Knowledge Source," "Content—process Focus," "Knowledge Reserve," "Dissemination Mode," "Learning Scope," "Value—chain Focus", and "Learning Focus" (DiBella, 2001).[10]

"Knowledge Source" has internal—external dimension and is determined by preference for developing knowledge internally as compared to preference for acquiring knowledge developed externally. "Content—process Focus" has content—process dimension and is determined by emphasis on knowledge about what products or services are as compared to emphasis on knowledge about how those products or services are developed, delivered, or improved. "Knowledge Reserve" has personal—public dimension and is determined by knowledge possessed by individuals as compared to knowledge that is publicly available. "Dissemination Mode" has formal—informal dimension and is determined by knowledge shared in formal, prescribed methods as compared to knowledge that is shared through informal methods, such as role-modeling and casual interaction.

[10] The names of learning orientations were slightly different among Nevis et al. (1995), DiBella et al. (1996), and DiBella (2001). Originally, learning orientations were knowledge source, product—process focus (not content—process focus), documentation mode (not knowledge reserve), dissemination mode, learning focus (not learning scope), value—chain focus, and skill development focus (not learning focus) in Nevis et al. (1995) and DiBella et al. (1996).

Table 3. Learning Orientations by DiBella (2001)

Learning Orientations	*Definition*	*Dimension*
Knowledge source	Preference for developing knowledge internally as compared to preference for acquiring knowledge developed externally	Internal—External
Content—process focus	Emphasis on knowledge about what products or services are as compared to emphasis on knowledge about how those products or services are developed, delivered, or improved	Content—Process
Knowledge reserve	Knowledge possessed by individuals as compared to knowledge that is publicly available	Personal—Public
Dissemination mode	Knowledge shared in formal, prescribed methods as compared to knowledge that is shared through informal methods, such as role-modeling and casual interaction	Formal—Informal
Learning scope	Preference for knowledge related to the improvement of existing products, services, or capabilities as compared to preference for knowledge related to the development of new ones	Incremental—Transformative
Value—chain focus	Emphasis on learning investments in engineering or production activities ("design and make" functions) versus sales or service ("market and deliver" functions)	Design-make—Market-deliver
Learning focus	Development of knowledge and skills pertaining to individual performance as compared to development of knowledge and skills pertaining to group performance	Individual—Group

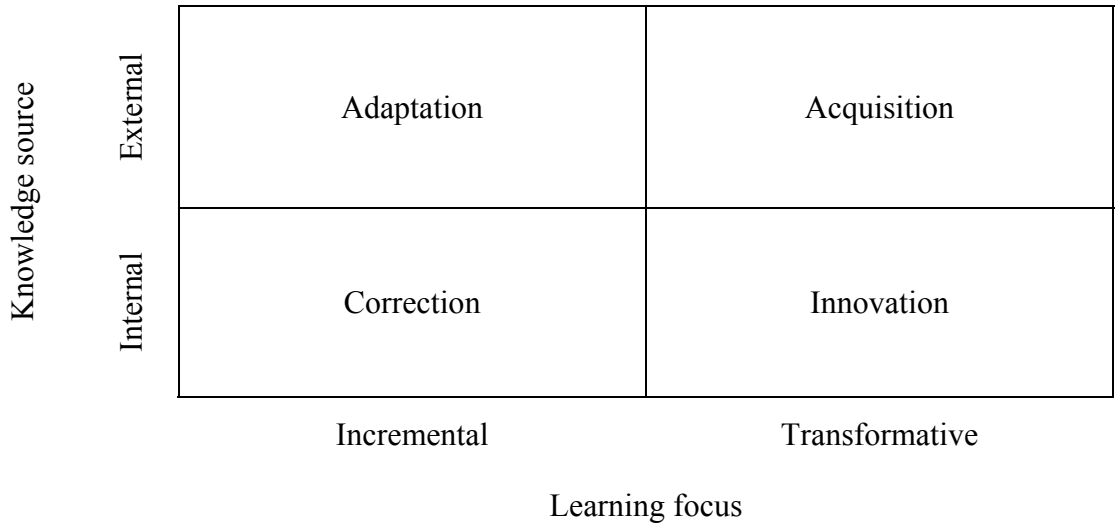
"Learning Scope" has incremental—transformative dimension and is determined by preference for knowledge related to the improvement of existing products, services, or capabilities as compared to preference for knowledge related to the development of

new ones. “Value—chain Focus” has design-make—market-deliver and is determined by emphasis on learning investments in engineering or production activities (“design and make” functions) versus sales or service (“market and deliver” functions). “Learning Focus” has individual—group dimensions and is determined by development of knowledge and skills pertaining to individual performance as compared to development of knowledge and skills pertaining to group performance (DiBella, 2001).

DiBella et al. (1996) suggested two examples of organizational learning styles. The idea was that a pair of learning orientations from seven learning orientations made four sets of organizational learning styles. Organizational learning styles as reflected by knowledge source (internal—external) and learning focus (incremental—transformative) were adaptation, acquisition, correction, and innovation as depicted in Figure 3.

“When organizations learn from their own operations and use that knowledge incrementally, they make corrections to existing systems. When organizations learn from their own operations and use that knowledge transformatively, they create innovations in their own products and processes. Adaptation occurs when organizations make incremental changes on the basis of knowledge acquired externally. To utilize external knowledge that is transformative involves a certain amount of acquisition” (DiBella et al., 1996, p. 375).

Figure 3. Style of Learning by Knowledge Source and Learning Focus

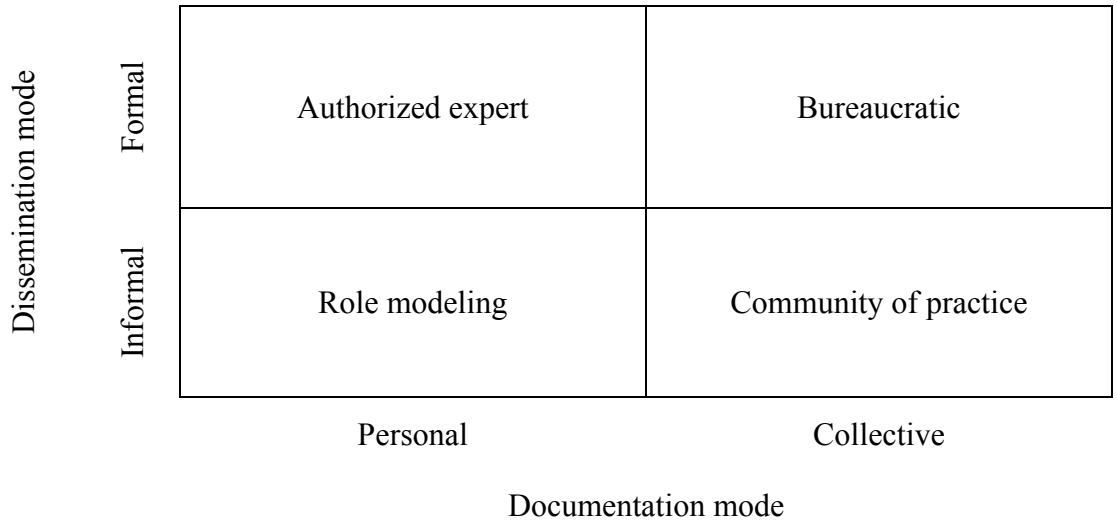


Note: From "Understanding Organizational Learning Capability," by A. J. DiBella, E. C. Nevis, & J. M. Gould, 1996, *Journal of Management Studies*, *33*, p. 376. Copyright 2000 by Blackwell Publishing. Reprinted with permission.

Organizational learning styles as reflected by documentation mode (personal—public) and dissemination mode (formal—informal) are authorized expert, bureaucratic, role modeling, and community of practice as depicted in Figure 4.

"When knowledge is seen in personal terms and disseminated in a formal manner, then organizations rely on authorized experts to accumulate learning. When knowledge is seen in personal terms but disseminated in an informal manner, then learning occurs through role modeling and emulation. A bureaucratic style of learning reflects a formal method of disseminating knowledge that applies to all, usually as written procedures. 'Communities of practice' [*sic*] is a learning style that involves collective or collaborative learning in an informal manner" (DiBella et al., 1996, p. 376).

Figure 4. Style of Learning by Documentation Mode and Dissemination Mode



Note: From "Understanding Organizational Learning Capability," by A. J. DiBella, E. C. Nevis, & J. M. Gould, 1996, *Journal of Management Studies*, *33*, p. 377. Copyright 2000 by Blackwell Publishing. Reprinted with permission.

DiBella et al. (1996) provided a good tool to understand the scope of an organization's learning portfolio. DiBella et al. (1996), however, provided only two examples of organizational learning styles. Theoretically, twenty-one types of organizational learning styles are possible because a pair of learning orientations from seven learning orientations makes a set of organizational learning styles.

Ribbens' (1997) Organizational Learning Styles

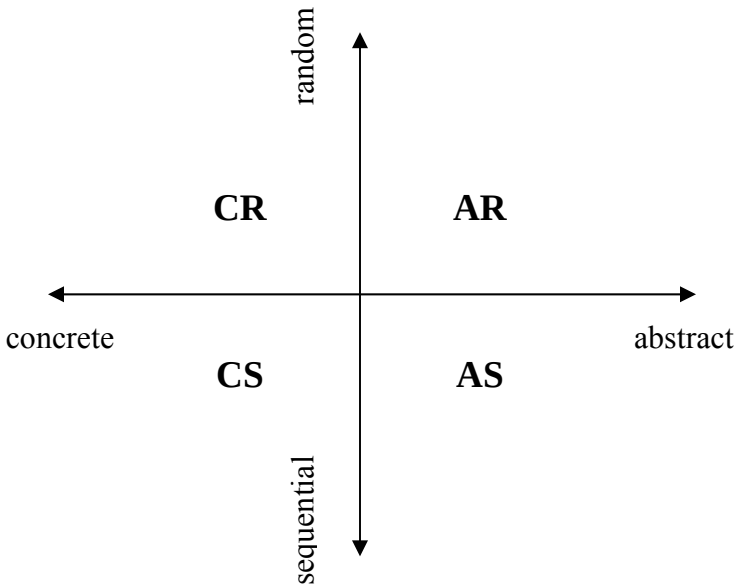
Ribbens (1997) emphasized the importance of "understanding of how organizations learn and why organizations learn in a particular manner" because "strategy formation depends upon information that has been brought into the organization and made accessible (i.e., learned)" (p. 59). To support his belief that

"different types of organizations will tend to exhibit different learning styles" (p. 59), Ribbens (1997) used the learning typology developed by Gregorc (1985) because concrete—abstract and sequential—random dimensions focused on information processing and preferences rather than internal cognition; thus Gregorc's (1985) typology can be separated from individual processes and utilized to examine aggregations.

Ribbens' (1997) organizational learning styles are depicted in Figure 5. The first dimension means that information gathered and stored in an organizational knowledge base can be assigned depending upon the ratio of abstract to concrete information. An organization with an abstract orientation learns from other organizations' experiences. Conversely, an organization with a concrete orientation can provide detailed analyses of previous organizational decisions (Ribbens, 1997).

The second dimension means that the collection and accessibility of information can be classified as random or sequential. An organizational knowledge base that is sequential may have readily accessible information but processes information only after it is ordered. On the other hand, a random organizational knowledge base may contain vast stores of valuable information, but access may be restricted to a few individuals who understand the random web of information storage or who have the right connections to the information (Ribbens, 1997).

Figure 5. Organizational Learning Style by Ribbens (1997)



Four organizational learning styles were identified by the combinations of two dimensions: abstract—random (AR); abstract—sequential (AS); concrete—random (CR); and concrete—sequential (CS). According to Ribbens (1997), the characteristics of these four learning styles can be summarized as follows:

1. AR type prefers to use theories and models to learn and stores information as webs or networks instead of ordered hierarchies.
2. AS type extensively uses theories and models in their learning processes but invests in sequentializing and ordering data for efficient subsequent retrieval.
3. CR type learns by acquiring facts and developing detailed histories and stores information via input associations or in networked non-structured storage.

4. CS type acquires facts and data and sorts and categorizes information into detailed hierarchies of storage.

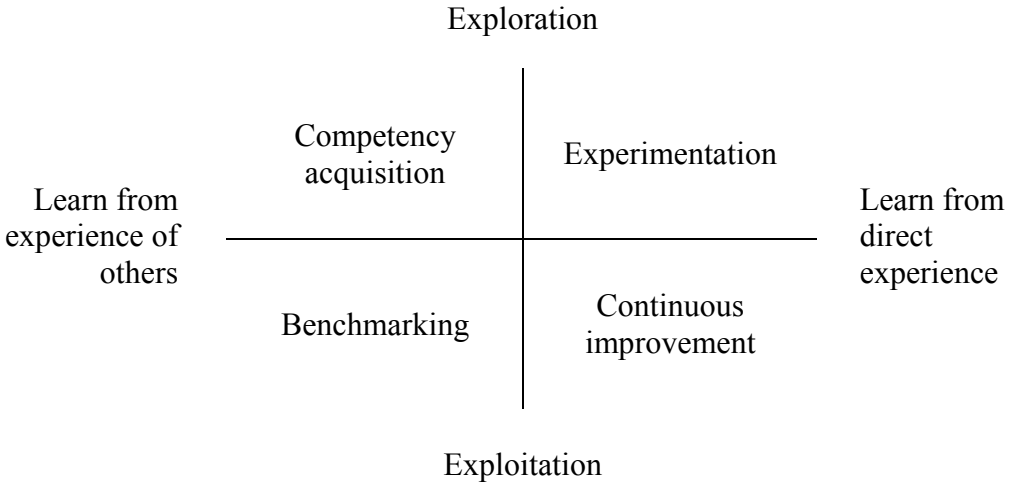
According to Gregorc (1985), an individual has a combination of the classifications above. Ribbens (1997) thought that it's even more likely to be true for organizations because organizations are composed of many individuals with differing personal styles and organizations have complex and frequently lengthy histories affecting styles.

Yeung et al.'s (1999) Types of Organizational Learning Styles

Yeung et al. (1999) identified four types of organizational learning styles as depicted in Figure 6. Four types of organizational learning styles were identified based on two learning orientations such as exploration—exploitation and learning from experience of others—learning from direct experience: experimentation; competency acquisition; benchmarking; and continuous improvement.

Organizations with experimentation type of organizational learning style "learn by trying many new ideas and being receptive to experimentation with new products and processes. The primary sources of learning are their customers and employees (direct experience). They primarily achieve organizational learning through controlled experimentation, from both inside and outside, rather than through exploiting the experience of other" (Yeung et al., 1999, p. 37).

Figure 6. Typology of Organizational Learning Style by Yeung et al. (1999)



Note: From *Organizational Learning Capability* (p. 36), by A. K. Yeung, D. O. Ulrich, S. W. Nason, and M. A. Von Glinow, 1999, New York: Oxford University Press. Copyright 1999 by Oxford University Press. Reprinted with permission.

Organizations with competency acquisition type of organizational learning style "learn by encouraging individuals and teams to acquire new competencies. Learning is a critical aspect of business strategy; it focuses on both the experience of others and an exploration of new possibilities" (Yeung et al., 1999, p. 37).

Organizations with benchmarking type of organizational learning style "learn by discovering how others operate and then trying to adopt and adapt this knowledge into their own organizations. Learning comes from organizations that have demonstrated excellent performance or developed the best practices in specific processes. Benchmarking companies primarily learn from the experience of others and exploit successful technologies and practices that already exist" (Yeung et al., 1999, p. 38).

Organizations with continuous improvement type of organizational learning style "learn by constantly improving on what has been done before and mastering each step before moving on to new steps in a process. They often emphasize a high degree of employee involvement (such as through quality control circles, problem solving groups, or self managed work teams) to resolve issues identified by internal and external customers. These are organizations that rely on both learning through direct experience and the exploitation of existing practices" (Yeung et al., 1999, p. 38).

In this dissertation, the concept of learning orientation by Nevis et al. (1995), DiBella et al. (1996), and DiBella (2001) was used to determine organizational learning style.

Factors of Organizational Learning Style

Even though many articles regarding organizational learning have been published, there are only a few literature related to the factors of organizational learning or organizational learning style. A representative literature dealing with the factors of organizational learning is Fiol and Lyles (1985).

According to Fiol and Lyles (1985), four contextual factors affect the probability of organizational learning: corporate culture conducive to learning; strategy that allows flexibility; an organizational structure that allows both innovativeness and new insights; and the environment.

Corporate culture consists of the shared beliefs, the ideologies, and the norms that influence organizational action-taking (Mitroff & Kilmann, 1976; Beyer, 1981;

Pfeffer, 1981). It's clear that the norms will influence organizational development. In turn, change and/or learning in organizations often involve a restructuring of those broad norms and belief systems (Fiol & Lyles, 1985).

The organization's strategic posture influence learning by providing a boundary to decision making and context for the perception and interpretation of the environment (Chandler, 1962; Cyert & Marth, 1963; Daft & Weick, 1984), and the strategic options are a function of the learning capacity within the organization (Burgelman, 1983). "The strategic posture also creates a momentum to organizational learning (Fiol & Lyles, 1985, p. 805).

Organizational structure is often seen as an outcome of organizational learning. The organizational structure, however, plays a critical role in determining organizational learning processes (Fiol & Lyles, 1985).

According to Hedberg (1981), learning requires both changes and stability. Too much stability within an organization can be dysfunctional, and too much change makes it difficult for the organizations to map their environment. Therefore, the process of organizational learning involves the creation and manipulation of the tension between stability and change (Fiol & Lyles, 1985).

Technology is one of the factors affecting organizational learning. According to Epple, Argote, and Devadas (1991), knowledge acquired through organizational learning is embodied in an organization's technology.[11]

[11] This idea can be interpreted like that organization's technology is a part of organizational-level learning stock, i.e. organizational memory, in Bontis et al. (2002).

It's also true that there is little research directed at the factors influencing organizational learning styles. For about the factors of organizational learning styles, Yeung et al. (1999) noted some of the reasons that companies develop different learning styles, such as large variations in industry characteristics, business strategy, business culture, and technology. Organizational learning styles may also reflect the size and age of an organization (Nevis et al., 1995) and may be influenced by how it was founded, hiring practices, and environmental demands (Ribbens, 1997). Organizational culture specifies the value and assumption content of organizational memory, which is a part of organizational learning (Berthon, Pitt, & Ewing, 2001).

In this dissertation, the factors of organizational learning styles mean organizational conditions that directly and/or indirectly contribute to an organizational learning style, including organizational culture, industry classification, and the size of an organization.

Organizational Culture[12]

The concept of organizational learning has its origin in the concept of culture in anthropology. The birth of the concept of culture can be traced back to Taylor in 1871 (Berthon et al., 2001). The concept of culture, then, was introduced in the field of sociology.

[12] After the concept of culture had been introduced in management theory, it was denominated as "corporate culture" and "organizational culture". Therefore, "organizational culture" is more general term used in several field of disciplines.

Already in the 1930s work groups in organizations developed their own unique behavioral norms and the emergent mode of behavior could assist or detract from an organization's performance (Roethlisberger & Dickson, 1975). Academically, the idea of organizational culture was recognized in 1948 by Selznick (Crow & Hartman, 2002) during the postwar years. However, it was not until the late 1970s the notion of organizational culture became the subject of research project (Van der Post, De Coning, & Smit, 1997), and in early 1980s the culture perspective burst onto the organizational studies (Denison, 1996).

To understand organizational culture, three aspects were reviewed in this section: definition of organizational culture; organizational culture vs. organizational climate; and types of organizational culture.

Definition of Organizational Culture

The research on organizational culture is extensive (Kowalczyk & Pawlish, 2002), and there is no shortage of definitions of organizational culture (Van der Post et al., 1997). However, the meaning and the definition of organizational culture are controversial and confusing.

One possible reason that makes the concept of organizational culture confusing can be discovered from the fact that the concept of culture, the root of the concept of organizational culture, has been disputed. Because there are multiple conceptions of culture (Smircich, 1983), it can be a natural phenomenon that there are multiple conceptions of organizational culture. The other possible reason can be discovered from the lack of empirical research. According Sokugawa (1996), it has been noted that the

lack of empirical research and the confusion of theoretical literature can be attributed largely to the confusion and absence of consensus regarding the definition and properties of organizational culture.

To discover prevailing definition of organizational culture, the definitions of organizational culture in the literature were reviewed. Some representative definitions of organizational culture are listed in Table 4.

According to Cameron and Ettington (1988), the definitions of organizational culture can be categorized as one of the following three categories:

1. Social interpretation definitions: These definitions focus on the interpretation schemas, meanings, or frames of references of individuals as indicators and components of culture.
2. Behavioral control definitions: These definitions focus on patterns of interaction or activities that define shared organization behavior.
3. Organizational adaptation definitions: These definitions emphasize habituated solutions to commonly encountered organizational problems.

Table 4. Definitions of Organizational Culture

Author	*Year*	*Definition*	*Page*
French & Bell	1984	The prevailing patterns of values, attitudes, beliefs, assumptions, expectations, activities, interactions, norms, and sentiments in an organization	18
Schein	1985	A pattern of basic assumptions that are considered valid and are taught to new members as the way to perceive, think, and feel in the organization	9
Quinn	1988	The set of values and assumptions that underlie the statement, 'this is how we do things around here'	66-67
Ott	1989	A social force that controls patterns of organizational behavior	69
Gordon et al.	1990	The systems of shared values, beliefs, and habits within an organization that interacts with formal structure to produce behavioral norms	621
Tosi, Rizzo, & Carrol	1990	The patterned way of thinking, feeling and reacting that exists in an organization or its subsectors	117
White	1991	The behavior patterns and standards that bind it together	17
Kreitner & Kinicki	1992	The social glue that binds members of the organization together through shared values, symbolic devices, and social ideas	706
Lussier	1993	The shared values and assumptions of how its members will behave	397
Newstrom & Davis	1993	The set of assumptions, beliefs, values, and norms that is shared among its members	58
Sokugawa	1996	The beliefs and values that organizational members share about their work and their workplace	31
Berthon et al.	2001	The conscious and unconscious patterns of assumptions, values, and beliefs shared by a collective	137
Kowalczyk & Pawlish	2002	A set of values, beliefs, and norms shared by members of an organization	162

The definitions of organizational culture listed in Table 4 were categorized based on Cameron and Ettington's (1988) contention. Most of the definitions of organizational culture listed in Table 4 could be categorized in social interpretation definitions (Schein, 1985; Quinn, 1988; Ott, 1989; Kreitner & Kinicki, 1992; Lussier, 1993; Newstrom & Davis, 1993; Sokugawa, 1996, Berthon et al., 2001; Kowalczyk & Pawlish, 2002). Some of the definitions of organizational culture could be categorized in behavioral control definitions (French & Bell, 1984; Gordon et al., 1990; Tosi et al. 1990). One definition could be a combination of social interpretation definition and behavioral control definition (White, 1991). However, no one definition of organizational culture in Table 4 could be categorized in organizational adaptation definition.[13]

There were other ways of perspectives in categorizing the concept of organizational culture. One party understands culture as something an organization has, while the other party perceives culture as something that an organization is. Some authors emphasize implicit, unconscious source of culture, while others emphasize explicit, tangible source of culture such as organizational etiquette, espoused value, and reward system (Berthon et al., 2001)

One of the best ways of understanding organizational culture is that culture is to the organization what personality is to the individual (Van der Post et al., 1997). Based on the literature review, organizational culture in this study is defined as a set of assumptions, beliefs, values, and norms shared by the members of an organization.

[13] There is a possibility that the definitions of organizational culture in Table 4 could be biased because of the limitation of the literature review.

Organizational Culture vs. Organizational Climate

It's not difficult to find out the term organizational climate in the literature. Actually, organizational climate is an allied concept of organizational culture (Berthon et al., 2001), and organizational culture studies are indistinguishable from the studies in the older and now neglected tradition of organizational climate (Denison, 1996). Several authors such as Schneider (1985), Pettigrew (1990), and Reichers and Schneider (1990) tried to compare the literature of organizational culture and organizational climate, but the similarities and the differences were not explained frankly.

According to Denison (1996), there are contrasting perspectives between organizational culture and organizational climate researches as listed in Table 5. Organizational culture literature is contextualized and idiographic in terms of epistemology, has emic point of view, uses qualitative field of observation research method, analyzes underlying values and assumptions, deals with historical evolution, has theoretical foundations in social construction and critical theory, and is mainly related to the discipline of sociology and anthropology, while climate literature is comparative and nomothetic in terms of epistemology, has etic point of view, uses quantitative survey data, analyzes surface-level manifest, deals with ahistoric snapshot, has theoretical foundations in Lewinian field theory, and is mainly related to psychology. Even though organizational culture literature and organizational climate literature have those differences explained in Table 5, Denison (1996) concluded that the most important differences between organizational culture and organizational climate lies not in the nature of phenomenon or study method but in the theoretical foundations.

Table 5. Contrasting Perspectives between Organizational Culture and Organizational Climate

Differences	*Culture Literature*	*Climate Literature*
Epistemology	Contextualized and idiographic	Comparative & nomothetic
Point of view	Emic (native point of view)	Etic (researcher's viewpoint)
Methodology	Qualitative field of observation	Quantitative survey data
Level of analysis	Underlying values and assumptions	Surface-level manifest
Temporal orientation	Historical evolution	Ahistorical snapshot
Theoretical foundations	Social construction; critical theory	Lewinian field theory
Discipline	Sociology & anthropology	Psychology

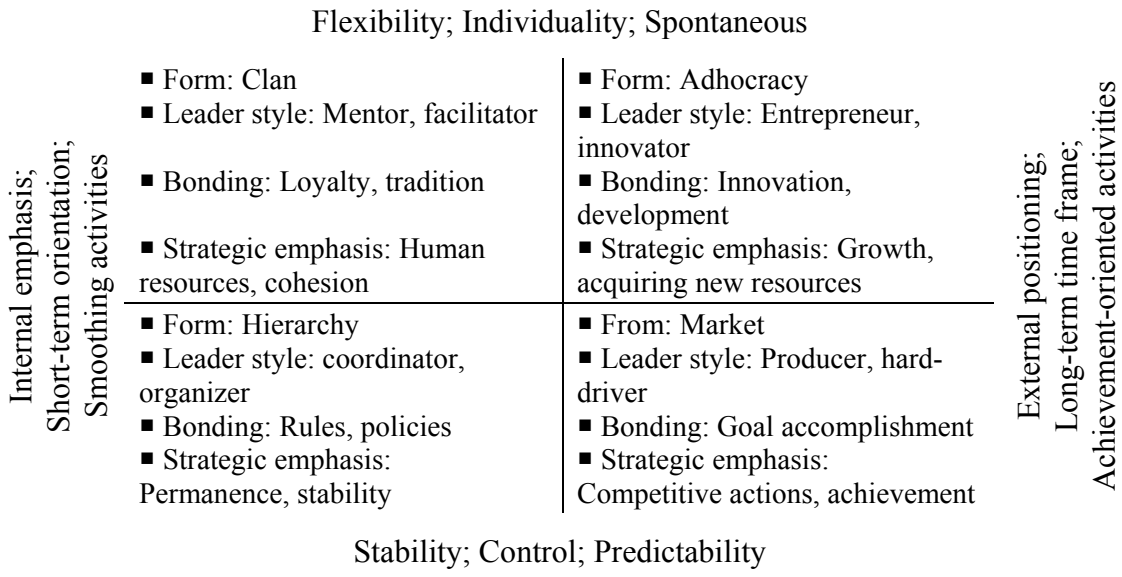
Note: From "What is the Difference between Organizational Culture and Organizational Climate? A Native's Point of View on a Decade of Paradigm Wars," by D. R. Denison, 1996, *Academy of Management Review*, *21*, p. 625. Copyright 1996 by Academy of Management Review. Reprinted with permission.

Types of Organizational Culture

A number of authors such as Cameron and Ettington (1988), Nutt (1988), and Daft (1998) used Jungian axes to categorize four types of organizational culture. Cameron and Ettington (1988) labeled these four types of organizational culture clan, hierarchy, adhocracy, and market, which corresponded to Nutt's (1988) consultative, analytic, charismatic, and speculative culture and to Daft's (1998) clan, bureaucratic, adaptability/entrepreneurial, and mission. The archetypal nature of four organizational cultures has received further validation by Denison and Mishra (1995).

Four types of organizational culture by Cameron and Ettington (1988) are described in Figure 7. Two axes that define four types of culture are process and focus. Process ranges from organic to mechanistic, with the former exemplifying flexibility, individuality, and spontaneity and the latter exemplifying stability, control, and predictability. Focus ranges from internal to external, with the formal exemplifying internal emphasis, short-term orientation, and smoothing activities and the latter exemplifying external positioning, long-term time frame, and achievement-oriented activities.

Figure 7. Characteristics of Culture Type by Cameron and Ettington (1988)



Note: From "The Concept of Foundations of Organizational Culture," by K. S. Cameron, & D. R. Ettington, In *Higher Education: Handbook of Theory and Research* (Vol. 6, pp. 356-396), by J. C. Smart (Ed.), 1988, New York: Agathon Press, p372. Copyright 2004 by Kluwer Academic/Plenum. Reprinted with permission.

The clan culture, with organic process and internal focus, emphasizes loyalty, tradition, human resources, and cohesion. The hierarchy culture, with mechanistic process and internal focus, emphasizes rules, policies, permanence, and stability. The adhocracy culture, with organic process and external focus, emphasizes innovation, development, growth, and acquiring new resources. The market culture, with mechanistic process and external focus, emphasizes goal accomplishment, competitive actions, and achievement.

In creating four types of organizational culture, Cameron and Ettington (1988) contained four attributes of organizational culture type in their instrument: institutional characteristics; institutional leader; institutional glue; and institutional emphases. Other attributes of organizational culture can be discovered in Likert (1967), Harrison (1972), Gordon and Cummins (1979), Allen and Dyer (1980), Peters and Waterman (1982), Bettinger (1989), Denison (1990), Robbins (1990), Peterson and White (1982), and Sokugawa (1996).

Concept of HRD

"Human resource development (HRD) is a relatively young academic discipline but an old well-established field of practice" (Swanson & Holton, 2001, p. 3). In this section, the literature regarding the concept of HRD was reviewed in two aspects: categories of HRD definitions; and approaches to HRD.

Categories of HRD Definitions

The definition of HRD should answer what HRD is. However, not all of the definitions of HRD listed in the literature answer what HRD is. For example, historical summary of HRD definitions were presented in Weinberger (1998). Strictly speaking, only eleven out of eighteen definitions of HRD were genuine definitions of HRD. Craig's (1976) definition was about the focus of HRD, McLagan's (1983) definition was the definition of training and development, Chalofsky and Lincoln's (1983) definition was about the discipline of HRD, Jacobs (1988) dealt with human performance technology, Marquardt and Engel (1993) dealt with HRD skills, and Marsick and Watkins (1994) dealt with what HRD offered and where it had to be positioned.

The definition of HRD varies from scholar to scholar as summarized in the followings:

- Activity (Nadler, 1970; Gilley & England, 1989; Desimone, Werner, & Harris, 2002)
- (Leaning) System (Nadler & Wiggs, 1986)
- Process (Swanson, 1995; Swanson & Holton, 2001)
- Integrated use (McLagan, 1989)
- Field of study and practice (Watkins, 1989a; Chalofsky, 1992)
- Learning experience (Nadler & Nadler, 1989)
- Process or activity (McLean & McLean, 2001)

Theoretically, there are three possible categories of HRD definitions: (1) HRD as a practice; (2) HRD as a discipline; and (3) HRD as both a discipline and a practice.

However, only two categories of HRD definitions were found in the literature: (1) HRD as a practice (Nadler, 1970; Nadler & Wiggs, 1986; Gilley & England, 1989; McLagan, 1989; Nadler & Nadler, 1989; Swanson, 1995; McLean & McLean, 2001; Swanson & Holton, 2001; Desimone, 2002); and (2) HRD as both a discipline and a practice (Chalofsky, 1992; Watkins, 1989a). No one defined HRD as only a discipline. HRD as a disciple should be renamed and "HRDlogy" or "HRDics" can be alternatives for a new name of HRD as a discipline.[14]

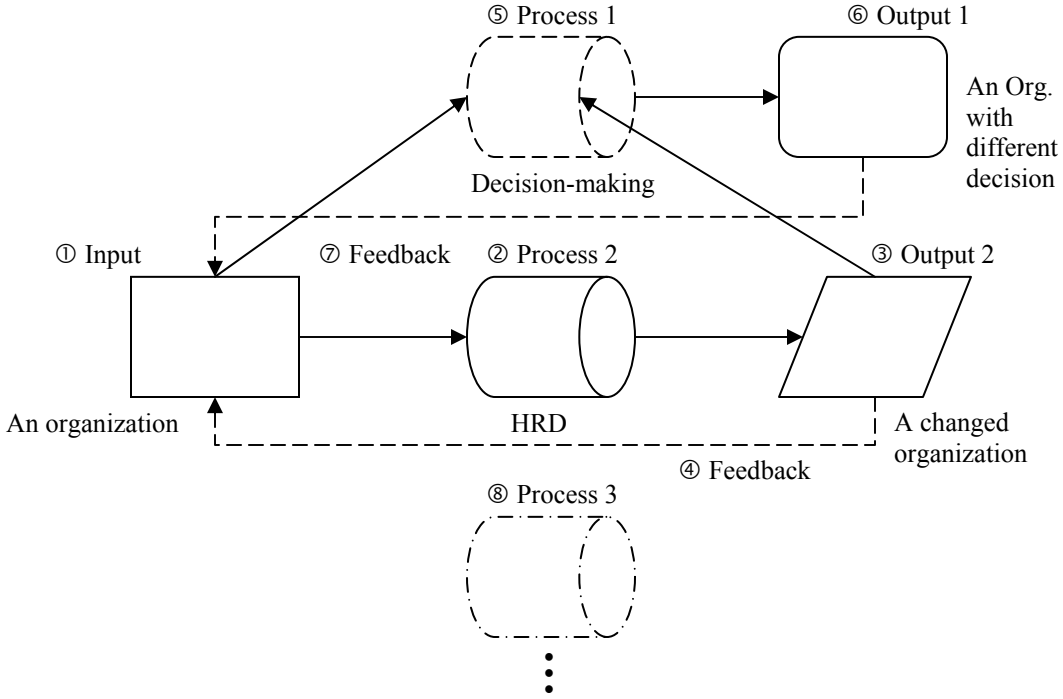
Approaches to HRD[15]

There are three possible approaches to HRD as depicted in Figure 8:

1. Approach I: Narrow learning approach
2. Approach II: Broad learning approach
3. Approach III: Broad performance approach

[14] It's very confusing if a term indicates two or more things. If we think the relationship between economy (a practice or a phenomenon) and economics (a discipline), my suggestion might make sense. There might be better terminology for naming HRD as a discipline.
[15] HRD in this section means "HRD as a field of practice".

Figure 8. Approaches to HRD



The difference between the learning approach and the performance approach is related to the debate regarding the outcome of HRD. The outcome in the learning approach to HRD is learning, and the outcome in the performance approach to HRD is performance. The difference between narrow and broad approach is related to the debate regarding a process-perspective of HRD and a system-perspective of HRD.[16]

HRD in each approach follows the following path:

1. Approach I (Narrow learning approach): ②
2. Approach II (Broad learning approach): ① → ② → ③ → ④
3. Approach III (Broad performance approach): ① → ② → ③ → ⑤ → ⑥ → ⑦

[16] The position of Swanson and Holton (2001) "is that the dominant view should be of HRD as a process" (p. 22). They also mentioned "most often, HRD is talked as a process not a system" (p. 22).

Among three approaches to HRD, Approach II is considered as the most reasonable approach because of the following reasons:

1. The purpose of HRD is thought to improve or change something.[17] If HRD is perceived as only a process, preferred outcome of HRD can be stated only in the statement of the purpose of HRD function in the corporations. In this case, even though preferred outcome is not produced because of the malfunction of HRD, nobody can blame HRD function because the failure can be attributed to other factors. If we want HRD to be wholly responsible for producing something improved or changed, HRD should be perceived as a system consisting of input, process, and outcome.
2. If we want HRD to be perceived as a strategic component of an organization, something improved or changed should not be only human expertise. Something improved or changed should be an organization.
3. One of the primary assumptions in HRD is that HRD would contribute to the enhancement of organizational performance. However, if we understand the 'productive organizational learning' by Argyris and Schön (1996), it's not difficult to discover that there are many other factors affecting transformation of learning to performance. Making preferable environment facilitating HRD outcome to organizational performance is beyond HRD system.

[17] Something can be behavioral change/improvement and/or cognitive change/improvement.

Based on the three discussions above, HRD in this study has the following definitions: HRD is a component of an organizational system to facilitate organizational learning. The purpose of organization learning is to enhance organizational performance.

Roles of HRD

To review the literature regarding the roles of HRD, the concept of role in this study was determined at first. Secondly, studies proposing the roles of HRD were reviewed. Thirdly, the roles of HRD in organizational learning were reviewed, even though there were only a few studies mentioning the roles of HRD in organizational learning. Finally, a multiple-role model for HRD was proposed.

The Concept of Role

Before reviewing the literature regarding the roles of HRD, it is necessary to review what the concept of role is. Newstrom & Davis (1993) defined role as "the pattern of actions expected of a person in activities involving others" (p. 52) and divided the pattern of actions to occupational role, family role, social role, and many others. Gordon et al. (1990) defined role as "the total pattern of expected behavior of an individual" and classified the pattern of expected behavior to task roles, maintenance roles, and self-oriented roles.

Even though, the concept of role was originally developed to describe individual behaviors, the concept of role can be applied to organizations. For examples, Lussier (1993) intended that "shared expectations of how group members will fulfill the requirements of their position" (p. 356).

There are three possible role perceptions such as one's own perception, others' perception, and one's own perception as seen by others. In this dissertation, the researcher chose others' perception as a role perception.[18] The concept of the roles of HRD were defined as the total patterns of occupational behaviors in HRD functions as perceived by the informants who are responsible for HR functions in this dissertation.

Studies Regarding Roles of HRD

The first attempt to identify the roles of HRD in the literature was reported by McLagan (1989) as listed in Table 6. Eleven roles of HRD professionals were enumerated and included administrator, evaluator, HRD manager, HRD materials developer, individual career-development advisor, instructor or facilitator, marketer, needs analyst, organization change agent, program designer, and researcher. Although the effort to define a field is necessary in an emerging field like HRD, the approach by McLagan (1989) was informed by a behavioristic view of practice and a reductionistic bias (Watkins & Marsick, 1992).

[18] The reason that the researcher chose others' perception will be explained in Chapter III.

Table 6. HRD Roles by McLagan (1989)

HRD Roles	*Description*
Administrator	Providing coordination and support services for the delivery of HRD programs and services
Evaluator	Identifying the impact of an intervention on individual or organizational effectiveness
HRD manager	Supporting and leading a group's work and linking that work with the total organization
HRD materials developer	Producing written or electronically-mediated instruction
Individual career-development advisor	Helping individuals assess personal competencies, values, and goals; and identify, plan, and implement development and career actions
Instructor or facilitator	Presenting information, directing structured learning experiences, and managing group discussions and group process
Marketer	Marketing and contracting for HRD viewpoints, programs, and services
Needs analyst	Identifying ideal and actual performance and performance conditions and determining causes of discrepancies
Organization change agent	Influencing and supporting changes in organizational behavior
Program designer	Preparing objectives, defining content, and selecting and sequencing activities for specific interventions
Researcher	Identifying, developing, or testing new information (such as theory, research, concepts, technology, models, and hardware) and translating the information into implications for improved individual or organizational performance

Another version of the roles of HRD was reported by McLagan (1996) and included nine roles of HRD such as HR strategic adviser, HR systems designer and developer, organization change agent, organization design consultant, learning program specialist (or instructional designer), instructor/facilitator, individual development and

career counselor, performance consultant (or couch), and researcher as described in Table 7.

Table 7. HRD Roles by McLagan (1996)

HRD Roles	*Description*
HR strategic advisor	To bring the issues and trends concerning an organization's external and internal people to the attention of strategic decision makers; to advice decision makers on the costs and benefits of addressing such issues and recommend long-term strategies to support organizational excellence and endurance
HR systems designer and developer	To design and prepare HR systems for implementation so that HR systems and actions are mutually reinforcing and have maximum impact on organizational performance, development, and endurance
Organizational change consultant	To facilitate the development and implementation of strategies for transforming the organizations
Organization design consultant	To identify the work required to fulfill organizational strategies; to organize the work so that it makes efficient and effective use of resources
Learning program specialist	To identify learning needs and design and develop structured learning programs and materials
Instructor/facilitator	To present information, lead structured learning experiences, and facilitate group discussions and group processes
Individual development and career consultant	To help people assess their competencies, values, and goals so they can identify, plan, and implement development actions
Performance consultant	To assist a group or individuals to add value in the workplace
Researcher	To assess HRD practices and programs and their impact empirically; to communicate results so that the organization and its people accelerate their change and development

Another representative attempt at identifying the roles of HRD was reported by Watkins (1989b, 2000). For the roles of HRD, Watkins (1989b) used five alternative

metaphors including organizational problem solver, organizational change agent, organizational designer, organizational empowerer, and developer of human capital as described in Table 8. Watkins (2000) argued that "the HRD professional is the tool or instrument that she or he takes into organizations" (p. 56), and that the roles of HRD were generally facilitating a process, teaching new skills, or coaching others to influence their behavior indirectly and foster change.

Table 8. Roles of HRD by Watkins (1989b)

Roles of HRD	*Description*
Organizational problem solver	To design instructional programs to respond to organizationally defined problems
Organizational change agent	To help people and organization change
Organizational designer	To diagnose and select the structure and formal system of communication, authority, and responsibility to achieve organizational goals
Organizational empowerer	To transform people and organization in order to foster long-term health and effectiveness
Developer of human capital	To develop the productive capabilities of human beings

Those studies regarding the roles of HRD above were published in the journals. However, additional materials regarding the roles of HRD can be discovered in the books such as Gilley and Eggland (1989) and Desimone et al. (2002).

Roles of HRD in Organizational Learning

The emphasis on organizational learning poses challenges for HRD (Tjepkema et al., 2002) and "HRD professionals are uniquely positioned to facilitate organizational

learning because they are the recognized learning specialists" (Dixon, 1992, p. 47). The importance of the roles of HRD in organizational learning is echoed by Watkins and Marsick (1992), who argued that human resource developers could systematically and developmentally increase the learning capacity of the organization and human resource developers have a role as developers of the organization's learning system.

Studies regarding the roles of HRD in facilitating organizational learning include Dixon (1992) and Tjepkema et al. (2002). Dixon (1992) extracted the role of HRD professionals as learning facilitators by reviewing organizational learning related literature. Tjepkema et al. (2002) insisted that the new roles of HRD practitioners would be that of a strategic learning facilitator, performance consultant or change agent.

A Multiple-Role Model for HRD

In previous studies regarding the roles of HRD, the roles of HRD were just placed in a row. Therefore, the researcher proposes a multiple-role for HRD with reference to a multiple-role model for HRM by Ulrich (1997) as depicted in Figure 9.

The two axes represent the HR professional's focus and activities. The focus ranges from future/strategic to day-to-day/operational. The activities range from process to people. These two axes portray four HR roles: management of strategic human resources; management of firm infrastructure; management of employee contribution; and management of transformation and change.

Figure 9. Ulrich's (1997) Multiple-role Model for HRM

Note: From *Human Resource Champions: The Next Agenda for Adding Value and Delivering Result* (p. 24), by D. Ulrich, 1997, Boston, MA: Harvard Business School Press. Copyright 1997 by the President and Fellows of Harvard College. Reprinted with permission.

The roles of HRD in the previous studies (McLagan, 1989, 1996; Watkins, 1989b, 2000) were analyzed based on the focus and the activity dimensions. All roles of HRD in the previous studies were considered to be possibly allocated to the four quadrants determined by the focus and the activity dimensions. The result of classifying the roles of HRD in the previous studies is depicted in Figure 10. Each four quadrant can be renamed with strategic human resource developer, organizational change agent, organizational designer, and human capital developer.

Figure 10. The Result of Classifying the Roles of HRD in Previous Studies

Future/strategic focus

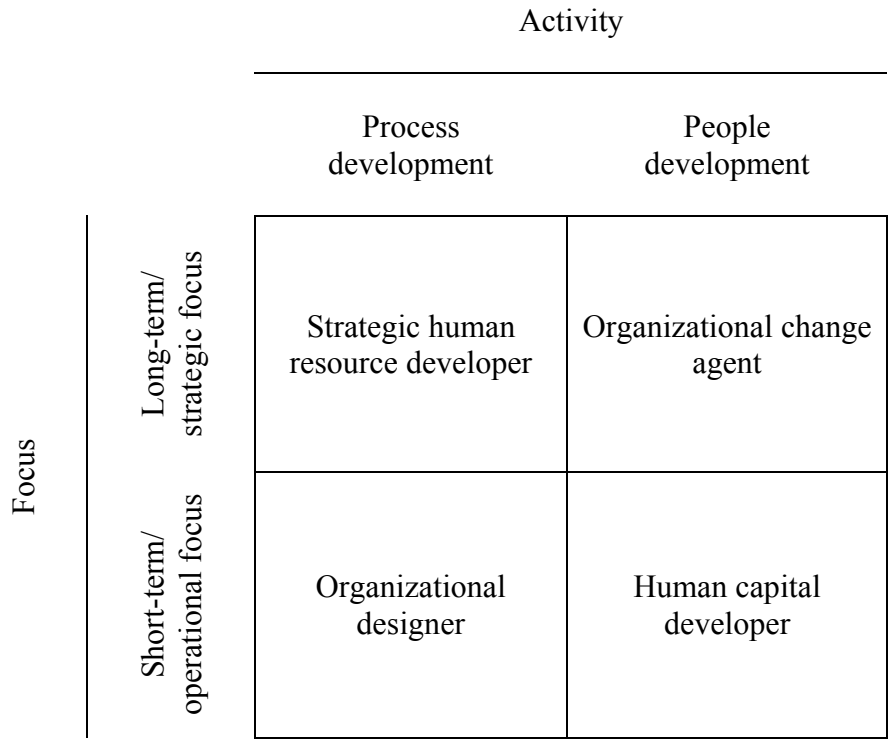
PROCESS		PEOPLE
■ Marketer ■ HRD manager ■ HR strategic advisor ■ Organizational empowerer	■ Organization change agent ■ Evaluator ■ Organizational change consultant ■ Coaching others to foster change	
■ Researcher ■ Need analyst ■ Program designer ■ HRD material developer ■ Administrator ■ HR systems designer and developer ■ Organization design consultant ■ Learning program specialist ■ Organizational problem solver ■ Organizational designer ■ Facilitating a process	■ Instructor/facilitator ■ Individual career developer ■ Individual development and career consultant ■ Performance consultant ■ Developer of human capital ■ Teaching new skills ■ Coaching others to influence their behavior indirectly	

Day-to-day/operational focus

A multiple-role model for HRD proposed by the researcher for this study is depicted in Figure 11. There are two dimensions in the model: the activity; and the focus. Four roles of HRD are strategic human resource developer, organizational change agent, organizational designer, and human capital developer. The roles and the outcomes of four roles of HRD are described in Table 9.

A strategic human resource developer's activity is related to process development and it focuses on long-term and strategic matters. The role of HRD as a strategic human resource developer is to develop strategic human resources, and, therefore, the outcome of this role is organizational strategy.

Figure 11. A Multiple-role Model for HRD



An organizational change agent's activity is related to people development and it focuses on long-term and strategic matters. The role of HRD as an organizational change agent is to facilitate organizational change, and, therefore, the outcome of this role is a changed organization. An organizational designer's activity is related to process development and it focuses on short-term and operational matters. The role of HRD as an organizational designer is to consult organizational design, and, therefore, the outcome of this role is well-equipped organizational infrastructure. A human capital developer's activity is related to people development and it focuses on short-term and operational matters. The role of HRD as a human capital developer is to develop human capital, and, therefore, the outcome of this role is developed human capital.

Table 9. Definitons of HRD Roles

Metaphor	*Role*	*Outcome*
Strategic human resource developer	Development of strategic human resources	Strategy
Organizational change agent	Facilitation of organizational change	Changed organization
Organizational designer	Consulting of organizational design	Infrastructure
Human capital developer	Development of human capital	Human capital

CHAPTER III

METHODOLOGY

Following a review of the literature, this study was designed to discover what organizational learning styles existed in the selected corporations in the Republic of Korea at first. Secondly, organizational factors that differentiate the organizations with different organizational learning styles were identified. Thirdly, the roles of HRD to facilitate organizational learning within the organizations in each organizational learning style were identified. Finally, the differences in the roles of HRD to facilitate organizational learning among the organizations with different organizational learning styles were identified. A survey instrument was developed by the research in reference with previous studies (DiBella, 2001; Sokugawa, 1996; Yeung et al. 1999; Ulrich, 1997), and the data were analyzed to determine the nature and significance of the variables in the study. The methodology utilized in the study is discussed in detail in this chapter.

Population

The population for this study was the key informants at the corporations of wholesale and retail trade, manufacturing, and hotels and restaurants industry in the Republic of Korea during July 2003 and December 2003.[19] The number of the corporations and the number of the employees are listed in Table 10.

[19] The researcher selected the corporations in the three industries because they were the top 3 industries in terms of the number of the establishments and the employees in the Republic of Korea.

According to the Korean Statistical Information System (KOSIS), the total number of the corporations considered for this study was 1,868,192 in 2002. This number of establishments consisted of 59.6% of the total number of establishments in the Republic of Korea in 2002. The total number of employees in the corporations of wholesale and retail trade, manufacturing, and hotels and restaurants industry was 7,338,932. This number of employees consisted of 53.0% of the total number of employees in Korea in 2002.

Table 10. Number of the Corporations and Employees in Korea 2002

Industry Classification	*No. of the Corporations*	*No. of the Employees*
Wholesale and retail trade	898,874 (28.7%)	2,615,733 (17.9%)
Manufacturing	333,921 (10.7%)	3,392,865 (23.2%)
Hotels and restaurants	635,397 (20.3%)	1,730,334 (11.8%)
Subtotal	1,868,192 (59.6%)	7,738,932 (53.0%)
All industries	3,131,963 (100.0%)	14,608,322 (100.0%)

Note: From "*Census on Basic Characteristics of Establishments, Business Enterprise*," by Korea National Statistical Office (KNSO). Retrieved February 27, 2004, from http://kosis.nso.go.kr.

The list of the corporations in the *2002 annual corporation reports* (Maeil Business Newspaper, 2002) was used for the sampling.[20] A dimensional sampling (Arnold, 1970) was introduced in this study. The first dimension was the industry

[20] There was not a list of corporations that contained the information of all corporations. The *2002 annual corporation reports* (Maeil Business Newspaper, 2002) was used for sampling because it covered the widest range of the corporations. Thirty thousands corporations or so were listed in the report.

classification, i.e. wholesale and retail trade, manufacturing, and hotels and restaurants. The second dimension was the size of an organization, i.e. small and medium-sized and large-sized corporations. The size of an organization was determined according to the acts promulgated by the Ministry of Legislation (MOLEG) in the Republic of Korea.

For the sampling, the list of the corporations in the *2002 annual corporation reports* was arranged according to the industry classification and the size of an organization. The corporations in each category were sorted according to the nominal assets. Random digits (Snedecor & Cochran, 1980) were used to select the samples. Sample selection was continued until the researcher had 40 corporations in each category, where the president or the vice president of HR division or the president of the corporation agreed to participate in the study. Totally, 240 corporations were sampled for the study.[21] Basically, three key informants, i.e. persons who were responsible for HR functions, in each corporation were used to create the organization-level indicator.[22]

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[21] To obtain 240 corporations, the researcher contacted 375 corporations. Among the corporations that the researcher contacted, 64.0% agreed to participate in the study.

[22] The persons who were responsible for HR functions were considered as the best key informants in this study because of the following reasons:

- Organizational learning is believed to occur not only in the organizations that have HRD functions in the organizations but also in the organizations that don't have HRD functions. The target population for this study was not limited to the organizations with HRD functions.
- The concept of role in this study means others' perception, not one's own perception and one's own perception as seen by others. If persons who work for other functions than HRD functions believe that HRD is necessary for facilitating a corporation's organizational learning, it could be more persuasive ground for emphasizing the importance of HRD in organizational learning. The roles of HRD, therefore, were not determined by the role perception of HRD persons in this study.
- The HR persons are believed to have a knowledge regarding HRD functions because HR personnel manipulate tasks regarding human resources.
- In a previous study regarding organizational learning style, Yeung et al. (1999) used HR professionals as key informants.

In small corporations, which had less than three key informants, one or two key informants were used to create the organization-level indicator.

Instrumentation

The researcher developed the survey instrument based on the literature review. The survey instrument was divided into four sections: organizational learning style section; organizational culture section; roles of HRD section; and demographic information section.

The organizational learning style section was based on the *Organizational Learning Inventory* (OLI) (DiBella, 2001).[23] Twenty-one items, i.e. three items in each learning orientation, were included in this section. The item numbers in each learning orientation are listed in Table 11.

Table 11. Learning Orientations and Relevant Item Numbers in the Survey Instrument

Learning Orientations	*Item Number*
Knowledge source	1, 14, 15
Content—process focus	2, 13, 16
Knowledge reserve	3, 12, 17
Dissemination mode	4, 11, 18
Learning scope	5, 10, 19
Value—chain focus	6, 9, 20
Learning focus	7, 8, 21

[23] In the *Organizational Learning Inventory* (DiBella, 2001), each of seven learning orientations is determined by one score. Frankly speaking, it can be said that the OLI has an item in each learning orientation. However, there are four to five statements in each learning orientation, which the respondents use as criteria to determine their organizations' learning orientation. Among the four to five statements, three statements in each learning orientation, which were considered to be appropriate for this study, were selected and modified. Each statement was used as a separate item in the survey instrument in this study.

The organizational culture section was based on Cameron and Ettington's (1988) four types of organizational culture and the Sokugawa's (1996) five attributes of organizational culture to create four culture types. The researcher modified Sokugawa's (1996) instrument because it was not considered completely appropriate for the corporations. Twenty items were included in the organizational culture section. The item numbers in each organizational culture type and each attribute are listed in Table 12.

Table 12. Culture Types, Attributes, and Relevant Item Numbers in the Survey Instrument

Culture Type	*Org. Emphases*	*Org. Glue*	*Org. Leadership*	*Management Style*	*Decision Making*
Clan	1	19	11	8	5
Adhocracy	10	2	20	12	9
Hierarchy	14	6	3	16	13
Market	18	15	7	4	17

The roles of HRD section were based on the multiple-role model for HRD. The researcher developed the roles of HRD section with reference to Ulrich (1997). Twenty items, i.e. five items in each role of HRD, were included in this section. The item numbers in each role of HRD are listed in Table 13.

Table 13. Roles of HRD and Relevant Item Numbers in the Survey Instrument

Roles of HRD	*Item Number*
Strategic human resource developer	1, 5, 8, 11, 19
Organizational change agent	2, 9, 10, 12, 20
Organizational designer	3, 6, 13, 14, 16
Human capital developer	4, 7, 15, 17, 18

The demographic information section included the following two sub sections:

1. Organizational information section: corporation title; industry classification; number of employees; and whether or not an HRD function exists in the corporation.
2. Individual information section: age; gender; work experience at present corporation; and position ranking.

A five-point Likert-type scale was used except for the demographic information section. The validity of the survey instrument was confirmed via content validity. Ten faculty members and doctoral students in Texas A&M University, who were believed to have expert knowledge about organizational learning, organizational culture, and the roles of HRD, confirmed the validity of the survey instrument.[24] The survey instrument was translated to the Korean language by the method suggested by Vallerand (1989).

The instrument was field-tested on 20 corporations selected from the targeted population to increase the readability of the scale and to make it appropriate for the population.[25] Face validity was supported by the subjects' confirmation that the instrument reflected their beliefs about organizational learning, organizational culture, and the roles of HRD. The researcher used the results of the field-test to refine the instrument. The final version of the instrument is presented in Appendix C.

[24] The cover letter for content validation is presented in Appendix A.
[25] These corporations were not included in the final sampling.

Procedures

The researcher contacted the president or the vice president of the HR division at the selected corporations in the Republic of Korea via telephone or e-mail, explained the purpose of the study and the benefit of the study for the organization, and requested participation in the study.[26] The contact information of three key informants, i.e. HR staffs, HR managers and/or HR directors, was requested. In case that three key informants were not available, the contact information of one or two key informants was requested.

To ensure a high response rate, the researcher followed the suggestions by Roth and BeVier (1998). The researcher contacted the key informants in each corporation via telephone or e-mail and notified them of the delivery of the survey instrument. The survey instrument accompanying a cover letter (See Appendix B) as well as detailed instructions was delivered directly to the key informants via mail, e-mail or fax. A follow-up letter (See Appendix D) and a second survey instrument were distributed to the key informants failing to respond within two weeks. Consent to participate in this study was assumed by the return of the completed survey instrument.

The results of the distribution and the collection of the survey instrument are summarized in Table 14. The survey instrument was distributed to 353 key informants at 240 corporations. The number of the key informants who returned the survey instrument was 237 at 166 corporations for a return rate of 67.1% (237/353).

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[26] In the case that there was no separate HR division at the corporation, the researcher contacted the president of the corporation.

Table 14. The Result of the Distribution and the Collection of the Survey Instrument

	Distribution	*Collection*	*Return Rate*
Number of the key informants	353	237	67.1%
Number of the organizations	240	166	69.2%

Data Analysis

First of all, the data from 237 key informants at 166 corporations were explored to confirm that all respondents answered the survey instrument honestly.[27] Through this exploration, the data from 12 key informants were excluded from the final data analysis. In terms of the number of the corporations, 8 corporations were excluded from the final data analysis. Finally, the data from 225 key informants at 158 corporations were used for the data analysis.

The results of the study were reported using quantitative techniques as outlined in Gall, Borg, and Gall (1996). The data collected from the survey instrument were analyzed with SPSS windows version 11.0. The aggregation approach was used to pool the responses of two or three key informants to create organization-level indicators via simple unweighted average. In the case of one key informant, the response of the key informant was treated as the organization-level indicator.

Descriptive statistics such as frequency, percentage, mean, and standard deviation and inferential statistics were used. Factor analysis was introduced to identify

[27] If the respondent checked the same number for most of the items or if there was a patterned response, it was believed that the respondent answered the survey instrument dishonestly.

the factor structure of the survey instrument. Cluster analysis was introduced to identify organizational learning styles (Research Question 1). One-way ANOVA was introduced to describe the characteristics of each organizational learning style. Canonical discriminant analysis was introduced to discover which learning orientations explained the characteristics of the clusters of organizational learning style and to present evidence of the validity of the cluster analysis. To identify the factors differentiating the organizations with different organizational learning styles, multinomial logistic regression and two-way contingency table analysis were introduced (Research Question 2). To identify the organizational culture type, cluster analysis, one-way ANOVA, and canonical discriminant analysis were introduced. To describe the roles of HRD to facilitate organizational learning within the organizations in each organizational learning style, mean and standard deviation was introduced (Research Question 3). To identify the differences in the roles of HRD to facilitate organizational learning among the organizations with different organizational learning styles, MANOVA was introduced (Research Question 4). In each statistical analysis, a p-value of .05 was considered to indicate statistical significance. Tables were used to report the findings.

CHPATER IV

ANALYSIS OF DATA

The results of the analyses of the data collected from the selected corporations through the survey instrument are presented in Chapter IV. The analyses of the data that follow are divided into five sections: (1) analysis of demographic data; (2) factor structure of the survey instrument; (3) organizational learning style; (4) factors of organizational learning styles; and (5) the roles of HRD.

Analysis of Demographic Data

The data reported for demographic information are grouped into two areas: (1) organizational information; and (2) individual information. The data for the organizational characteristics of the key informants are presented in Table 15. Among selected organizations, 31.6% were in the wholesale and retail trade industry, 43.7% were in the manufacturing industry, and 24.7% were in the hotels and restaurants industry. In terms of the number of the employees, 38.0% had 49 or less employees, 13.9% had between 50 to 99 employees, 8.2% had between 100 to 199 employees, 2.5% had between 200 to 299 employees, and 37.3% had 300 or more employees. In terms of an HRD department, 38.6% had an HRD department in their organizations, and 61.4% did not have an HRD department in their organizations.

Table 15. Organizational Characteristics of the Key Informants

		Number of the Organizations	*% of the Organizations*
Industry	Wholesale and retail trade	50	31.6
	Manufacturing	69	43.7
	Hotels and restaurants	39	24.7
	Total	158	100.0
Number of the Employees	~ 49	60	38.0
	50 ~ 99	22	13.9
	100 ~ 199	13	8.2
	200 ~ 299	4	2.5
	300 ~	59	37.3
	Total	158	100.0
HRD Department	Have	61	38.6
	Have-not	97	61.4
	Total	158	100.0

The data for the individual characteristics of the key informants are presented in Table 16. Among selected key informants, 22.7% were 29 years of age or younger, 47.6% were between 30 to 39 years of age, 22.2% were between 40 to 49 years of age, and 4.4% were 50 years of age or older. In terms of the gender, 80.9% were male and 17.8% were female. In terms of the years of work experience at the present corporation, 3.6 % had less than 1 year of work experience, 40.0% had 1 to 4 years of work experience, 27.6% had 5 to 9 years of work experience, 20.9% had 10 to 19 years of work experience, and 3.1% had 20 years or more of work experience. In terms of the position ranking, 23.1% were staffs, 18.2% were assistant managers, 19.1% were

managers, 10.7% were deputy general managers, 8.9% were general managers, 5.8% were directors, and 11.1% were vice-presidents or presidents.

Table 16. Individual Characteristics of the Key Informants

		Number of the Key Informants	*% of the Key Informants*
Age	~ 29	51	22.7
	30 ~ 39	107	47.6
	40 ~ 49	50	22.2
	50 ~	10	4.4
	Missing	7	3.1
	Total	225	100.0
Gender	Male	182	80.9
	Female	40	17.8
	Missing	3	1.3
	Total	225	100.0
Years of Work Experience at the Present Corporation	Less than 1	8	3.6
	1 ~ 4	90	40.0
	5 ~ 9	62	27.6
	10 ~ 19	47	20.9
	20 or more	7	3.1
	Missing	11	4.9
	Total	225	100.0
Position Ranking	Staff	52	23.1
	Assistant manager	41	18.2
	Manager	43	19.1
	Deputy general manager	24	10.7
	General manager	20	8.9
	Director	13	5.8
	Others	25	11.1
	Missing	7	3.1
	Total	225	100.0

Factor Structure of the Survey Instrument

In this part, items that were used in the data analyses for answering the research questions of this study were determined. The Factor structure in each section of the survey instrument was extracted. Original individual responses, not the pooled organization-level indicator, were used to extract factor structures. Items in each section of the survey instrument were subjected to principal component analysis for identifying the distinct factors. An eigenvalue-one criterion was applied to keep or discard factors. Varimax rotation was performed to elicit the factor components.

In performing each factor analysis, the followings were checked as criteria:

1. If sample size is greater than 100
2. If the ratio of cases to variables is 5 to 1 or larger
3. If the correlation matrix for the variables contains 2 or more correlations of .30 or greater
4. If variables with measures of sampling adequacy (MSA) is .50 or higher
5. If the overall measure of sampling adequacy is .50 or higher
6. If the Barlett's test of sphericity is statistically significant
7. If the derived factors explain 50% or more of the variance in each of communalities
8. If complex structure occurs
9. If there is a factor with one variable

To check the validity of the factor analysis result, hold-out sample validation was introduced. Firstly, the sample was randomly split into two samples. For each sample,

factor analysis was performed with the final items included in the last iteration of the factor analysis with the original sample. Communalities and the factor loading pattern of each half were compared with the result of the full data set. The reliability was checked by Cronbach's alpha.

Factor Analysis of the Organizational Learning Style Section

To determine the items for the data analysis for organizational learning style, the following steps were introduced: [28]

1. Iteration 1: Twenty-one items in the survey instrument were analyzed via factor analysis. Three items, i.e. 7, 8 and 17, had MSA values less than .50. Among those three items, item 17 was removed because it had the smallest value.
2. Iteration 2: With 20 items, the factor analysis was performed. Two items, i.e. 7 and 8, had MSA values less than .50. Item 8 was removed because it had the smaller value.
3. Iteration 3: With 19 items, the factor analysis was rerun. All MSA values satisfied the .50 or higher criteria. Communalities were inspected to check if the factors were explaining less than 50% of the variance in each communality. Five items, i.e. 1, 3, 6, 7 and 16, had communalities less than .50. Among those five items, item 3 was removed because it had the smallest value.

[28] In all factor analyses of organizational learning style section, the sample size was greater than 100 and the ratio of cases to variables was higher than 5 to 1. The correlation matrix contained more than 2 correlations of .30 or greater. The overall MSA determined by Kaiser-Meyer-Olkin (KMO) measure was .50 or higher. The Barett's test of sphericity was statistically significant ($p = .000$).

4. Iteration 4: With 18 items, the factor analysis was conducted. Four items, i.e. 6, 7, 13 and 16, had communalities less than .50. Item 7 was removed because it had the smallest value.
5. Iteration 5: With 17 items, the factor analysis was performed. Two items, i.e. 1 and 19, had communalities less than .50. Item 1 was removed because it had the smaller value.
6. Iteration 6: With 16 items, the factor analysis was rerun. All communalities satisfied the .50 or higher criteria. To identify complex structure, items with .40 or higher factor loadings on more than 1 factor were inspected. Two items, i.e. 14 and 20, had .40 or higher factor loadings on two factors. Item 20 was removed because the difference between two factor loadings was smaller.
7. Iteration 7: With 15 items, the factor analysis was conducted. Two items, i.e. 16 and 19, had communalities less than .50. Item 16 was removed because it had the smaller value.
8. Iteration 8: With 14 items, the factor analysis was performed. Item 19 had communality less than .50. Therefore, item 19 was removed.
9. Iteration 9: With 13 items, the factor analysis was rerun. All communalities satisfied the .50 or higher criteria. Two items, i.e. 5 and 14, had .40 or higher factor loadings on two factors. Item 5 was removed because the difference between two factor loadings was smaller.

10. Iteration 10: With 12 items, the factor analysis was conducted. Three items, i.e. 2, 6 and 11, had communalities less than .50. Item 6 was removed because it had the smallest value.
11. Iteration 11: With 11 items, the factor analysis was performed. All communalities satisfied the .50 or higher criteria. Item 21 had .40 or higher factor loading on two factors. Therefore, item 21 was removed.
12. Iteration 12: With 10 items, the factor analysis was rerun. All communalities and the factor loadings satisfied the criteria.
13. To check if there were outliers, cases with factor scores greater than 3.0 were checked. One outlier was detected. Omitting this case, the factor analysis was conducted. The result of the factor analysis was compared to the result of Iteration 12. All communalities were .50 or higher. However, item 18 had .40 or higher factor loadings on two factors. It was determined to exclude item 18.
14. Iteration 13: With 9 items, factor analysis was performed with the original data set. All conditions were satisfied. The result of the final factor structure is presented in Table 17. Varimax rotation of the principal component analysis yielded a four-factor model. The 4 factors explained 67.9% of the total variance in the variables that were included on the factors. The first factor, which was named "Learning Content," accounted for 19.1% of the variance and was comprised of items 2, 9 and 13. The second factor, which was named "Dissemination Mode," accounted for 16.6% of the variance and was comprised of items 4 and 11. The third factor, which was named "Learning Scope,"

accounted for 16.4% of the variance and was comprised of items 10 and 12. The last factor, which was named "Knowledge Source," accounted for 15.8% of the variance and was comprised of item 14 and 15.

Table 17. Varimax Rotated Factor Structure of the Organizational Learning Style Section

Item Number	*Factor 1*	*Factor 2*	*Factor 3*	*Factor 4*	*Communalities*
9	.81				.70
13	.75	—	—	—	.60
2	.63				.52
4	—	.81	—	—	.69
11		.79			.63
10	—	—	.82	—	.70
12			.80		.69
15	—	—	—	.87	.84
14				.77	.76
Eigenvalue	1.72	1.50	1.48	1.42	
Percentage of variance	19.1	16.6	16.4	15.8	

Communalities and the factor loading pattern of the hold-out sample were the same as the result obtained with the full data set. Therefore, it can be said that the result of the factor analysis in Table 17 is valid. To check the reliability of the factor analysis, Cronbach's alpha was calculated. Cronbach's alpha value for each factor was .78, .72, .77 and .70, respectively.

The new structures of learning orientations and relevant item numbers in the survey instrument are summarized in Table 18. This new structure of the learning orientations was different from the original learning orientations by Nevis et al. (1995). "Knowledge Source," "Dissemination Mode," and "Learning Scope" were constant.

However, new "Learning Scope" contained one item from the original "Knowledge Reserve."[29] "Content—process Focus" and "Value—chain Focus" were amalgamated and a new orientation, i.e. "Learning Content," was produced.[30] "Learning Focus" was not included in this study.

Table 18. New Structures of Learning Orientations

Learning Orientations	*Definition*	*Dimension*	*Item No.*
Knowledge source	Preference for developing knowledge internally as compared to preference for acquiring knowledge developed externally	Internal—External	14, 15
Learning content	Emphasis on learning investments in production activities versus sales or service activities	Production—Delivery	2, 9, 13
Dissemination mode	Knowledge sharing in formal, prescribed methods as compared to knowledge sharing through informal methods, such as role-modeling and casual interaction	Formal—Informal	4, 11
Learning scope	Preference for knowledge related to the improvement of existing products, services, or capabilities as compared to preference for knowledge related to the development of new ones	Incremental—Transformative	10, 12

[29] An incremental change rather than a transformative change can be preferred in an organization, where it is believed that knowledge cannot be always made explicit. In that kind of organization, it can be believed that an essential knowledge is lacked in the organization because the knowledge is not expressed. The future is uncertain and the fear of failure can inhibit the organization from taking a transformative change. On the other hand, a transformative change can be preferred in an organization, where it is believed that knowledge can be always made explicit. All necessary knowledge can be acquired and the future is clear. A competitive position cannot be acquired if the organization follows incremental change path.

[30] It's easy to discover that "Content—process Focus" and "Value—chain Focus" contain similar concept.

"Knowledge Source" has internal—external dimension and is determined by the preference for developing knowledge internally as compared to preference for acquiring knowledge developed externally with two items, i.e. 14 and 15. "Learning Content" has production—delivery dimension and determined by emphasis on learning investments in production activities versus sales or service activities with three items, i.e. 2, 9 and 13. "Dissemination Mode" has formal—informal dimension and is determined by knowledge sharing in formal methods as compared to informal methods with two items, i.e. 4 and 11. "Learning Scope" has incremental—transformative dimension and is determined by preference for knowledge related to the improvement of existing products, services, or capabilities as compared to preference for knowledge related to the development of new ones with two items, i.e. 10 and 12.

Factor Analysis of the Organizational Culture Section

To determine the items for the data analysis for the organizational culture, the following steps were introduced: [31]

1. Iteration 1: Twenty items in the survey instrument were analyzed via factor analysis. All MSA values were .50 or higher. Five items, i.e. 7, 6, 15, 17 and 19, had communalities less than .50. Item 3 was removed because it had the smallest value.

[31] In all factor analyses of organizational culture section, the sample size was greater than 100 and the ratio of cases to variables was higher than 5 to 1. The correlation matrix contained more than 2 correlations of .30 or greater. The overall MSA determined by Kaiser-Meyer-Olkin (KMO) measure was .50 or higher. The Barett's test of sphericity was statistically significant (p = .000).

2. Iteration 2: With 19 items, the factor analysis was performed. Three items, i.e. 6, 12 and 19, had communalities less than .50. Item 6 was removed because it had the smallest value.
3. Iteration 3: With 18 items, the factor analysis was rerun. Three items, i.e. 12, 15 and 19, had communalities less than .50. Item 12 was removed because it had the smallest value.
4. Iteration 4: With 17 items, the factor analysis was conducted. Two items, i.e. 15 and 19, had communalities less than .50. Item 19 was removed because it had the smaller value.
5. Iteration 5: With 16 items, the factor analysis was performed. Item 15 had communality less than .50. Therefore, item 15 was removed.
6. Iteration 6: With 15 items, the factor analysis was rerun. All communalities satisfied the .50 or higher criteria. To identify complex structure, items with .40 or higher factor loadings on more than 1 factor were inspected. Two items, i.e. 9 and 11, had .40 or higher factor loadings on two factors. Item 11 was removed because the difference between two factor loadings was smaller.
7. Iteration 7: With 14 items, the factor analysis was conducted. Item 16 had a MSA value less than .50. Therefore, item 16 was removed.
8. Iteration 8: With 13 items, the factor analysis was performed. Item 14 had a MSA value less than .50. Therefore, item 14 was removed.

9. Iteration 9: With 12 items, the factor analysis was rerun. All MSA values and all communalities satisfied the .50 or higher criteria. Item 7 had .40 or higher factor loadings on two factors. Therefore, item 7 was removed.
10. Iteration 10: With 11 items, the factor analysis was conducted. Item 18 had a MSA value less than .50. Therefore, item 18 was removed.
11. Iteration 11: With 10 items, the factor analysis was performed. All MSA values satisfied the .50 or higher criteria. Two items, i.e. 4 and 13, had communalities less than .50. Item 4 was removed because it had the smaller value.
12. Iteration 12: With 9 items, the factor analysis was rerun. All communalities and the factor loadings satisfied the criteria.
13. To check if there were outliers, cases with factor scores greater than 3.0 were checked. No outlier was detected. Therefore, the result of Iteration 12 was determined as the final factor analysis. The result of the final factor structure is presented in Table 19. Varimax rotation of the principal component analysis yielded a three-factor model. The 3 factors explained 62.8% of the total variance in the variables that were included on the factors. The first factor, which was named “Participative”, accounted for 26.1% of the variance and was comprised of items 1, 2, 5 and 8. The second factor, which was named “Hierarchical”, accounted for 19.2% of the variance and was comprised of items 9, 13 and 17. The important point is that the factor loading of item 9 had negative value. The third factor, which was named “Risk-taking”, accounted for 17.5% of the variance and was comprised of items 10 and 20.

Table 19. Varimax Rotated Factor Structure of the Organizational Culture Section

Item numbers	*Factor 1*	*Factor 2*	*Factor 3*	*Communalities*
1	.79			.65
5	.71			.55
8	.71			.60
2	.69			.57
17		.80		.59
13		.77		.71
9		− .58		.61
20			.83	.66
10			.82	.72
Eigenvalue	2.35	1.73	1.58	
Percentage of variance	26.1	19.2	17.5	

Communalities and the factor loading pattern of the hold-out sample were the same as the result obtained with the full data set. Therefore, it can be said that the result of the factor analysis in Table 19 is valid. To check the reliability of the factor analysis, Cronbach's alpha was calculated. Cronbach's alpha value for each factor was .76, .73 and 71, respectively.

The new structures of organizational culture and relevant item numbers in the survey instrument are summarized in Table 20. This new structure of the organizational culture was different from that obtained by Cameron and Ettington (1988). Three factors identified in Table 19 were named "Participative," "Hierarchical," and "Risk-taking," respectively. The characteristics of the "Participative" culture are concern for the members, participative decision making, teamwork-based and developmental and participative aspect of organizational culture is determined by four items, i.e. 1, 2, 5 and 8. The characteristics of the "Hierarchical" culture are commanding, power-oriented and

controlling and hierarchical aspect of organizational culture is determined by three items, i.e. 9, 13 and 17. The characteristics of the "Risk-taking" culture are adventurous, innovative and entrepreneurship and risk-taking aspect of organizational culture is determined by two items, i.e. 10 and 20.[32]

Table 20. New Structures of Organizational Culture

Organizational Culture	*Characteristics*	*Item Number*
Participative	Concern for its members, participative decision making, teamwork-based, and developmental	1, 2, 5, 8
Hierarchical	Commanding, power-oriented, and controlling	9, 13, 17
Risk-taking	Adventurous, innovative, and entrepreneurship	10, 20

Factor Analysis of the Roles of HRD Section

To determine the items for the data analysis for the role of HRD, the following steps were introduced: [33]

1. Iteration 1: Twenty items in the survey instrument were analyzed via factor analysis. All MSA values were .50 or higher. Three items, i.e. 3, 9 and 18, had communalities less than .50. Item 3 was removed because it had the smallest value.

[32] Generally speaking, it can be said that the participative culture is similar to the clan culture, the hierarchical culture is similar to the hierarchy culture, and the risk-taking culture is similar to the adhocracy culture.

[33] In all factor analyses of the roles of HRD section, the sample size was greater than 100 and the ratio of cases to variables was higher than 5 to 1. The correlation matrix contained more than 2 correlations of .30 or greater. The overall MSA determined by Kaiser-Meyer-Olkin (KMO) measure was .50 or higher. The Barett's test of sphericity was statistically significant ($p = .000$).

2. Iteration 2: With 19 items, the factor analysis was performed. Two items, i.e. 9 and 18, had communalities less than .50. Item 18 was removed because it had the smaller value.
3. Iteration 3: With 18 items, the factor analysis was rerun. All communalities satisfied the .50 or higher criteria. To identify complex structure, items with .40 or higher factor loadings on more than 1 factor were inspected. Six items, i.e. 4, 5, 7, 8, 10 and 14, had .40 or higher factor loadings on two factors. Item 8 was removed because the difference between two factor loadings was the smallest.
4. Iteration 4: With 17 items, the factor analysis was conducted. Three items, i.e. 5, 7 and 10, had .40 or higher factor loadings on more than one factor. Item 7 was removed because it had .40 or higher factor loadings on three factors.
5. Iteration 5: With 16 items, the factor analysis was performed. Three items, i.e. 4, 8 and 20, had communalities less than .40. Item 4 was removed because it had the smallest value.
6. Iteration 6: With 15 items, the factor analysis was rerun. Two items, i.e. 8 and 20, had communalities less than .40. Item 20 was removed because it had the smaller value.
7. Iteration 7: With 14 items, the factor analysis was conducted. Item 8 had communality less than .40. Therefore, item 8 was removed.
8. Iteration 8: With 13 items, the factor analysis was performed. All communalities satisfied the .50 or higher criteria. Two items, i.e. 10 and 15, had .40 or higher

factor loadings on two factors. Item 15 was removed because the difference between two factor loadings was smaller.

9. Iteration 9: With 12 items, the factor analysis was rerun. Two items, i.e. 9 and 10, had communalities less than .50. Item 9 was removed because it had the smaller value.
10. Iteration 10: With 11 items, the factor analysis was conducted. Item 10 had communality less than .50. Therefore, item 10 was removed.
11. Iteration 11: With 10 items, the factor analysis was performed. Item 19 had communality less than .50. Therefore, item 19 was removed.
12. Iteration 12: With 9 items, the factor analysis was rerun. All communalities and the factor loadings satisfied the criteria.
13. To check if there were outliers, cases with factor scores greater than 3.0 were checked. Outliers were detected. Omitting these cases, the factor analysis was conducted. The result of the factor analysis was compared to the result of Iteration 12. The factor loading patterns were the same. However, item 5 had communality less than .50. Therefore, item 5 was removed.
14. Iteration 13: With 8 items, the factor analysis was performed. All conditions were satisfied. The result of the final factor structure is presented in Table 21. Varimax rotation of the principal component analysis yielded a three-factor model. The 3 factors explained 67.9% of the total variance in the variables that were included on the factors. The first factor, which was named the “Strategic Infrastructure Designer” role of HRD, accounted for 24.3% of the variance and

was comprised of items 6, 11 and 12. The second factor, which was named the "Operational Effectiveness Developer" role of HRD, accounted for 23.2% of the variance and was comprised of items 4 and 11. The third factor, which was named the "Organizational Culture Changer" role of HRD, accounted for 19.2% of the variance and was comprised of items 10 and 12.

Table 21. Varimax Rotated Factor Structure of the Roles of HRD Section

Item Numbers	*Factor 1*	*Factor 2*	*Factor 3*	*Communalities*
12	.79			.79
6	.78	–	–	.73
11	.77			.61
13		.86		.69
14	–	.77	–	.64
16		.62		.75
1	–	–	.89	.62
2			.81	.51
Eigenvalue	1.94	1.86	1.54	
Percentage of variance	24.3	23.2	19.2	

Communalities and the factor loading pattern of the hold-out sample were the same as the result obtained with the full data set. Therefore, it can be said that the result of the factor analysis in Table 21 is valid. To check the reliability of the factor analysis, Cronbach's alpha was calculated. Cronbach's alpha value for each factor was .82, .77 and .79, respectively.

The new structures of the roles of HRD and relevant item numbers in the survey instrument are summarized in Table 22. This new structure of the roles of HRD was

different from a multiple-role model for HRD suggested by the researcher[34] Three factors identified in Table 21 were named the "Strategic Infrastructure Designer," the "Operational Effectiveness Developer," and the "Organizational Culture Changer," respectively. The roles of HRD as a "Strategic Infrastructure Designer" is designing organizational infrastructure for organizational change based on strategic issues and determined by three items, i.e. 6, 11 and 12. The roles of HRD as an "Operational Effectiveness Developer" is developing processes and/or programs to improve operational efficacy based on the result of monitoring administrative process and determined by three items, i.e. 13, 14 and 16. The roles of HRD as an "Organizational Culture Changer" is shaping culture change for renewal and transformation and business goal accomplishment and determined by two items, i.e. 1 and 2.

Table 22. New Structures of the Roles of HRD

Metaphor	*Roles of HRD*	*Item Numbers*
Strategic infrastructure designer	Designing organizational infrastructure for organizational change based on strategic issues	6, 11, 12
Operational effectiveness developer	Developing processes and/or programs to improve operational efficacy based on the result of monitoring administrative process	13, 14, 16
Organizational culture changer	Shaping culture change for renewal and transformation and business goal accomplishment	1, 2

[34] Only the "Organizational Designer" was similar to the "Operational Effectiveness Developer."

Organizational Learning Style

Research Question #1

What kinds of organizational learning styles exist in the selected corporations in the Republic of Korea?

The data collected in Section 1 of the survey instrument concerned organizational learning style. The respondents were asked to answer questions by checking a box that consisted of five choices between two alternatives: mostly—more—even—more—mostly. To perform a cluster analysis, mean scores of the four learning orientations identified by the factor analysis were calculated for each organization.

To discover organizational learning styles, k-means cluster analysis (a non-hierarchical cluster analysis) was performed.[35] Initially, the researcher set 2 as k, and increased k stepwise by 1 to determine the optimal k by an explorative method. There were no unique criteria to determine the number of the clusters. Among the criteria to determine the number of the clusters, the researcher used the permission of the reassignment of the individual cases, cluster membership, the number of the cases in each cluster, and the significant difference between cluster groups as criteria.[36] A four-

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[35] Unlike hierarchical agglomerative methods, which require the calculation and storage of an N × N matrix of similarities between cases, iterative partitioning methods (k-means cluster analysis in this study) work directly upon the raw data (Aldenderfer,& Blashfield, 1984). Therefore, k-means cluster analysis can offer the opportunity of handling distinctly larger data sets than hierarchical methods. Generally speaking, hierarchical methods are effective with less than 100 data, and non-hierarchical methods are effective with 100 or more data.

[36] Willebrand, Andersson, Kildal, and Ekselius(2002) repeated the grouping procedure until it permitted reassignment of individuals during analysis. Cumming, Hall, Harwood, and Gammage (2002) used the number of the participants in each cluster and the significant difference between cluster groups as criteria. Hammer, Howell, Bytzer, Horowitz, and Talley (2003) followed the following procedure:

- First, comparisons were made of cluster membership across increasingly complex cluster solutions. If the more complex solution seemed to systematically break a large cluster into

cluster solution was considered as the best solution. Until the 5-cluster solution, complex cluster solutions seemed to systematically break a larger cluster into sub-clusters. In the 6-cluster solution, however, the reassignment of the cases seemed not to be permitted. Only three cases out of 158 (1.9%) were reassigned to the different clusters. A cluster in the five-cluster solution had only 17 cases. Therefore, it was considered as lacking a reasonable number of the cases for further analysis. In the 4-cluster solution, the significant difference between cluster groups on four learning orientations ($F_{3, 154} = 70.4$ with $p = .00$ for Knowledge Source; $F_{3, 154} = 26.4$ with $p = .00$ for Learning Content; $F_{3, 154} = 50.1$ with $p = .00$ for Dissemination Mode; and $F_{3, 154} = 59.5$ with $p = .00$ for Learning Scope) were discovered. The number of the participants, means, and standard deviations in each cluster are presented in Table 23.

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substantive subclusters, the complex solution was adopted. However, if the more complex solution seemed to randomly allocate members of several clusters to a new cluster or clusters, the simpler solution was adopted.

- Second, the distance metric (Euclidean distance) method was used to judge whether a more complex solution improved within-cluster homogeneity. If the average distance metric was reduced with a more complex solution, the more complex solution was favored.
- Third, to preserve the reliability of within-cluster estimates, no cluster could be made up of less than 5% of the entire sample.

Table 23. Means and Standard Deviations of Learning Orientations by Cluster

Learning Orientations	*Cluster 1 (n = 32)*		*Cluster 2 (n = 44)*		*Cluster 3 (n = 54)*		*Cluster 4 (n = 28)*	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Knowledge source	1.93	.54	2.24	.68	3.33	.58	3.76	.62
Learning content	3.10	.79	2.34	.58	3.19	.73	3.77	.68
Dissemination mode	4.01	.69	2.37	.58	3.51	.65	3.77	.68
Learning scope	3.87	.50	3.21	.73	2.26	.51	3.57	.63

Note: KS values: 1 (mostly internal), 2 (more internal), 3 (even), 4 (more external), 5 (mostly external). LC values: 1 (mostly production), 2 (more production), 3 (even), 4 (more delivery), 5 (mostly delivery). DM values: 1 (mostly formal), 2 (more formal), 3 (even), 4 (more informal), 5 (mostly informal). LS values: 1 (mostly incremental), 2 (more incremental), 3 (even), 4 (more transformative), 5 (mostly transformative).

To test the statistical difference of the mean scores among cluster groups in Table 23, one-way ANOVA was introduced for each learning orientation. A summary of ANOVAs is presented in Table 24.

The assumption of homogeneity of variances in each ANOVA was satisfied by Levene statistic. The F-value for the Knowledge Source was 70.4, which was statistically significant ($p < .00$). Tukey's HSD was introduced as a post hoc test. The result of Tukey's HSD revealed that there were differences between the means of Cluster 1 and Cluster 3, Cluster 1 and Cluster 4, Cluster 2 and Cluster 3, Cluster 2 and Cluster 4, and Cluster 3 and Cluster 4. The F-value for the Learning Content was 26.4, which was statistically significant ($p < .00$). The result of Tukey's HSD revealed that there were differences between the means of Cluster 1 and Cluster 2, Cluster 1 and Cluster 4, Cluster 2 and Cluster 3, Cluster 2 and Cluster 4, and Cluster 3 and Cluster 4. The F-

value for the Dissemination Mode was 50.1, which was statistically significant ($p < .00$). The result of Tukey's HSD revealed that there were differences between the means of Cluster 1 and Cluster 2, Cluster 1 and Cluster 3, Cluster 2 and Cluster 3, and Cluster 2 and Cluster 4. The F-value for the Learning Scope was 59.5, which was statistically significant ($p < .00$). The result of Tukey's HSD revealed that there were differences between the means of Cluster 1 and Cluster 2, Cluster 1 and Cluster 3, Cluster 2 and Cluster 3, and Cluster 3 and Cluster 4.

Table 24. A Summary of ANOVAs of the Learning Orientation Mean Scores among Cluster Groups

								Tukey's HSD			
		SS	*df*	*M*	*F*	*p*		*1*	*2*	*3*	*4*
KS	SSB	78.9	3	26.3	70.4	.00	1	–		*	*
	SSW	57.5	154	.37			2		–	*	*
	SST	136.4	157				3	*	*	–	*
							4	*	*	*	–
LC	SSB	38.3	3	12.8	26.4	.00	1	–	*		*
	SSW	74.5	154	.48			2	*	–	*	*
	SST	112.7	157				3		*	–	*
							4	*	*	*	–
DM	SSB	62.6	3	20.9	50.1	.00	1	–	*	*	
	SSW	64.2	154	.42			2	*	–	*	*
	SST	126.8	157				3	*	*	–	
							4		*		–
LS	SSB	64.1	3	21.4	59.5	.00	1	–	*	*	
	SSW	55.3	154	.36			2	*	–	*	
	SST	119.4	157				3	*	*	–	*
							4			*	–

Note: KS (knowledge source), LC (learning content), DM (dissemination mode), LS (learning cope).

* $p < .05$.

The characteristics of each cluster of organizational learning style can be summarized as follows: [37]

- Cluster 1: 20.3% out of the total corporations were included in this cluster. Corporations in this cluster corresponded to a group preferring an internal knowledge source, an informal dissemination mode, and a transformative learning scope.
- Cluster 2: 27.8% out of the total corporations were included in this cluster. Corporations in this cluster corresponded to a group preferring an internal knowledge source, a production oriented learning content, and a formal dissemination mode.
- Cluster 3: 34.2% out of the total corporations were included in this cluster. Corporations in this cluster corresponded to a group preferring an informal dissemination mode and an incremental learning scope.
- Cluster 4: 17.7% out of the total corporations were included in this cluster. Corporations in this cluster corresponded to a group preferring an external knowledge source, a delivery oriented learning content, an informal dissemination mode, and a transformative learning scope.

To discover which learning orientations explained the characteristics of the clusters, canonical discriminant analysis was performed. The initial sample size before excluding outliers and influential cases was 158. With 4 independent variables, the ratio of cases to variables was 39.5 to 1, which satisfied both the minimum ratio of 5 cases for

[37] In interpreting the characteristics of each cluster, means of 2.50 or lower and 3.50 or higher criteria were introduced.

each independent variable and the preferred ratio of 20 to 1. The number of cases in the smallest group was 28, which is larger than the number of the independent variables, satisfying the minimum requirement. In addition, the number of cases in the smallest group satisfied the preferred minimum of 20 cases.

To test normality of the independent variables, skewness and kutosis were checked. All independent variables satisfied the criteria for a normal distribution because skewness and kutosis were between -1.0 and +1.0. To identify outliers, the value of "Squared Mahalanobis Distance to Centroid" in each case was checked. Two outliers were detected. Omitting the two cases, discriminant analysis was analyzed. The cross-validated accuracy rate without outliers was only 1.9% better than the cross-validated accuracy rate with outliers. Therefore, the discriminant analysis with all cases was selected for the interpretation.

A summary of canonical discriminant analysis is presented in Table 25. All Wilks' Lambda statistics were significant (for Function 1 through 3, Chi-sqaure = 379.5, p = .000; for Function 2 through 3, Chi-square = 209.4, p = .000; and for Function 3 Chi-square = 53.3, p = .000). Therefore, the interpretation of a solution using 3 discriminant functions was supported.

Table 25. A Summary of Canonical Discriminant Analysis by Clusters of Organizational Learning Style

	Function 1	*Function 2*	*Function 3*
Canonical correlation coefficient	.82	.80	.54
Eigenvalue	2.04	1.77	.42
% of variance	48.2	41.9	9.9
Standardized canonical discriminant function coefficients			
Knowledge source	.74	− .30	.52
Learning content	.49	.40	.13
Dissemination mode	.41	.55	− .65
Learning scope	− .12	.83	.58
Predictor loadings on functions			
Knowledge source	.75	− .28	.46
Learning content	.47	.21	− .01
Dissemination mode	.46	.46	− .65
Learning scope	− .27	.70	.59
Group centroids			
Cluster 1	− .77	2.13	− .64
Cluster 2	− 1.83	− .78	.48
Cluster 3	1.00	− 1.16	− .52
Cluster 4	1.84	1.01	.98

The canonical correlation coefficient for Function 1 was .82 and this function explained 48.2% of the total between group variance. The canonical correlation coefficient for Function 2 was .80 and this function explained 41.9% of the total between group variance. The canonical correlation coefficient for Function 3 was .54 and this function explained 9.9% of the total between group variance.

According to the group centroids, Function 1 separated Organizational Learning Style 1 or Organizational Learning Style 2 from Organizational Learning Style 3 or Organizational Learning Style 4. Function 2 separated Organizational Learning Style 1

or Organizational Learning Style 4 from Organizational Learning Style 2 or Organizational Learning Style 3. Function 3 separated Organizational Learning Style 1 or Organizational Learning Style 3 from Organizational Learning Style 2 or Organizational Learning Style 4.

Based on the predictor loadings on functions, the predictor variables strongly associated with Function 1 were Knowledge Source and Learning Content. The predictor variable strongly associated with Function 2 was Learning Scope and the predictor variable strongly associated with Function 3 was Dissemination Mode.

Based on the group centroids and the standard canonical discriminant function coefficients, four clusters of organizational learning style identified in this study can be explained in the following manner:

- Organizational Learning Style 1 can be explained by a positive correlation with Function 2.
- Organizational Learning Style 2 can be explained by a negative correlation with Function 1.
- Organizational Learning Style 3 can be explained by a positive correlation with Function 1 and a negative correlation with Function 2.
- Organizational Learning Style 4 can be explained by a positive correlation with Function 1, Function 2, and Function 3.

The last step of the cluster analysis is to present adequate evidence of the validity of the analysis. According to Aldenderfer and Blahfield (1984), there are five categories of the validation method such as the cophenetic correlation, significance tests on

variables used to create clusters, replication, significance tests on the independent variables, and the Monte Carlo procedure. In this study, discriminant analysis was performed, a method of significance tests on variables used to create clusters, because of the following reasons:

- The cophenetic correlation is appropriate only for the hierarchical agglomerative method of clustering.
- Replication involves the estimation of the degree of replicability of a cluster solution across a series of data sets. That means this technique needs different samples from the same population. However, a time-consuming endeavor is required to collect data from the extra samples.
- In significance tests on the independent variables, statistical tests comparing the clusters on variables not used to generate the cluster solution are performed. However, defining a set of relevant external criteria is a hard work, and, moreover, collecting relevant criterion data is expensive.
- To do the Monte Carlo procedures, a data set with general characteristics matching the overall characteristics of the original data but containing no clusters should be generated by using a random number generator. However, this approach has had relatively little use and is somewhat complicated.

To determine if the assumption of homogeneity of variance is satisfied, the result of Box's test of equality of covariance matrices was checked. Box's M statistic had a value of 47.86 with a probability of .035. The null hypothesis was rejected and the assumption of homogeneity of variance was not satisfied. Therefore, the discriminant

analysis was performed again, specifying separate-groups covariance matrices for classification. The classification using separate covariance matrices were more accurate by only 1.9% and it was determined that the result of within groups covariance was reported.

The classification results of discriminant analysis are presented in Table 26.

Table 26. Classification Results of Organizational Learning Styles by Discriminant Analysis

		Cluster Group	*Predicted Group Membership*				*Total*
			1	*2*	*3*	*4*	
Original	Count	1	32	0	0	0	32
		2	1	41	2	0	44
		3	0	0	54	0	54
		4	1	0	4	23	28
	%	1	100.0	.0	.0	.0	100.0
		2	2.3	93.2	4.5	.0	100.0
		3	.0	.0	100.0	.0	100.0
		4	3.6	.0	14.3	82.1	100.0
Cross-validated	Count	1	32	0	0	0	32
		2	1	41	2	0	44
		3	0	0	54	0	54
		4	1	0	5	22	28
	%	1	100.0	.0	.0	.0	100.0
		2	2.3	93.2	4.5	.0	100.0
		3	.0	.0	100.0	.0	100.0
		4	2.6	.0	17.9	78.6	100.0

Note: 94.9% of original grouped cases and 94.3% of cross-validated grouped cases were correctly classified.

Totally, 94.9% of original grouped cases were correctly classified. The proportional by chance accuracy rate was computed on the number of cases in each

group. In this case, the proportional by chance accuracy rate were .267 ($.203^2$ + $.278^2$ + $.342^2$ + $.177^2$). A general benchmark of the usefulness is a 25% improvement over the rate of accuracy by chance alone. Therefore, the proportional by chance accuracy criteria was 33.4% (1.25 × 26.7%). The cross-validated accuracy rate computed by SPSS was 94.3%, which was greater than 33.4%. The criteria for classification accuracy were satisfied in this analysis.

Factors of Organizational Learning Styles

Research Question #2

What are the organizational factors that differentiate the organizations with different organizational learning styles in the selected corporations in the Republic of Korea?

Three factors were considered as the independent variables in this part: organizational culture; industry classification; and the size of an organization. The data collected in Section 2 of the survey instrument concerned organizational culture. The respondents utilized a five point Likert scale to rate their organizational culture. A rank of 1 indicated "disagree strongly," 2 indicated "disagree somewhat," 3 indicated "no opinion," 4 indicated "agree somewhat," and a rank of 5 indicated "agree strongly." To perform a cluster analysis, mean scores of the three factors of organizational culture were calculated for each organization. Item 9 was recorded because it had a negative factor loading.[38]

[38] Original rank of 1, 2, 3, 4, and 5 was recorded with 5, 4, 3, 2, and 1, respectively.

To identify the organizational culture type, k-means cluster analysis was performed with the same method used in identifying organizational learning style.[39] A three-cluster solution was considered as the best solution. Until the 5-cluster solution, complex cluster solutions seemed to systematically break a larger cluster into sub-clusters. In the 6-cluster solution, however, the reassignment of the individuals was not systematical. A cluster divided into four clusters with the small number of cases and a cluster had less than 10 cases in it. A cluster in the four- and the five-cluster solution didn't have a reasonable number of the cases for further analysis. In the 3-cluster solution, the significant difference between cluster groups on the three organizational culture factors ($F_{2, 155} = 119.9$ with $p = .00$ for Participative; $F_{2, 155} = 91.2$ with $p = .00$ for Hierarchical; and $F_{2, 155} = 55.3$ with $p = .00$ for Risk-taking) were discovered. The number of the cases, means, and standard deviations in each cluster are presented in Table 27.

[39] Organizational culture type can be determined by using an alternative method. A corporation has three values for organizational culture, i.e. "Participative," "Hierarchical," and "Risk-taking." Among these three culture values, the highest or the lowest one can be used as the strongest type of organizational culture. However, even though several corporations are categorized in the same types of culture, the organizational culture of one corporation with 3.0 value and another corporation with 4.5 value have different characteristic. Cluster analysis classifies the cases with similar properties. Therefore, corporations in the same cluster can be thought of having similar organizational culture. The characteristics of each cluster can explain the organizational culture type.

Table 27. Means and Standard Deviations of Organizational Culture by Cluster

Organizational Culture	*Cluster 1 (n = 25)*		*Cluster 2 (n = 68)*		*Cluster 3 (n=65)*	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*
Participative	2.33	.54	2.98	.55	3.96	.41
Hierarchical	3.88	.60	3.28	.54	2.31	.54
Risk-taking	1.96	.55	3.28	.59	3.51	.70

Note: 1 (disagree strongly) –2 (disagree somewhat) – 3 (no opinion) – 4 (agree somewhat) – 5 (agree strongly).

To test the statistical difference of the mean scores of organizational culture among cluster groups in Table 27, one-way ANOVA was introduced for each organizational culture factor. A summary of ANOVAs is presented in Table 28.

Table 28. A Summary of ANOVAs of Organizational Culture Mean Scores among Cluster Groups

							Tukey's HSD		
		SS	*df*	*M*	*F*	*p*	*1*	*2*	*3*
Participative	SSB	58.0	2	29.0	119.9	.00	1	–	*	*
	SSW	37.5	155	.24			2	*	–	*
	SST	95.6	157				3	*	*	–
Hierarchical	SSB	55.5	2	27.7	91.2	.00	1	–	*	*
	SSW	47.2	155	.30			2	*	–	*
	SST	102.6	157				3	*	*	–
Risk-taking	SSB	44.5	2	22.3	55.3	.00	1	–	*	*
	SSW	62.4	155	.40			2	*	–	
	SST	106.9	157				3	*		–

Note: * $p < .05$.

The assumption of homogeneity of variances in each ANOVA was satisfied by Levene statistic. All F values were statistically significant ($p = .00$). Tukey's HSD was

introduced as a post hoc test. The result of Tukey's HSD revealed that there were differences between the means of all cluster groups except Cluster 2 and Cluster 3 in Risk-taking.

The characteristics of each cluster of organizational culture can be summarized as follows: [40]

- Cluster 1: 15.8% out of the total corporations were included in this cluster. Corporations in this cluster corresponded to a non-participative, a hierarchical, and a stability-seeking group.
- Cluster 2: 43.0% out of the total corporations were included in this cluster. Corporations in this cluster corresponded to a moderate group. There was not a big difference among three organizational culture values.
- Cluster 3: 41.1% out of the total corporations were included in this cluster. Corporations in this cluster corresponded to a participative, an autonomous, and a risk-taking group.

Cluster 1 and Cluster 3 were groups who had opposite characteristics of organizational culture. Cluster 2 was located approximately in the midpoint of Cluster 1 and Cluster 3.

To discover which organizational culture factors explained the characteristics of the clusters, canonical discriminant analysis was performed. To test normality of the independent variables, skewness and kutosis were checked. All independent variables satisfied the criteria for a normal distribution because skewness and kutosis were

[40] In interpreting the characteristics of each cluster, means of 2.50 or lower and 3.50 or higher criteria were introduced.

between -1.0 and +1.0. To identify outliers, the value of "Squared Mahalanobis Distance to Centroid" in each case was checked. Two outliers were detected. Omitting the two cases, discriminant analysis was performed. Since discriminant analysis without outliers was less accurate in classifying cases than discriminant analysis with outliers, the discriminant analysis with all cases was selected for the interpretation.

A summary of the canonical discriminant analysis is presented in Table 29. There were 158 valid cases and 3 independent variables. The ratio of cases to the independent variables was 52.7, which satisfied the minimum requirement of 5 to 1 and the preferred ratio of 20 to 1. The number of cases in the smallest group was 25, which is larger than the number of the independent variables, satisfying the minimum requirement, and the preferred minimum of 20 cases.

All Wilks' Lambda statistics were significant (for Function 1 through 2, Chi-sqaure = 260.7, p = .000; and for Function 2, Chi-square = 29.3, p = .000). Therefore, the interpretation of a solution using 2 discriminant functions was supported.

The canonical correlation coefficient for Function 1 was .88 and this function explained 94.3% of the total between group variance. The canonical correlation coefficient for Function 2 was .42 and this function explained 5.7% of the total between group variance.

Table 29. A Summary of Canonical Discriminant Analysis by Clusters of Organizational Culture

	Function 1	*Function 2*
Canonical correlation coefficient	.88	.42
Eigenvalue	3.49	.21
% of variance	94.3	5.7
Standardized canonical discriminant function coefficients		
Participative	.69	− .32
Hierarchical	− .65	.25
Risk-taking	.44	.90
Predictor loadings on functions		
Participative	.66	− .30
Hierarchical	− .58	.31
Risk-taking	.39	.92
Group centroids		
Cluster 1	− 3.22	− .69
Cluster 2	− .69	.49
Cluster 3	1.96	− .25

According to the group centroids, Function 1 separated Organizational Culture Type 1 or Organizational Culture Type 2 from Organizational Culture Type 3. Function 2 separated Organizational Culture Type 1 from Organizational Culture Type 2.

Based on the predictor loadings on functions, the predictor variables strongly associated with Function 1 were Participative and Hierarchical. The predictor variables strongly associated with Function 2 were Risk-taking.

Based on the group centroids and the standard canonical discriminant function coefficients, three clusters of organizational culture identified in this study can be explained in the following manner:

- Organizational Culture Type 1 can be explained by a negative correlation with Function 1.
- Organizational Culture Type 2 can be explained by a negative correlation with Function 1 and a positive correlation with Function 2. However, the degree of correlations with each function is moderate.
- Organizational Culture Type 3 can be explained by a positive correlation with Function 1.

To determine if the assumption of homogeneity of variance is satisfied, the result of Box's test of equality of covariance matrices was checked. Box's M statistic had a value of 22.7 with a probability of .039. The null hypothesis was rejected and the assumption of homogeneity of variance was not satisfied. Therefore, the discriminant analysis was performed again, specifying separate-groups covariance matrices for classification. The classification using separate covariance matrices were same and it was determined that the result of within groups covariance was reported.

The classification results of discriminant analysis are presented in Table 30. Totally, 94.9% of original grouped cases were correctly classified. The proportional by chance accuracy rate was computed on the number of cases in each group. In this case, the proportional by chance accuracy rate were .379 ($.158^2 + .430^2 + .411^2$). A general benchmark of the usefulness is a 25% improvement over the rate of accuracy by chance alone. Therefore, the proportional by chance accuracy criteria was 47.4% ($1.25 \times 37.9\%$). The cross-validated accuracy rate computed by SPSS was 94.9%, which was greater than 47.4%. The criteria for classification accuracy were satisfied in this analysis.

Table 30. Classification Result of Organizational Culture Type by Discriminant Analysis

		Cluster Group	*Predicted Group Membership*			*Total*
			1	*2*	*3*	
Original	Count	1	22	3	0	25
		2	1	65	2	68
		3	0	2	63	65
	%	1	88.0	12.0	.0	100.0
		2	1.5	95.6	2.9	100.0
		3	.0	3.1	96.9	100.0
Cross-validated	Count	1	22	3	0	25
		2	1	65	2	68
		3	0	2	63	65
	%	1	88.0	12.0	.0	100.0
		2	1.5	95.6	2.9	100.0
		3	.0	3.1	96.9	100.0

Note: 94.9% of original grouped cases and 94.9% of cross-validated grouped cases were correctly classified.

Each of the clusters classified with organizational culture were considered as organizational culture type. Therefore, there were three levels in the organizational culture variable. The industry classification variable had three levels, i.e. wholesales and retail trade, manufacturing, and hotels and restaurants. The organizational size variable was determined by the number of the employees. Two levels were in the organizational size variable. One level was for number of employees of 299 or lower and the other was for 300 or higher.[41]

[41] The Ministry of Legislation (MOLEG) in the Republic of Korea promulgated the acts that can be used in determining the size of an organization. However, the criteria are different depending on the industry area. One general rule is the 300 or higher criterion. One of the purposes of the Research Question 2 is to identify whether the size of an organization is a factor determining organizational learning style, not to

To identify the factors in organizational learning styles, preliminary data exploration was performed via two-way contingency table analysis. The result of two-way contingency table analysis between organizational culture type and organizational learning style is presented in Table 31. Organizational culture type and organizational learning style were not found to be statistically related, Pearson χ^2 (df = 6, n = 158) = 11.1, p = .085.

Table 31. Two-Way Contingency Table Analysis between Organizational Culture Type and Organizational Learning Style

			Organizational Learning Style				*Total*
			1	*2*	*3*	*4*	
Organizational Culture Type	*1*	Count	3	6	12	4	25
		Expected count	5.1	7.6	8.5	4.4	25.0
		% of count	12.0	24.0	48.0	16.0	100.0
	2	Count	11	18	29	10	68
		Expected count	13.8	18.9	23.2	12.1	68.0
		% of count	16.2	26.5	42.6	14.7	100.0
	3	Count	18	20	13	14	65
		Expected count	13.2	18.1	22.2	11.5	65.0
		% of count	27.7	30.8	20.0	21.5	100.0
	Total	Count	32	44	54	28	158
		Expected count	32.0	44.0	54.0	28.0	158.0
		% of count	20.3	27.8	34.2	17.7	100.0

Note: χ^2 = 11.1, df = 6, p = .085.

The result of two-way contingency table analysis between the industry classification and organizational learning style is presented in Table 32. Industry

describe the characteristic of organizational learning style in each-sized organization. So the researcher determined to follow the general criterion, i.e. 300 or higher, by the MOLEG of Korea.

classification and organizational learning style were not found to be significantly related, Pearson χ^2 (df = 6, n = 158) = 12.1, p = .060.

Table 32. Two-Way Contingency Table Analysis between Industry Classification and Organizational Learning Style

			Organizational Learning Style				
			1	*2*	*3*	*4*	*Total*
Industry	*Wholesales and retail trade*	Count	11	6	19	14	50
		Expected count	10.1	13.9	17.1	8.9	50.0
		% of count	22.0	12.0	38.0	28.0	100.0
	Manufacturing	Count	12	24	24	9	69
		Expected count	14.0	19.2	23.6	12.2	69.0
		% of count	17.4	34.8	34.8	13.0	100.0
	Hotels and restaurants	Count	9	14	11	5	39
		Expected count	7.9	10.9	13.3	6.9	39.0
		% of count	23.1	35.9	28.2	12.8	100.0
	Total	Count	32	44	54	28	158
		Expected count	32.0	44.0	54.0	28.0	158
		% of count	20.3	27.8	34.2	17.7	100.0

Note: χ^2 = 12.1, df = 6, p = .060.

The result of two-way contingency table analysis between the size of an organization and organizational learning style is presented in Table 33. The size of an organization and organizational learning style were found to be significantly related, Pearson χ^2 (df = 3, n = 158) = 8.13, p = .043.

Follow-up pair-wise comparisons were conducted to evaluate the differences among these proportions. The result of the follow-up pair-wise comparisons is presented in Table 34. The Bonferroni approach was used to control for Type I error at the .05 across all 6 comparisons (adjusted α = .05/6 = .0083). No one pair-wise difference was

significant. However, the pair-wise comparison of Organizational Learning Style 1 and Organizational Learning Style 2 and the pair-wise comparison of Organizational Learning Style 2 and Organizational Learning Style 3 could help to explain the relationship between organizational learning style and the size of an organization.

Table 33. Two-Way Contingency Table Analysis between the Size of an Organization and Organizational Learning Style

			Organizational Learning Style				*Total*
			1	*2*	*3*	*4*	
Size of the Organization	*299 or less*	Count	23	20	38	18	99
		Expected count	20.1	27.6	33.8	17.5	99.0
		% of count	23.2	20.2	38.4	18.2	100.0
	300 or more	Count	9	24	16	10	59
		Expected count	11.9	16.4	20.2	10.5	59.0
		% of count	15.3	40.7	27.1	16.9	100.0
	Total	Count	32	44	54	28	158
		Expected count	32.0	44.0	54.0	28.0	158.0
		% of count	20.3	27.8	34.2	17.7	100.0

Note: $\chi^2 = 8.13$, df = 3, p = .043.

Table 34. The Result for the Pair-wise Comparisons of the Size of an Organization and Organizational Learning Style

Comparison	*Pearson Chi-square*	*p-value*
OLS1 vs. OLS2	5.270	.022
OLS1 vs. OLS3	.022	.882
OLS1 vs. OLS4	.397	.528
OLS2 vs. OLS3	6.231	.013
OLS2 vs. OLS4	2.435	.119
OLS3 vs. OLS4	.315	.574

Note: OLS: Organizational learning style.

To identify the factors that differentiate the organizations with different organizational learning styles, multinomial logistic regression was performed. A summary of the result of multinomial logistic regression is presented in Table 35.

Table 35. A Summary of Multinomial Logistic Regression Analysis for Variables Predicting Organizational Learning Style (n = 158)

	OLS4 vs.									*Likelihood Ratio*
	OLS1			*OLS2*			*OLS3*			
Predictors	*B*	*SEB*	e^B	*B*	*SEB*	e^B	*B*	*SEB*	e^B	χ^2
Intercept	.52	.83		1.51	.76		-.66	.83		
Industry1	-.87	.70	.42	-1.92**	.73	.15	-.21	.67	.81	13.4*
Industry2	-.29	.73	.75	-.21	.67	.81	.49	.69	1.64	
OCT1	-.55	.86	.58	-.19	.78	.83	1.30	.72	3.67	14.1*
OCT2	-.20	.59	.82	.00	.57	1.00	1.24*	.55	3.47	
Size	.32	.59	1.37	-.68	.54	.51	.62	.53	1.86	8.8*

Note: For the total model, χ^2 (15) = 34.1, p = .003. The percentage of OLS1, OLS2, OLS3, and OLS4 was 20.3%, 27.8%, 34.2%, and 17.7%, respectively.

OLS: Organizational learning style; OCT: Organizational culture type.

*p < .05, **p < .01.

The minimum number of cases per independent variables is 10 according to Hosmer and Lemeshow (2000). In this study, 158 cases were used in the analysis and the number of the independent variables was three. The requirement of the sample size was satisfied. The p-value of the final model Chi-square (34.1) was .003, which is less than the level of significance of .05. Therefore, the existence of a relationship between the independent variables (industry classification, organizational culture type, and the size of an organization) and the dependent variable (organizational learning style) was

supported. To check for multicollinearity, standard errors in parameter estimates were inspected. None of the independent variables in this analysis had a standard error larger than 2.0. Multicollinearity was not detected.

According to the likelihood ratio tests, the existence of a relationship between industry classification and organizational learning style, a relationship between organizational culture type and organizational learning style, and a relationship between the size of an organization and organizational learning style was supported.

Because the relationship between each independent variable and the dependent variable was supported, Wald's tests in parameter estimates were inspected. Since the probability of the Wald's tests in two predictors, i.e. Industry1 in OLS2 and OCT2 in OLS3, were less than the level of significance of .05, the B coefficients for Industry 1 in OLS2 and for OCT2 in OLS3 were not equal to zero for this comparison.

The value of Exp (B) of Industry 1 in OLS2 was .15. Therefore, it can be said that the corporations in wholesale and retail trade (Industry 1) are less likely to be in the group of Organizational Learning Style 2 (OLS2) relative to the group of Organizational Learning Style 4 (OLS4) than are the corporations in hotels and restaurant (Industry3). Also it can be interpreted in different way. The corporations in wholesale and retail trade (Industry1) are 85.0% less likely to be in the group of Organizational Learning Style 2 (OLS2) relative to the groups of Organizational Learning Style 4 (OLS4) than are the corporations in hotels and restaurants (Industry 3) (.15 – 1.0 = - .85).

The value of Exp (B) of Organizational Culture Type 2 (OCT2) in OLS3 was 3.47. Therefore, it can be said that the corporations with Organizational Culture Type 2

(OCT2) are 3.47 times more likely to be in the group of Organizational Learning Style 3 (OLS3) relative to the groups of Organizational Learning Style 4 (OLS4) than are the corporations with Organizational Culture Type 3 (OCT3).

For evaluating the usefulness for the logistic model analyzed, the % of improvement over the rate of accuracy achievable by change alone was calculated. The proportional by chance accuracy rate was computed by calculating the proportion of cases for each group based on the number of cases in each group. In this case, the proportional by chance accuracy rate was .267 ($.203^2 + .278^2 + .342^2 + .177^2$). A general benchmark of the usefulness is a 25% improvement over the rate of accuracy by chance alone. Therefore, the proportional by chance accuracy criteria was 33.4% ($1.25 \times 26.7\%$). The classification accuracy rate was 44.3%, which was greater than 33.4%. The criterion for classification accuracy was satisfied in this analysis.

To check outliers and influential cases, the researcher performed three separate binary regressions, using case selection to compare organizational learning style group 1 to organizational learning style group 4, organizational learning style group 2 to organizational learning style group 4, and organizational learning style group 3 to organizational learning style group 4. In each binary regression, a standardized residual higher than .30 and a Cook's distance of 1.0 or less were checked. No outlier was detected.

Roles of HRD

Research Question #3

What are the roles of HRD to facilitate organizational learning within the organizations in each organizational learning style in the selected corporations in the Republic of Korea?

The data collected in Section 3 of the survey instrument concerned the roles of HRD. The respondents utilized a five point Likert scale to rate the roles of HRD in increasing the corporation's capacity to take effective actions, i.e. facilitating organizational learning. To help to understand the concept of HRD for the respondents who might not be familiar with the terminology of HRD, a definition of HRD was presented in the survey instrument. The definition presented in the instrument was as follow:

HRD means a learning system designed to enhance individual performance for the purpose of improving organizational efficiency. Representative forms of HRD consist of individual development, career development, and organizational development. Exemplary practices of HRD include training, action learning, problem solving, task analysis, process reengineering, culture survey, benchmarking, conflict resolution, cross-cultural team building, career development assessment, and scenario building.

A rank of 1 indicated "disagree strongly," 2 indicated "disagree somewhat," 3 indicated "no opinion," 4 indicated "agree somewhat," and a rank of 5 indicated "agree strongly." To identify the roles of HRD to facilitate organizational learning within the

organizations in each organizational learning style, mean scores of the three factors of the roles of HRD were calculated for each organization. The mean scores and the standard deviations of the roles of HRD in each organizational learning style are presented in Table 36.

Table 36. Means and Standard Deviations of the Roles of HRD by Organizational Learning Style

	OLS1 (n = 32)		*OLS2 (n = 44)*		*OLS3 (n = 54)*		*OLS4 (n = 28)*	
Roles of HRD	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Strategic infrastructure designer	3.53	.71	3.73	.60	3.73	.53	3.74	.47
Operational effectiveness developer	3.75	.69	3.65	.64	3.74	.67	3.54	.70
Organizational culture changer	4.37	.57	4.18	.62	4.11	.59	4.18	.55

Note: 1 (disagree strongly) –2 (disagree somewhat) – 3 (no opinion) – 4(agree somewhat) – 5 (agree strongly).

OLS: Organizational learning style.

All of the mean scores of the roles of HRD were greater than 3.50 and the pattern of the requirement in each group was similar. Therefore, the characteristics of the respondent corporations in terms of the roles of HRD can be summarized as follows:

- The key informants of the corporations selected for this study believed all three roles of HRD were necessary to facilitate their corporation's organizational learning.
- Among the three roles of HRD, the key informants of the corporations selected for this study rated the Organizational Culture Changer role the highest.

- The rating scores for the roles of HRD as a Strategic Infrastructure Designer and an Operational Effectiveness Developer were similar.

Consequently, the overall pattern of the roles of HRD to facilitate organizational learning can be summarized like the following: To facilitate organizational learning, the role of HRD as an Organizational Culture Changer is required the most highly, the roles of HRD as a Strategic Infrastructure Designer and a Operational Effectiveness Developer are required in a similar degree, and all roles of HRD are necessary.

Research Question #4

Are there differences in the roles of HRD to facilitate organizational learning among the organizations with different organizational learning styles?

A one-way between-groups MANOVA was performed to investigate the organizational learning style differences in the roles of HRD. The dependent variables were three roles of HRD, i.e. Strategic Infrastructure Designer, Operational Effectiveness Developer, and Organizational Culture Changer, and the independent variable was organizational learning style.

Before performing the analysis, preliminary assumptions were checked. Sample size was considered enough for the analysis. Univariate normality, univariate outliers, and multivariate outliers were checked by using the "Explore" function in SPSS. Multivariate normality was checked by using Mahalanobis distance. Linearity was checked by comparing scatter plots of split-half cases. Multicollinearity and singularity were checked by using correlation coefficients. Homogeneity of the variance-covariance

matrices was assessed by Box's M Test of Equality of Covariance Matrices. No serious violation was discovered.

A summary of the results of MANOVA is presented in Table 37. There was no statistically significant difference among the groups with different organizational learning styles: F (9, 370) = 1.82, p = .63; Wilks' Lambda = .90; Partial Eta Squared = .04. The null hypothesis that there is no difference in the requirement of the roles of HRD in each group of corporations with different organizational learning styles is held tenable.

Table 37. A Summary of MANOVA results of the Roles of HRD

Effect	*Wilks' Lambda*	*df*	*F*	*p*	*Eta Squared*
Organizational learning style	.90	(9, 370)	1.82	.07	.04

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Chapter V is composed of three sections: Summary; Conclusions; and Recommendations. A main stream of the previous four chapters is presented in sequence in the Summary section. Based on the findings from the analysis of data and within the limitations of this study, conclusions are presented in the Conclusions section. Based on the findings from the analysis of data, recommendations for practice and future research are presented in the Recommendations section.

Summary

In this summary section, a main idea of the previous four chapters is presented in sequence: Introduction; Review of literature; Methodology; and Analysis of data.

Introduction

In an increasingly complex and unpredictable business environment, it is clear that the core competency of the most effective organizations will be their capacity to learn. Therefore, organizational learning has been an important research topic in the field of management. However, there has been little agreement on what is organizational learning.

Organizational learning is an exciting and important topic for HRD because the roles of HRD should expand to become partners, not only supporters, in the transformation of the entire organization. However, there has been little empirical study

verifying the relationship between the roles of HRD and the concept of organizational learning.

The purpose of this study was germane to the corporations in the Republic of Korea. The first purpose of this study was to identify what organizational learning styles existed. Secondly, organizational factors that differentiate the organizations with different organizational learning styles were identified. Thirdly, the roles of HRD to facilitate organizational learning within the organizations in each organizational learning style were identified. Lastly, the differences in the roles of HRD to facilitate organizational learning among the organizations with different organizational learning styles were identified.

Review of Literature

The concept of organizational learning cannot be easily understood. Therefore, there have been long debates regarding organizational learning. Conceptual confusion of organizational learning could be classified in two categories: (1) confusion within the field of organizational learning; and (2) confusion with the concepts from other fields such as knowledge management and intellectual capital. One of the representative confusions within the field of organizational learning might be the controversy regarding what are the differences between organizational learning and learning organization.

Based on the review of many definitions of organizational learning, organizational learning in this dissertation was defined as the process by which an organization's capacity to take effective action is increased through knowledge acquisition, dissemination, and utilization by the collective group of people.

The idea of learning styles was originally developed to describe the characteristics of individual learning. If organizational learning exists, that means an organization can learn. Therefore, the idea of a learning style can be applied to the organizational level. Representative researchers of organizational learning styles include Shrivastava (1983), DiBella et al. (1996), Ribbens (1997), and Yeung et al. (1999).

Even though many articles regarding organizational learning have been published, there are only a few articles related to the factors of organizational learning or organizational learning style. Possible factors of organizational learning styles are large variations in industry characteristics, business strategy, business culture, technology, the size and age of an organization, the way an organization was founded, hiring practices, and environmental demands according to Nevis et al. (1995), Ribbens (1997) and Yeung et al. (1999). In this dissertation, the factors of organizational learning style were defined as organizational conditions that directly and/or indirectly contribute to the organizational learning style, including organizational culture, industry classification, and the size of an organization.

Even though there have been plentiful definitions of organizational culture, it's also a confusing concept. The easiest way to understand organizational culture is that culture is to the organization what personality is to the individual (Van der Post et al., 1997). Based on a literature review, organizational culture in this study was defined as a set of assumptions, beliefs, values, and norms shared by the members of an organization.

Types of organizational culture are determined by the dimensions of organizational culture. Representative types of organizational culture are clan, hierarchy, adhocracy, and market types of culture proposed by Cameron and Ettington (1988).

Based on the two categories of HRD definitions, i.e. HRD as a practice and HRD as both a discipline and a practice, and three approaches to HRD, i.e. narrow learning approach, broad learning approach and broad performance approach, HRD in this study was defined as a component of an organizational system to facilitate organizational learning.

Originally, the concept of a role was developed to describe individual behaviors. However, the concept of a role can be applied to an organization. The concept of the roles of HRD in this study were defined as the total patterns of occupational behaviors in HRD functions as perceived by the informants who are responsible for HR functions. Representative scholars who studied the roles of HRD include McLagan (1989; 1996), and Watkins (1989b; 2000). Studies regarding the roles of HRD in facilitating organizational learning include Dixon (1992) and Tjepkema et al. (2002).

Methodology

The population for this study was the key informants at the corporations in three industry areas, i.e. wholesale and retail trade, manufacturing, and hotels and restaurants, in the Republic of Korea during July 2003 and December 2003. The list of corporations in the *2002 annual corporation reports* (Maeil Business Newspaper, 2002) was used for the sampling. Totally 240 corporations were sampled.

The survey instrument was developed by the researcher based on previous studies (DiBella, 2001; Sokugawa, 1996; Ulrich, 1997). The instrument was divided into four sections: organizational learning style; organizational culture; roles of HRD; and demographic information. A five-point Likert-type scale was used except for the demographic information section. The validity of the instrument was confirmed via content validity. The instrument was translated to the Korean language by the method suggested by Vallerand (1989). The instrument was field-tested on 20 corporations selected from the targeted population.

The researcher contacted the president or the vice president of the HR division at the selected corporations, explained the purpose and the benefit of the study, and requested participation in the study. If no HR division existed, the researcher contacted the president of corporation. The contact information of three key informants, i.e. HR staffs, HR managers and/or HR directors, was requested. In the case that three key informants were not available, the contact information of one or two key informants was requested. The survey instrument accompanying a cover letter as well as detailed instructions was delivered directly to 353 key informants. A follow-up letter and a second survey instrument were distributed to the key informants failing to respond within two weeks. Consent to participate in this study was assumed by the return of the completed instrument. The number of the key informants who returned the survey instrument was 237 at 166 corporations for a return rate of 67.1%.

First of all, the data from the key informants were explored to confirm that all respondents answered to the instrument honestly. Through this exploration, the data from 12 key informants at 8 corporations were excluded from the final data analysis.

The results of the study were reported using quantitative techniques as outlined in Gall, Borg, and Gall (1996). The data collected with the survey instrument were analyzed with SPSS windows version 11.0. The aggregation approach was used to pool the responses of two or three key informants to create organization-level indicators via simple unweighted average. In case of only one key informant, the response of the key informant was treated as the organization-level indicator.

Descriptive statistics such as frequency, percentage, mean, and standard deviation and inferential statistics such as one-way ANOVA, MANOVA, two-way contingency table analysis, multinomial logistic regression, cluster analysis, and discriminant analysis were performed. In each statistical analysis, a p-value of .05 was considered to indicate statistical significance.

Analysis of Data

Among selected organizations, 31.6% were in the wholesale and retail trade industry, 43.7% were in the manufacturing industry, and 24.7% were in the hotels and restaurants industry. In terms of the number of the employees, 38.0% had 49 or less employees, 13.9% had between 50 to 99 employees, 8.2% had between 100 to 199 employees, 2.5% had between 200 to 299 employees, and 37.3% had 300 or more employees. In terms of an HRD department, 38.6% had an HRD department in their organizations, and 61.4% did not have an HRD department in their organizations.

Before doing the data analysis for the research questions, factor analyses of each section of the survey instrument were performed. Items in each section of the survey instrument were subjected to principal component analysis for identifying the distinct factors. An eigenvalue-one criterion was applied to keep or discard factors. Varimax rotation was performed to elicit the factor components. The factor analyses yielded a four-factor model with 9 items in the organizational learning style section, a three-factor model with 9 items in the organizational culture section, and a three-factor model with 8 items in the roles of HRD section.

Four types of organizational learning styles were identified through a cluster analysis. Of the total corporations, 20.3% exhibited Organizational Leaning Style 1. Corporations with a type 1 organizational learning style correspond to a group preferring an internal knowledge source, an informal dissemination mode, and a transformative learning scope. Of the total corporations, 27.8% displayed Organizational Learning Style 2. Corporations with a type 2 organizational learning style correspond to a group preferring an internal knowledge source, a production oriented learning content, and a formal dissemination mode. Of the total corporations, 34.2% were classified as Organizational Learning Style 3. Corporations with a type 3 organizational learning style correspond to a group preferring an informal dissemination mode and an incremental learning scope. Organizational Learning Style 4 constituted 17.7% of the total corporations. Corporations with a type 4 organizational learning style correspond to a group preferring an external knowledge source, a delivery oriented learning content, an informal dissemination mode, and a transformative learning scope.

Three types of organizational culture were identified via cluster analysis. Of the total corporations, 15.8% exhibited Organizational Culture Type 1. Corporations with a type 1 organizational culture correspond to a group with a non-participative, a hierarchical, and a stability-seeking group of corporations. Of the total corporations, 43.0% displayed Organizational Culture Type 2. Corporations with a type 2 organizational culture correspond to a moderate group of corporations, which means no characteristics in three culture values (Participative, Hierarchical, and Risk-taking) were discovered in this group of corporations. Of the total corporations, 41.1% were classified as Organizational Culture Type 3. Corporations with a type 3 organizational culture corresponded to a participative, an autonomous, and a risk-taking group of corporations.

Three independent variables were introduced to identify the factors in organizational learning styles: organizational culture type with 3 levels; industry classification with 3 levels (wholesales and retail trade, manufacturing, and hotels and restaurants); and organizational size with 2 levels (299 or less employees and 300 or more employees). The size of an organization was a statistically significant variable according to the result of the global two-way contingency table analysis. Multinomial logistic regression indicated that a relationship between the independent variables, i.e. industry classification, organizational culture type, and the size of an organization, and the dependent variable, i.e. organizational learning style, existed. Individual relationships between industry classification and organizational learning style, between organizational culture type and organizational learning style, and between the size of an organization and organizational learning style were supported. More specifically, the

statistics verified two relationships. The corporations in wholesale and retail trade are 85.3% less likely to be in the group of Organizational Learning Style 2 relative to the groups of Organizational Learning Style 4 than are the corporations in hotels and restaurants. The corporations with Organizational Culture Type 2 are 3.47 times more likely to be in the group of Organizational Learning Style 3 relative to the groups of Organizational Learning Style 4 than are the corporations with Organizational Culture Type 3.

All roles of HRD were considered to be necessary to facilitate the corporation's organizational learning. The Organizational Culture Changer role was required the most highly, and the Strategic Infrastructure Designer role and the Operational Effectiveness Developer role were required in a similar degree. According to the global MANOVA result, there was no statistically significant difference in the roles of HRD among the groups with different organizational learning styles. The null hypothesis that there is no difference in the requirement of the roles of HRD in each group of corporations with different organizational learning styles was retained.

Conclusions

Based on the findings from the analyses of data and within the limitations of this study, the following conclusions were extracted:

1. There are four types of organizational learning styles in the corporations of wholesale and retail trade, manufacturing, and hotels and restaurants in the Republic of Korea.

2. The characteristics of each type of organizational learning style are determined by the combination of the organizations' learning orientations, i.e. Knowledge Source, Learning Content, Dissemination Mode, and Learning Scope.
3. The characteristics of Organizational Learning Style 1 are preference of an internal knowledge source over an external knowledge source, preference of an informal dissemination mode over a formal dissemination mode, and preference of a transformative learning scope over incremental learning scope. The characteristics of Organizational Learning Style 2 are preference of an internal knowledge source over an external knowledge source, preference of a production oriented learning content over a delivery oriented learning content, and preference of a formal dissemination mode over an informal dissemination mode. The characteristics of Organizational Learning Style 3 are preference of an informal dissemination mode over a formal dissemination mode and preference of an incremental learning scope over a transformative learning scope. The characteristics of Organizational Learning Style 4 are preference of an external knowledge source over an internal knowledge source, preference of a delivery oriented learning content over a production oriented learning content, preference of an informal dissemination mode over an external dissemination mode, and preference of a transformative learning scope over an incremental learning scope.
4. There are three types of organizational culture in the corporations of wholesale and retail trade, manufacturing, and hotels and restaurants in the Republic of Korea.

5. The characteristics of each type of organizational culture are determined by the combination of three aspects of organizational culture, i.e. Participative culture, Hierarchical culture, and Risk-taking culture.
6. There are two types of organizational culture that have opposite characteristics and the other one has midpoint characteristics between the opposite types of organizational culture. One type of organizational culture is a non-participative, a hierarchical, and a stability seeking (non-risk-taking) culture. Another type of organizational culture is a participative, an autonomous (non-hierarchical), and a risk-taking culture. The other type of organizational culture doesn't have outstanding characteristics in terms of a Participative, a Hierarchical, and a Risk-taking aspect of organizational culture.
7. Types of organizational culture, industry classification, and organizational size are the factors affecting organizational learning style. More specifically, the corporations in wholesale and retail trade are less likely to have organizational learning style preferring an internal knowledge source, a production oriented learning content, and a formal dissemination mode relative to have organizational learning style preferring an external knowledge source, a delivery oriented learning content, an informal dissemination mode, and a transformative learning scope than are the corporations in hotels and restaurants. The corporations with a moderate type of organizational culture are more likely to have organizational learning style preferring an informal dissemination mode and an incremental learning scope relative to have organizational learning style preferring an

external knowledge source, a delivery oriented learning content, an informal dissemination mode and a transformative learning scope than are the corporations with a participative, an autonomous (non-hierarchical), and a risk-taking culture.

8. All roles of HRD are necessary for facilitating organizational learning. Among the roles of HRD, a role of shaping culture change for renewal and transformation and business goal accomplishment is required the most highly. A role of designing organizational infrastructure for organizational change based on strategic issues and a role of developing processes and/or programs to improve operational efficacy based on the result of monitoring administrative process are required in a similar degree.
9. There are not differences in the roles of HRD to facilitate organizational learning among the organizations with different organizational learning styles. This is possibly because all roles of HRD are necessary for facilitating organizational learning.

Recommendations

Recommendations for practice and recommendations for future research are presented in this part.

Recommendations for Practice

The following recommendations are made for practice in the corporations based on the result of this study:

1. Organizations have different organizational learning styles and it may be difficult to alter an organization's learning style. Therefore, efforts to identify organizational learning style in each corporation should be performed. The identified type of organizational learning style should be considered when HRD departments develop organizational learning strategies.
2. Even though organizational learning style is difficult to be altered, it doesn't mean that organizational learning style cannot be altered. Therefore, efforts to determine whether an organization's learning style is appropriate for the corporation in terms of industry classification, organizational culture, and the size of an organization should be performed. To determine the appropriateness of organizational learning style, the result of the benchmarking can be used and the target corporations of the benchmarking should be the corporations, which are believed to yield a productive business result. If an identified organizational learning style is not appropriate for the corporation, a strategy of changing organizational learning style should be developed by HRD departments.
3. A strategy of directly changing organizational learning style can be developed. However, organizational culture, industry classification, and organizational size are the factors affecting organizational learning style. That means organizational learning style can be also altered if there are changes in organizational culture, industry classification, and organizational size. Efforts to change organizational learning style can be accomplished by the efforts of organizational culture change, industrial reconversion, and downsizing.

4. All roles of HRD are believed to contribute to the facilitation of organizational learning. Therefore, to increase a corporation's capacity to take effective actions, all roles of HRD should be treated importantly.
5. The ability to do effective organizational learning is a core competency for the success in an increasing complex and unpredictable business. Therefore, the roles of HRD, therefore, should be extended to the organizational level.

Recommendations for Future Research

The following recommendations are made for future research based on the results of this study:

1. Future organizational learning style research should be conducted on an industry-wide and world-wide level to determine if there are differences from the results of this study.
2. Future organizational learning style research with different key informants, for example HRD professionals, should be conducted to determine if there are differences from the results of this study.
3. Quantitative research method cannot be the best one as a research tool. Therefore, future organizational learning style research with the qualitative research method or with both quantitative and qualitative research method should be conducted to determine if there are differences from the result of this study.
4. In a statistical point of view, the more key informants are in an organization, the more accurate the organization-level indicator is. Therefore, future research with

more key informants in an organization should be performed to determine if there are differences from the result of this study.

5. To determine organizational learning style and organizational culture, cluster analyses were conducted in this study. There might be other methods to determine organizational learning style and organizational culture. Therefore, future research to identify what is the better or the best method to determine organizational learning style and organizational culture should be performed.
6. To identify organizational learning style and organizational culture, at first, the factor structure of organizational learning style and organizational culture were extracted and, then, cluster analyses were introduced in this study. If two separate statistical analyses are performed, the possibility of loosing original information is increased. Therefore, future research developing a statistical method, which performs factor structure extraction and clustering of the cases simultaneously, should be conducted.
7. Even though organizational learning is more than the sum of individual learning, organizational learning is accomplished through the individuals in an organization. Therefore, future research identifying the relationship between organizational learning style and individual learning styles should be performed.
8. Future research to identify other variables affecting organizational learning styles should be conducted. Probable variables are organizational structure, organizational strategy, organizational technology, leadership style, and the age of an organization.

9. Future research to develop a role model of HRD based on the empirical data should be conducted. The roles of HRD were just placed in a row in most of the previous studies.
10. Future research to identify if there are role differences between HR and HRD, if the roles of HR and HRD can be separately classified, and which roles can be shared between HR and HRD for organizational learning should be conducted.
11. Future research to identify the relationship between organizational learning style and organizational performance and to identify which types of organizational learning styles are appropriate for performance improvement should be conducted.
12. Future research to identify what are the criteria to determine whether organizational learning styles are appropriate for an organization or not should be conducted.

REFERENCES

Adler, P. S., & Cole, R. E. (1993). Designed for learning: A tale of two auto plants. *Sloan Management Review, 34*(3), 85-94.

Aldenderfer, M. S., & Blashfield, R. K. (1984). *Cluster analysis*. Beverly Hills, CA: Sage.

Allen, R. F., & Dyer, F. J. (1980). A tool for tapping the organizational unconscious. *Personnel Journal*, *59*(3) 57-63.

Argyris, C. (1967). Today's problem with tomorrow's organizations. *Journal of Management Studies, 4*(1), 31-55.

Argyris, C. (1976). Single-loop and double-loop models in research on decision making. *Administrative Science Quarterly, 21*(3), 363-375.

Argyris, C. (1977). Double loop learning in organizations. *Harvard Business Review, 55*(5), 115-125.

Argyris, C., & Schön, D. A. (1978). *Organizational learning: A theory of action perspective*. Reading, MA: Addison-Wesley.

Argyris, C., & Schön, D. A. (1996). *Organizational learning II: Theory, method, and practice*. Reading, MA: Addison-Wesley.

Arnold, D. O. (1970). Dimensional sampling: An approach for studying a small number of cases. *American Sociologist, 5*(2), 147-150.

Berthon, P., Pitt, L. F., & Ewing, L. T. (2001). Corollaries of the collective: The influence of organizational culture and memory development on perceived decision-making context. *Journal of the Academy of Marketing Science*, *29*(2), 135-150.

Bettinger, C. (1989). Use corporate culture to trigger high performance. *Journal of Business Strategy*, *10*(2) 38-42.

Beyer, J. M. (1981). Ideologies, values and decision making in organizations. In P. C. Nystrom & W. H. Starbuck (Eds.), *Handbook of organizational design* (Vol. 2, pp. 166-202). New York: Oxford University Press.

Bontis, N., Crossan, M. M., & Hulland, J. (2002). Managing an organizational learning system by aligning stocks and flows. *Journal of Management Studies, 39*(4), 437-469.

Burgelman, R. A. (1983). A process model of internal corporate venturing in the diversified major firm. *Administrative Science Quarterly*, *28*(2), 223-244.

Callahan, J. L. (2003). Organizational learning: A reflective and representative critical issue for HRD. In A. M. Gilley, J. L. Callahan, & L. S. Bierema (Eds.), *Critical issues in HRD: A new agenda for the twenty-first century, New perspectives on organizational learning, performance, and change* (pp. 161-177). Cambridge, MA: Perseus.

Cameron, K. S., & Ettington, D. R. (1988). The conceptual framework of organizational culture. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research* (Vol. 6, pp. 356-396). New York: Agathon Press.

Cangelosi, V. E., & Dill, W. R. (1965). Organizational learning: Observations toward a theory. *Administrative Science Quarterly, 10*(2), 175-203.

Cantley, M. F., & Sahal, D. (1980). *Who learns what?: A conceptual description of capability and learning in technological systems*. Laxenburg, Austria: International Institute for Applied Systems Analysis.

Chalofsky, N. (1992). A unifying definition for the human resource development profession. *Human Resource Development Quarterly*, *3*(2), 175-182.

Chalofsky, N., & Lincoln, C. (1983). *Up the HRD ladder*. Reading, MA: Addison-Wesley.

Chandler, A. (1962). *Strategy and structure*. Cambridge, MA: MIT Press.

Cook, S. D. N., & Yanow, D. (1993). Culture and organizational learning. *Journal of Management Inquiry, 2*(4), 373-390.

Craig, R. (Ed.). (1976). *Training and development handbook* (2nd ed.). New York: McGraw-Hill.

Crossan, M., & Hulland, J. (1997). *Measuring organizational learning*. Paper presented at Academy of Management 1997, Boston, MA.

Crossan, M., Lane, H., & White, R. (1999). An organizational learning framework: From institution to institution. *Academy of Management Review, 24*(3), 522-537.

Crossan, M., Lane, H., White R., & Djurfeldt, L. (1995). Organizational learning: Dimensions for a theory. *International Journal of Organizational Analysis, 3*(4), 337-360.

Crow, S. M., Hartman, S. J. (2002). Organizational culture: Its impact on employee relations and discipline in health care organizations. *Health Care Management*, *21*(2), 22-28.

Cumming, J., Hall, C., Harwood, C., & Gammage, K. (2002). Motivational orientations and imagery use: A goal profiling analysis. *Journal of Sports Sciences*, *20*(2), 127-136.

Cyert, R. M., & March, J. G. (1963). *A behavioral theory of the firm*. Englewood Cliffs, NJ: Prentice-Hall.

Daft, R. L. (1998). *Organization theory and design* (6th ed.). Cincinnati, OH: South-Western College Publishing.

Daft, R. L., & Weick, K. E. (1984). Toward a model of organizations as interpretation systems. *Academy of Management Review, 9*(2), 284-295.

DeGeus, A. (1988). Planning as learning. *Harvard Business Review, 66*(2), 70-74.

Denison, D. R. (1990). *Corporate culture, and organization effectiveness*. New York: John Wiley.

Denison, D. R. (1996). What is the difference between organizational culture and organizational climate? A native's point of view on a decade of paradigm wars. *Academy of Management Review*, *21*(3), 619-654.

Denison, D. R., & Mishra, A. K. (1995). Organizational culture and effectiveness. *Organization Science*, *6*(2), 204-223.

DiBella, A. J. (2001). *Learning practices: Assessment and action for organizational improvement*. Upper Saddle River, NJ: Prentice Hall.

DiBella, A. J., Nevis, E. C., & Gould, J. M. (1996). Understanding organizational learning capability. *Journal of Management Studies, 33*(3), 361-379.

Dixon, N. M. (1992). Organizational learning: A review of the literature with implications for HRD professionals. *Human Resource Development Quarterly, 3*(1), 29-49.

Duncan, R. B., & Weiss, A. (1979). Organizational learning: Implications for organizational design. In B. Staw (Ed.), *Research in organizational behavior* (Vol. 1, pp. 75-123). Greenwich, CT: JAI Press.

Easterby-Smith, M. (1997). Disciplines of organizational learning: Contributes and critiques. *Human Relations*, *50*(9), 1095-1113.

Easterby-Smith, M., Crossan, M., & Nicolini, D. (2000). Organizational learning: Debates past, present and future. *Journal of Management Studies, 3*7(6), 783-796.

Epple, D., Argote, L., & Devadas, R. (1991). Organizational learning curves: A method for investigating intra-plant transfer of knowledge acquired through learning by doing. *Organization Science*, *2*(1), 58-70.

Fiol, C., & Lyles, M. (1985). Organizational learning. *Academy of Management Review, 10*(4), 803-813.

French, W. L., & Bell, C. H. (1984). *Organization development*. Englewood Cliffs, NJ: Prentice-Hall.

Gall, M. D., Borg, W. R., & Gall, J. P. (1996). *Educational research: An introduction* (6^{th} ed.). White plains, NY: Longman.

Gehrardi, S. (1999). Learning as problem-driven or learning in the fact of mystery? *Organization Studies, 20*(1), 101-124.

Gilley, J. W., & Eggland, S. A. (1989). *Principles of human resource development*. Reading, MA: Addison-Wesley.

Gordon, G. G., & Cummins, W. M. (1979). *Managing management climate*. Lexington, MA: Lexington Books.

Gordon, J. R., Mondy, R. W., Sharplin, A., & Premeaux, S. R. (1990). *Management and organizational behavior*. Boston: Allyn and Bacon.

Gregorc, A. F. (1985). *Inside styles: Beyond the basics*. Maynard, MA: Gabriel Systems.

Hair, J., Anderson, R., Tatham, R., & Black, W. (1995). *Multivariate data analysis with readings* (3rd ed.). New York: Macmillan.

Hamel, G., & Prahalad, C. K. (1993). Strategy as stretch and leverage. *Harvard Business Review*, *71*(2), 75-84.

Hammer, J., Howell, S., Bytzer, P., Horowitz, M., & Talley, N. J. (2003). Symptom clustering in subjects with and without diabetes mellitus: A population-based study of 15,000 Australian adults. *The American Journal of Gastroenterology*, *98*(2), 391-398.

Harrison, R. (1972). Understanding your organization's character. *Harvard Business Review*, *50*(3), 119-128.

Hedberg, B. (1981). How organizations learn and unlearn. In P. C. Nystrom, & W. H. Starbuck (Eds.), *Handbook of organizational design* (pp. 3-27). New York: Oxford University Press.

Honey, P., & Mumford, A. (1982). *The manual of learning styles*. Maidenhead, UK: Honey.

Hosmer, D. W., & Lemeshow, S. (2000). *Applied logistic regression* (2nd ed.). New York: Wiley.

Huber, G. P. (1991). Organizational learning: The contributing processes and the literatures. *Organizational Science, 2*(1), 88-115.

Huff, A. S. (1990). *Mapping strategic thought*. New York: Wiley.

Jacobs, R. L. (1988). A proposed domain of human performance technology: Implications for theory and practice. *Performance Improvement Quarterly*, *1*(2), 2-12.

Jelinek, M. (1979). *Institutionalizing innovations: A study of organizational learning systems*. New York: Praeger.

Kim, D. H. (1993). The link between individual and organizational learning. *Sloan Management Review, 35*(1), 37-50.

Kock, N. (1999). *Process improvement and organizational learning: The role of collaborative technologies*. Hersshey, PA: Idea Group Publishing.

Kolb, D. A. (1984). *Experiential learning*. Englewood Cliffs, NJ: Prentice-Hall.

Kolb, D. A., Rubin, I. M., & McIntyre, J. M. (1979). *Organizational psychology: An experimental approach*. Englewood Cliffs, NJ: Prentice-Hall.

Kowalczyk, S. J., & Pawlish, M. J. (2002). Corporate branding through external perception of organizational culture. *Corporate Reputation Review*, *5*(2/3), 159-174.

Kreitner, R., & Kinicki, A. (1992). *Organizational behavior: Instructor's edition* (2nd ed.). Boston: Irwin.

Kumar, N., Stern, L. W., & Anderson, J. C. (1993). Conducting interorganizational research using key informants. *Academy of Management Journal, 36*(6), 1633-1651.

Likert, R. (1967). *The human organization*. New York: McGraw-Hill.

Lipshitz, R., Popper, M., & Friedman, V. J. (2002). A multifacet model of organizational learning. *The Journal of Applied Behavioral Science, 38*(1), 78-98.

Lussier, R. N. (1993). *Human relations in organizations: A skill-building approach* (2nd ed.). Boston: Irwin.

Maeil Business Newspaper. (2002). *2002 Annual Corporation Reports* [CD-ROM]. Seoul, Korea: Maeil Business Newspaper.

Marks, H. M., & Louis, K. S. (1999). Teacher empowerment and the capacity of organizational learning. *Educational Administration Quarterly*, *35*(4), 707-750.

Marquardt, M. J., & Engel, D. W. (1993). HRD competencies for a shrinking world. *Training & Development*, *47*(5), 59-65.

Marsick, V. J., & Watkins, K. E. (1994). The learning organization: An integrative vision for HRD. *Human Resource Development Quarterly*, *5*(4), 353-360.

Maturana, H., & Varela, F. (1980). *Autopoiesis and cognition: The realization of living*. Dordrecht, German: Reidel.

McGill, M. E., Slocum, J. W., Jr., & Lei, D. (1992). Management practices in learning organizations. *Organizational Dynamics, 21*(1), 5-17.

McLagan, P. (1983). *Models for excellence*. Alexandria, VA: ASTD Press.

McLagan, P. (1989). Models for HRD practice. *Training & Development Journal*, *43*(9), 49-59.

McLagan, P. (1996). Great ideas revisited. *Training & Development, 50*(1), 60-65.

McLean, G. N., & McLean, L. (2001). If we don't define HRD in one country, how can we define it in an international context? *Human Resource Development International*, *4*(3), 313-326.

Miller, D. (1996). A preliminary typology of organizational learning: Synthesizing the literature. *Journal of Management*, *22*(3), 485-505.

Mingers, J. (2001). Can social systems be autopoietic? Assessing Luhmann's social theory. *The Sociological Review, 50*(2), 278-299.

Mitroff, I. I., & Kilmann, R. H. (1976). On organization stories: An approach to the design and analysis of organizations through myths and stories. In R. H. Kilmann, L. R. Pondy, & D. P. Slevin (Eds.), *Management of organization design* (Vol. 1, pp. 189-207). New York: Elsevier-North Holland.

Nadler, L. (1970). *Developing human resources*. Houston, TX: Gulf Press.

Nadler, L., & Nadler, Z. (1989). *Developing human resources: Concepts and a model* (3rd ed.). San Francisco: Jossey-Bass.

Nadler, L., & Wiggs, G. (1986). *Managing human resource development: A practical guide*. San Francisco: Jossey-Bass.

Nevis, E. C., DiBella, A. J., & Gould, J. M. (1995). Understanding organizations as learning systems. *Sloan Management Review, 36*(2), 73-85.

Newstrom, J. W., & Davis, K. (1993). *Organizational behavior: Human behavior at work* (9th ed.). New York: McGraw-Hill

Nicolini, D., & Meznar, M. B. (1995). The social construction of organizational learning: Conceptual and practical issues in the field. *Human Relations, 48*(7), 727-746.

Nutt, P. C. (1988). The effects of culture on decision making. *Omega*, *16*(6), 553-567.

Örtenblad, A. (2001). On differences between organizational learning and learning organization. *The Learning Organization*, *8*(3), 125-133.

Ott, J. S. (1989). *The organisation culture perspective*. Pacific Grove, CA: Brooks-Cole.

Peters, T. J., & Waterman, R. H. (1982). *In search of excellence: Lessons from America's best run companies*. New York: Harper and Row.

Peterson, M. W., & White, T. H. (1992). Faculty and administrator perceptions of their environments: Different views or different models of organizations? *Research in Higher Education, 33*(2), 177-204.

Pettigrew, A. (1990). Organizational climate and culture: Two constructs in search of a role. In B. Schneider (Ed.), *Organizational climate and culture* (pp. 413-433). San Francisco: Jossey-Bass.

Pfeffer, J. (1981). Management as symbolic action: The creation and maintenance of organizational paradigms. In L. L. Cummings & B, M. Shaw (Eds.), *Research in organizational behavior* (Vol. 3, pp. 1-52). Greenwich, CT: JAI Press.

Popper, M., & Lipshitz, R. (2000). Organizational learning: Mechanisms, culture, and feasibility. *Management Learning, 31*(2), 181-196.

Preskill, H., & Torres, R. T. (1999). *Evaluative inquiry for learning in organizations*. Thousand Oaks, CA: Sage.

Quinn, R. E. (1988). *Beyond rational management*. San Francisco: Jossey-Bass.

Reichers, A., & Schneider, B. (1990). Climate and culture: An evolution of constructs. In B. Schneider (Ed.), *Organizational climate and culture* (pp. 5-39). San Francisco: Jossey-Bass.

Ribbens, B. A. (1997). Organizational learning styles: Categorizing strategic predispositions from learning. *The International Journal of Organizational Analysis, 5*(1), 59-73.

Robbins, S. P. (1990). Organization theory: Structure design and applications. Englewood Cliffs, NJ: Prentice-Hall.

Roethlisberger, F. J., & Dickson, W. J. (1975). *Management and the worker: An account of a research programme conducted by Western Electric Company, Hawthorne Works Chicago*. Cambridge, MA: Harvard University Press.

Roth, P. L., & BeVier, C. A. (1998). Response rate in HRM/OB survey research: Norms and correlates, 1990-1994. *Journal of Management, 24*(1), 97-117.

Schein, E. (1985). *Organizational culture and leadership*. San Francisco: Jossey-Bass.

Schneider, B. (1985). Organizational behavior. *Annual Review of Psychology*, *36*, 573-611.

Senge, P. (1990). *The fifth discipline: The art and practice of the learning organization*. New York: Doubleday.

Shrivastava, P. (1981). *Strategic decision-making process: The influence of organizational learning and experience*. Unpublished doctoral dissertation, University of Pittsburgh, Pittsburgh.

Shrivastava, P. (1983). A typology of organizational learning systems. *Journal of Management Studies, 20*(1), 7-28.

Slater, S. F., & Narver, J. C. (1995). Market orientation and the learning organization. *Journal of Marketing*, *59*(3), 63-74.

Smircich, L. (1983). Concepts of culture and organizational analysis. *Administrative Science Quarterly*, *28*(3), 339-358.

Snedecor, G. W., & Cochran, W. G. (1980). *Statistical methods* (7th ed.). Ames, IA: Iowa State University Press.

Sokugawa, H. I. (1996). *Faculty perceptions of organizational culture in community colleges*. Unpublished Doctoral Dissertation, University of Hawaii, Manoa. (ERIC Document Reproduction Service No. ED430609)

Stata, R. (1989). Organizational learning: The key to management innovation. *Sloan Management Review, 30*(3), 63-74.

Sun, H. (2003). Conceptual clarifications for 'organizational learning', 'learning organization' and 'a learning organization'. *Human Resource Development International*, *6*(2), 153-166.

Swanson, R. A. (1995). Human resource development: Performance is the key. *Human Resource Development Qaurterly*, *6*(2), 207-213.

Swanson, R. A., & Holton, E. F. III (2001). *Foundations of human resource development*. San Francisco: Berrett-Koehler.

Swieringa, J., & Wierdsma, A. (1992). *Becoming a learning organization*. Workingham, UK: Addison-Wesley.

Templeton, G. F., Lewis, B. R., & Snyder, C. A. (2002). Development of a measure for the organizational learning construct. *Journal of Management Information Systems*, *19*(2), 175-218.

Tjepkema, S., Stewart, J., Sambrook, S., Mudler, M., Ter Horst, H., & Scheerens, J. (Eds.). (2002). *HRD and learning organizations in Europe*. New York: Routledge.

Tosi, H. L., Rizzo, J. R., & Carrol, S. J. (1990). *Managing organizational behaviour*. New York: Harper Collins.

Tsang, E. W. K. (1997). Organizational learning and the learning organization: A dichotomy between descriptive and prescriptive research. *Human Relations, 50*(1), 73-89.

Ulrich, D. (1997). *Human resource champions: The next agenda for adding value and delivering results*. Boston, MA: Harvard Business School Press.

Vallerand, R. J. (1989). Toward a methodology of cross-cultural validation of psychological questionnaires: Implications for research in French. *Canadian Psychology, 30*(4), 662-680.

Van der Post, W. Z., De Coning, T. J., & Smit, E. vd M. (1997). An instrument to measure organizational culture. *South African Journal of Business Management*, *28*(4), 147-168.

Walsh, J. P., & Ungson, G. R. (1991). Organizational memory. *Academy of Management Review, 16*(1), 57-91.

Watkins, K. E. (1989a). Business and industry. In S. Merriam, & P. Cunningham (Eds.), *Handbook of adult and continuing education* (pp. 422-430). San Francisco: Jossey-Bass.

Watkins, K. E. (1989b). Five metaphors: Alternative theories for human resource development. In D. Gradous (Ed.), *Systems theory applied to human resource development* (pp. 167-184). Alexandria, VA: ASTD Press.

Watkins, K. E. (2000). Aims, roles, and structures for human resource development. *Advanced in Developing Human Resources, 7*, 54-59.

Watkins, K. E., & Marsick, V. J. (1992). Building the learning organization: A new role for human resource developers. *Studies in Continuing Education, 14*(2), 115-129.

Weick, D., & Roberts, K. (1993). Collective mind and organizational reliability: The case of flight operations in an aircraft carrier deck. *Administrative Science Quarterly, 38*(3), 357-381.

Weinberger, L. A. (1998). Commonly held theories of human resource development. *Human Resource Development International, 1*(1), 75-93.

White, J. (1991). Corporate culture and corporate success, *South African Handbook of Management Development*, *6*(6), 17-22.

Willebrand, M., Andersson, G., Kildal, M., & Ekselius, L. (2002). Exploring of coping patterns in burned adults: Cluster analysis of the coping with burns questionnaire (CBQ). *Burns*, *28*(6), 549-554.

Yeung, A. K., Ulrich, D. O., Nason, S. W., & Von Glinow, M. A. (1999). *Organizational learning capability*. New York: Oxford University Press.

APPENDIX A

COVER LETTER FOR CONTENT VALIDATION OF THE SURVEY INSTRUMENT

JINCHUL "VINCE" JEONG

Ph. D. Candidate

EHRD, Texas A&M University

☎ 979-775-7809, ✉ vince2000@neo.tamu.edu

May, 2003

Dear ≪Prefix≫ ≪Last Name≫:

Howdy!

I am Vince Jeong, a Ph. D. student in EHRD.

I am now preparing for the dissertation. The temporary title of the dissertation is "Analysis of the factors and the roles of HRD in organizational learning styles as identified by key informants at selected corporations in the Republic of Korea". The target population is HR personnel in three industries (wholesale and retail trade; manufacturing; and hotels and restaurants).

The purpose of this letter and enclosed "Survey Questionnaire Plan" is to invite you to review the survey questionnaire that I plan to use for the dissertation.

I completely understand that there are a lot of demands for your time. However, your help is critical to the validation of my survey questionnaire. Any comment will be welcomed.

Especially, I want you to pay attention to the following things:

- Does each item reflect the related construct?
- Is there any item with inappropriate wording?
- Is there any item with a grammar problem?
- Is there an ambiguous item?
- Is there any item that doesn't fit with the purpose of the survey?
- What is the problem with the overall structure of the survey questionnaire?

At the end of the "Survey Questionnaire Plan", there are comments sheets. However, you can comment anywhere you want to.

Thank you so much for your valuable time and I TRULY appreciate your efforts. I am looking forward to receiving your comments within one week.

Sincerely,

Vince Jeong

APPENDIX B

COVER LETTER OF THE SURVEY INSTRUMENT

JINCHUL JEONG
Department of Agricultural & Vocational Education, Seoul National Univ.
San 56-1 Shillim-dong Kwanak-gu, Seoul 151-742
☎ (017) 371-0898, ✉ vince2000@neo.tamu.edu, Fax 02-873-2042

≪Date≫
≪Full Name≫ ≪Title≫
≪Company≫
≪Address≫ ≪City≫, ≪Province≫ ≪ZIP≫

Dear ≪Prefix≫ ≪Last Name≫:

This letter and enclosed questionnaire is to invite you to participate in a study regarding corporation's capacity to take effective action. This study is for my doctoral dissertation at Texas A&M University in the U.S.

The purpose of this study is to identify how corporations increase their capacity to take effective actions, what are the factors that differentiate the ways of increasing capacity to take effective actions, and what are the roles of HRD in increasing capacity to take effective actions.

I completely understand that there are a lot of demands for your time. However, your participation is critical for the scientific validity of the results. The questionnaire is designed to be completed in less than 15 minutes.

Your corporation was selected from the *2002 Annual Corporation Reports* (Maeil Business Newspaper, 2002). From the list, 240 companies were selected at random. The president or the vice president of the HR division in your company recommended you as a possible key informant because of your unique expertise of understanding organizational matters.

Actually, there is no specific personal benefit to you from this study. However, this study will benefit your corporation by providing how your corporation can increase its capacity to take effective actions, what are the factors in your corporation that differentiate the ways of increasing capacity to take effective actions from other corporations, and what are the roles of HRD in your corporation in increasing capacity to take effective actions.

You may refuse to answer any questions that make you feel uncomfortable. However, no risks of physical, psychological, or social injury are anticipated in completing the questionnaire. Please take the time to complete the questionnaire. After completing the questionnaire, please return it by using the self-addressed, postage-paid envelope provided.

The questionnaire from you will be coded to ensure your responses are kept confidential and no personal information of you will be disclosed.

This research study has been reviewed and approved by the Institutional Review Board—Human Subjects in Research, Texas A&M University. For research-related problems or questions regarding subjects' rights, you can contact the Institutional Review Board through Dr. Michael W. Buckley, Director of Support Services, Office of Vice President for Research at mwbuckley@tamu.edu.

Thank you so much for your valuable time. Your efforts are greatly appreciated. I am looking forward to receiving your completed questionnaire within one week of receipt.

Sincerely,

Jinchul Jeong

설문조사 의뢰 서한

수신: ≪성명≫ ≪직위≫ 선생님
≪회사명≫
≪우편번호≫ ≪회사 주소≫

≪성명≫ ≪직위≫ 선생님께:

안녕하십니까?

저는 정진철이라고 합니다. 현재 미국 Texas A&M 대학교에서 인적자원개발 (HRD)을 전공하고 있는 박사과정 학생입니다. 여러 모로 바쁘심에도 불구하고 이렇게 부탁을 드리게 되어 송구스럽습니다.

저는 현재 다음과 같은 사항을 밝혀 내기 위한 박사학위 논문을 쓰고 있습니다.

- 각 기업은 어떠한 방법을 통하여 조직의 학습 능력을 향상시키는가?
- 그러한 방법에 영향을 미치는 조직 내 변수들은 무엇인가?
- 조직의 학습 능력 향상을 위해 HRD 담당 부서에게 요구되는 일은 무엇인가?

대략 240 여 개의 기업들이 『2002 회사연감』을 통해 무작위로 선정되었고, 각 기업별로 3 명의 설문 응답자가 선정되었습니다. 선생님께서 설문 응답자로 선정된 이유는 선생님께서 업무 전반에 있어 그 누구보다 전문성을 지니시고 있으시기에 인사 담당 이사님께서 선생님을 강력히 추천하셨기 때문입니다.

이 연구를 통해 선생님 개인에게 돌아가는 혜택은 실질적으로 없습니다. 하지만 인사를 담당하고 계신 분으로서 선생님께서 몸 담고 계시는 회사에 대해 앞서 말씀 드린 세 가지 사항에 대한 정보를 제공함으로써 회사에 대한 이해를 넓히시는 데 큰 도움이 될 것으로 생각합니다. 연구가 종료된 이후에 선생님께 그 결과를 반드시 알려드릴 것을 약속 드립니다.

설문 문항 가운데 응답하고 싶지 않은 문항이 있다면 그 문항은 응답하지 않으셔도 됩니다. 하지만 선생님께서 응답해 주시는 문항 하나하나는 이 연구에 있어 너무도 소중합니다. 또한 응답하신 내용은 집단적으로 처리될 것이기 때문에 선생님 개인과 관련된 어떠한 사항도 누설되지 않을 것임을 굳게 약속 드립니다. 그러하오니 부디 시간을 내셔서 설문에 응답해 주실 것을 간곡히 부탁 드립니다. 설문에 응답하는 데는 대략 15 분 정도가 소요될 것입니다.

응답하신 설문은 동봉된 봉투, 혹은 팩스 (02-873-2041)를 이용하여 일주일 이내로 반송하여 주시면 됩니다.

이 연구는 미국 Texas A&M 대학 당국에 의해 검토되어 승인을 받았습니다. 하지만 연구와 관련해 어떤 문제점이 발견되거나 의문 사항이 있으실 경우 대학 당국에 직접 문의하실 수 있습니다 (담당자: Dr. Buckley, 이메일: mwbuckley@tamu.edu).

소중한 시간 내어 주심에 깊이 감사 드립니다. 모쪼록 선생님의 가정과 회사에 늘 행복과 평화가 함께 하시길 간절히 기원합니다.

감사합니다.

≪날짜≫

정 진 철 올림

ⓘ 연구 문의: 정 진 철 ☎ 017-371-0898 ✉ vince2000@neo.tamu.edu
(151-742) 서울특별시 관악구 신림동 산 56-1 서울대학교 농산업교육과

APPENDIX C

SURVEY INSTRUMENT

□□□□□

Organizational Learning Survey

Directions

This survey consists of four sections: Section 1 Organizational learning orientation; Section 2 Organizational culture; Section 3 Roles of HRD; and Section 4 Demographic information.

All questions are about the corporation in which you work, not about your department. Please check (✓) for what you consider to be the best answer from the available choices.

The information you provide is very important and will be kept completely confidential. It will take you about 15 minutes to complete the questionnaire.

Please return the completed questionnaire within one week of receipt by using the self-addressed, postage-paid envelope provided.

Thank you so much.

Section 1: Organizational learning orientation

In each item following, two alternatives to complete the statement are listed. Please make (✓) the block on the continuum between the two alternative statements that best describe your corporation (Mark <u>one</u> for each item).

			MOSTLY	MORE	EVEN	MORE	MOSTLY	
1	We value the knowledge …	gained from our own experience.	❑	❑	❑	❑	❑	created by others.
2	We invest in R&D on …	what our products or services should be.	❑	❑	❑	❑	❑	how to create or deliver our products or services.
3	When we need knowledge, we turn to …	the person most expert in that domain.	❑	❑	❑	❑	❑	written or organized sources in a data bank or library.

Please continue on next page! ➲

			MOSTLY	MORE	EVEN	MORE	MOSTLY	
4	We learn desired operational methods by …	using written procedure guidelines and manuals.	❑	❑	❑	❑	❑	verbally sharing knowledge between team or group members.
5	We spend more time on … our procedures or work methods.	correcting or updating	❑	❑	❑	❑	❑	questioning the assumptions underlying
6	We are likely to collaborate or subcontract with organizations that … our products or services.	design or assemble	❑	❑	❑	❑	❑	market or deliver
7	We believe in the skills and decision-making of … is more important.	individuals	❑	❑	❑	❑	❑	teams and task forces
8	Our recognition system is designed to reward … learning and development.	individual	❑	❑	❑	❑	❑	group
9	We focus on developing skills needed to … products or services.	design and make	❑	❑	❑	❑	❑	market and deliver
10	We focus on … tools and methods when improving how to do things better.	using existing	❑	❑	❑	❑	❑	creating new
11	When we have a new idea or method, …	we disseminate it in formal educational programs.	❑	❑	❑	❑	❑	a group of people embraces it and group members act as role models.
12	We believe that knowledge … always be made explicit.	cannot	❑	❑	❑	❑	❑	can
13	We are likely to acquire knowledge from others about …	the content of their products or services.	❑	❑	❑	❑	❑	how they assemble, market, or deliver their products or services.
14	We are likely to …	be an innovator in the way we do things.	❑	❑	❑	❑	❑	emulate the work of others.
15	We develop new products or services …	by ourselves.	❑	❑	❑	❑	❑	in collaboration with others.

Please continue on next page! ➲

			MOSTLY	MORE	EVEN	MORE	MOSTLY	
16	We focus on …	what our goals should be.	❑	❑	❑	❑	❑	how we should accomplish our goals.
17	To gather information of our history, we rely on …	what members of our team or business unit already know.	❑	❑	❑	❑	❑	written documents or photographs.
18	When we solve a problem or develop or provide a new product or service, we …	make formal announcement.	❑	❑	❑	❑	❑	don't formally announce it.
19	When things are going well, we tend to …	leave them as is.	❑	❑	❑	❑	❑	think about change.
20	If other firms want to benchmark with us, they would benchmark our …	design and make functions.	❑	❑	❑	❑	❑	market and deliver functions.
21	When hiring new individuals, we are most interested in their ability to …	perform a specific function.	❑	❑	❑	❑	❑	work well with others.

Section 2: Organizational culture

Below are some statements about your corporation. Please indicate (✓) the extent to which you agree or disagree with each of the following (Mark <u>one</u> for each item).

		Disagree strongly	Disagree somewhat	No opinion	Agree somewhat	Agree strongly
1	My corporation defines success on the basis of its concern for its members.	1	2	3	4	5
2	The "glue" that holds my corporation together is a focus on innovation and development.	1	2	3	4	5
3	The type of leader most valued at my corporation is best characterized as an authoritarian, an organizer, an efficiency expert.	1	2	3	4	5
4	The management style in my corporation is best characterized by competitiveness, performance, and achievement.	1	2	3	4	5

Please continue on next page! ➲

		Disagree strongly	Disagree somewhat	No opinion	Agree somewhat	Agree strongly
5	Decision making at my corporation can be best described as participative (demonstrating widespread participation).	1	2	3	4	5
6	The "glue" that holds my corporation together is formal procedure, rules, and policies.	1	2	3	4	5
7	The type of leader most valued at my corporation is best characterized as a hard-driver, an achiever, a competitor.	1	2	3	4	5
8	The management style in my corporation is best characterized by teamwork, consensus, and participation.	1	2	3	4	5
9	Decision making at my corporation can be best described as autonomous (giving functional units freedom).	1	2	3	4	5
10	My corporation defines success on the basis of its innovativeness and ability to take risks.	1	2	3	4	5
11	The type of leader most valued at my corporation is best characterized as a mentor, a harmonizer, a parent-figure.	1	2	3	4	5
12	The management style in my corporation is best characterized by individual initiative and freedom.	1	2	3	4	5
13	Decision making at my corporation can be best described as formal (depending upon the hierarchical structure).	1	2	3	4	5
14	My corporation defines success on the basis of its efficiency and stability.	1	2	3	4	5
15	The "glue" that holds my corporation together is performance and goal accomplishment.	1	2	3	4	5
16	The management style in my corporation is best characterized by secure employment, conformity, and predictability.	1	2	3	4	5
17	Decision making at my corporation can be best described as political (depending upon someone who has power).	1	2	3	4	5
18	My corporation defines success on the basis of its competitiveness among other corporations.	1	2	3	4	5
19	The "glue" that holds my corporation together is cohesion and teamwork among members.	1	2	3	4	5
20	The type of leader most valued at my corporation is best characterized as an entrepreneur, a delegator, a risk taker.	1	2	3	4	5

Please continue on next page! ➲

Section 3: Roles of HRD

You may or may not have a department of HRD (human resource development) in your corporation. Even though you don't have a department of HRD in your corporation, please remember the following definition of HRD when you answer each item in this section.

❋ Definition of HRD (human resource development)

HRD means a learning system designed to enhance individual performance for the purpose of improving organizational efficiency. Representative forms of HRD consist of individual development, career development, and organizational development.

Exemplary practices of HRD include training, action learning, problem solving, task analysis, process reengineering, culture survey, benchmarking, conflict resolution, cross-cultural team building, career development assessment, and scenario building.

Below are some statements about the roles of HRD. Please indicate (✓) the extent to which you agree or disagree with each of the following (Mark one for each item).

To increase my corporation's capacity to take effective action,		Disagree strongly	Disagree somewhat	No opinion	Agree somewhat	Agree strongly
1	HRD should help my corporation to accomplish business goals.	1	2	3	4	5
2	HRD should participate in shaping culture change for renewal and transformation.	1	2	3	4	5
3	HRD should spend time on operational issues.	1	2	3	4	5
4	HRD should work to offer assistance to help employees meet individual work-related needs.	1	2	3	4	5
5	HRD should develop processes and programs to link HRD strategies to accomplish business strategies.	1	2	3	4	5
6	HRD should participate in designing organizational infrastructure.	1	2	3	4	5
7	HRD should spend time on listening and responding employees' work-related needs.	1	2	3	4	5

Please continue on next page! ➲

To increase my corporation's capacity to take effective action,		Disagree strongly	Disagree somewhat	No opinion	Agree somewhat	Agree strongly
8	HRD should work to align HRD strategies and business strategies.	1	2	3	4	5
9	HRD should develop processes and programs to help the organization transform itself.	1	2	3	4	5
10	HRD should help my corporation to adapt to change.	1	2	3	4	5
11	HRD should spend time on strategic issues.	1	2	3	4	5
12	HRD should work to reshape behavior for organizational change.	1	2	3	4	5
13	HRD should develop processes and programs to efficiently process documents and transactions.	1	2	3	4	5
14	HRD should help my corporation to improve operating efficacy.	1	2	3	4	5
15	HRD should participate in improving employee commitment.	1	2	3	4	5
16	HRD should work to monitor administrative processes.	1	2	3	4	5
17	HRD should develop processes and programs to take care of employees' individual work-related needs.	1	2	3	4	5
18	HRD should help my corporation to take care of employees' individual development with respect to work.	1	2	3	4	5
19	HRD should participate in the process of defining business strategies.	1	2	3	4	5
20	HRD should spend time on supporting new behaviors for keeping the firm competitive.	1	2	3	4	5

Please continue on next page! ➲

Section 4: Demographic information

This section is for statistical purposes only and will be kept confidential. Please check (✓) the block or write your answer on the line provided.

4-1. Corporation information	4-2. Individual information
1. What industry classification does your corporation belong to? ❑ Wholesale and retail trade ❑ Manufacturing ❑ Hotels and restaurants 2. What is the number of employees in your corporation? _____ 3. Do you have an HRD department in your corporation? ❑ Yes ❑ No	1. What is your age? _____ years old 2. What is your gender? ❑ Female ❑ Male 3. How many years have you been employed by your present corporation? _____ 4. What type of position do you presently hold in your corporation? ❑ Staff ❑ Assistant manager ❑ Manager ❑ Deputy general manager ❑ General manager ❑ Director ❑ Other _____

☺ Thank you so much ☺

조직학습에 대한 설문지

※ 설문 응답 시 유의 사항 ※

모든 문항은 선생님께서 근무하고 계신 **회사 전반**과 관련된 것임을 명심해 주십시오. 선생님께서 근무하시는 부서에만 해당되는 사항이 아닙니다.

1. 조직 학습에 대한 인식

응답 요령

- 이 부분에는 조직 학습과 관련된 21 개 문항이 포함되어 있습니다.
- 각 문항에는 선생님께서 근무하고 계시는 회사와 관련된 2 개의 진술문이 양끝에 제시되어 있습니다.
- 2 개의 진술문 가운데 어느 것이 선생님께서 근무하고 계시는 회사를 보다 잘 묘사한다고 생각하시는지 그 정도를 '모르겠다—그런 편이다—아주 그렇다' 가운데 선택하셔서 해당되는 □에 ✓표 하여 주십시오 (**한 문항 당 한 곳의 □에만 ✓표 하여 주십시오**).

응답 예) 선생님께서 근무하고 계신 회사에서는 '근무 년 수'보다 '업무 실적'에 기초하여 성과급을 지급하는 편이라고 생각하신다면 다음과 같이 ✓표 하시면 됩니다.

	아주 그렇다	그런 편이다	모르겠다	그런 편이다	아주 그렇다	
00. 우리 회사에서는 **근무 년 수**에 기초하여 성과급을 지급한다.	□	□	□	☑	□	우리 회사에서는 **업무 실적**에 기초하여 성과급을 지급한다.

다음 쪽에 계속 됩니다 ➲

		아주 그렇다	그런 편이다	모르겠다	그런 편이다	아주 그렇다	
01.	우리 회사에서는 **우리 자신의 경험에 의해 획득한** 지식에 가치를 둔다.	☐	☐	☐	☐	☐	우리 회사에서는 **다른 회사에 의해 만들어진** 지식에 가치를 둔다.
02.	우리 회사는 **제품 혹은 서비스 자체**에 관한 연구 개발(R&D)에 투자한다.	☐	☐	☐	☐	☐	우리 회사는 **제품 혹은 서비스를 개발 또는 유통하는 방법**에 관한 연구 개발(R&D)에 투자한다.
03.	어떤 지식이 필요할 때 우리 회사에서는 **해당 분야의 회사 내 전문가**를 찾는다.	☐	☐	☐	☐	☐	어떤 지식이 필요할 때 우리 회사에서는 **회사 내 문서, 데이터 뱅크, 도서 등 각종 기록**을 찾는다.
04.	우리 회사에서는 **안내서, 매뉴얼 등**을 사용하여 바람직한 업무 수행 방법을 배운다.	☐	☐	☐	☐	☐	우리 회사에서는 **팀원들 사이의 대화를 통한 지식 공유**에 의해 바람직한 업무 수행 방법을 배운다.
05.	우리 회사에서는 업무 수행 절차 또는 방법을 **수정 또는 보완**하는 데 보다 많은 시간을 사용한다.	☐	☐	☐	☐	☐	우리 회사에서는 업무 수행 절차 또는 방법이 **밑바탕 두고 있는 기본 가정에 의문을 제기**하는 데 보다 많은 시간을 사용한다.
06.	우리 회사는 우리 제품 혹은 서비스를 **디자인 또는 조립**하는 회사들과 협력 또는 계약을 맺으려는 경향이 있다.	☐	☐	☐	☐	☐	우리 회사는 우리 제품 혹은 서비스를 **판매 또는 유통**하는 회사들과 협력 또는 계약을 맺으려는 경향이 있다.
07.	우리 회사에서는 **개인**의 기술과 의사결정이 중요하게 취급된다.	☐	☐	☐	☐	☐	우리 회사에서는 **작업팀**의 기술과 의사결정이 중요하게 취급된다.
08.	우리 회사의 보상 시스템은 **개인**의 학습과 개발에 기초한 것이다.	☐	☐	☐	☐	☐	우리 회사의 보상 시스템은 **집단**의 학습과 개발에 기초한 것이다.
09.	우리 회사는 제품 또는 서비스의 **디자인 또는 생산**에 필요한 기술을 개발하는 데 초점을 둔다.	☐	☐	☐	☐	☐	우리 회사는 제품 또는 서비스의 **판매 또는 유통**에 필요한 기술을 개발하는 데 초점을 둔다.
10.	우리 회사에서는 업무의 효율성 증진을 위해 **현존하는** 도구와 방법을 사용하는 데 초점을 둔다.	☐	☐	☐	☐	☐	우리 회사에서는 업무의 효율성 증진을 위해 **새로운** 도구와 방법을 창안하는 데 초점을 둔다.
11.	우리 회사에서는 새로운 아이디어 또는 방법이 있을 때, **공식적인 교육 프로그램**을 통해서 공유한다.	☐	☐	☐	☐	☐	우리 회사에서는 새로운 아이디어 또는 방법이 있을 때, **누군가 먼저 이를 수용하고 조직원 사이에서 시범적인 행동**을 함으로써 공유한다.

다음 쪽에 계속 됩니다 ➲

		아주 그렇다	그런 편이다	모르겠다	그런 편이다	아주 그렇다	
12.	우리 회사에서는 지식이란 항상 분명히 나타내어질 수 **있는 것은 아니다**라고 여겨진다	☐	☐	☐	☐	☐	우리 회사에서는 지식이란 항상 분명히 나타내어질 수 **있다**라고 여겨진다.
13.	우리 회사는 다른 회사로부터 **제품 혹은 서비스 자체**와 관련된 지식을 얻으려 한다.	☐	☐	☐	☐	☐	우리 회사는 다른 회사로부터 **제품 혹은 서비스를 생산, 판매 또는 유통하는 방법**과 관련된 지식을 얻으려 한다.
14.	우리 회사는 업무를 수행함에 있어 **혁신자**에 가깝다.	☐	☐	☐	☐	☐	우리 회사는 업무를 수행함에 있어 **모방자**에 가깝다.
15.	우리 회사는 **우리 스스로** 신제품 혹은 새로운 서비스를 개발한다.	☐	☐	☐	☐	☐	우리 회사는 **다른 회사와 공동으로** 신제품 혹은 새로운 서비스를 개발한다.
16.	우리 회사는 **사업 목적 그 자체**에 초점을 둔다.	☐	☐	☐	☐	☐	우리 회사는 **사업 목적을 달성하는 방법**에 초점을 둔다.
17.	회사의 역사에 관한 정보를 얻고자 할 때, 우리 회사에서는 **사원들이 이미 알고 있는 것**에 의존한다.	☐	☐	☐	☐	☐	회사의 역사에 관한 정보를 얻고자 할 때, 우리 회사에서는 **문서 혹은 사진 등**에 의존한다.
18.	문제를 해결하거나 새로운 제품 혹은 서비스를 개발 또는 제공할 때, 우리 회사에서는 이를 **공지한다**.	☐	☐	☐	☐	☐	문제를 해결하거나 새로운 제품 혹은 서비스를 개발 또는 제공할 때, 우리 회사에서는 이를 **공지하지 않는다**.
19.	업무 실적이 좋을 경우, 우리 회사에서는 **현상태를 유지**하려는 경향이 있다.	☐	☐	☐	☐	☐	업무 실적이 좋을 경우, 우리 회사에서는 **변화를 모색**하려는 경향이 있다.
20.	만약 다른 회사들이 우리 회사를 벤치마킹할 경우, 그들은 우리 회사의 **디자인 또는 생산** 부서에 관심을 둘 것이다.	☐	☐	☐	☐	☐	만약 다른 회사들이 우리 회사를 벤치마킹할 경우, 그들은 우리 회사의 **판매 또는 유통** 부서에 관심을 둘 것이다.
21.	새로운 직원을 고용할 때, 우리 회사는 그(녀)가 **특정한 직무를 수행할 수 있는가**에 가장 관심을 갖는다.	☐	☐	☐	☐	☐	새로운 직원을 고용할 때, 우리 회사는 그(녀)가 **동료들과 융화되어 업무를 수행할 수 있는가**에 가장 관심을 갖는다.

다음 쪽에 계속 됩니다 ➲

2. 조직 문화

응답 요령

- 이 부분에는 조직 문화와 관련된 20 개 문항이 포함되어 있습니다.
- 선생님께서 근무하고 계시는 회사와 관련하여 각 문항에 대한 선생님의 동의 정도를 '전혀 동의하지 않음—별로 동의하지 않음—의견 없음—약간 동의함—매우 동의함' 가운데 선택하셔서 해당되는 곳에✓표 하여 주십시오 (**한 문항 당 한 곳에만 ✓표 하여 주십시오**).

	전혀 동의하지 않음	별로 동의하지 않음	의견 없음	약간 동의함	매우 동의함
01. 우리 회사에서 성공이라 함은 **회사의 사원들에 대한 배려**를 의미한다.	1	2	3	4	5
02. 우리 회사의 결속력은 **혁신과 개발에 초점을 두는 것**으로부터 나온다.	1	2	3	4	5
03. 우리 회사에서는 **권위적인, 조직하는, 효율적인**과 같은 특성을 갖는 리더가 가장 존중받는다.	1	2	3	4	5
04. 우리 회사의 경영 스타일이 갖는 특성은 **경쟁, 성과, 성취**이다.	1	2	3	4	5
05. 우리 회사의 의사결정과정의 특성은 **참여적인(폭 넓게 참여하는)**으로 가장 잘 표현될 수 있다.	1	2	3	4	5
06. 우리 회사의 결속력은 **공식적인 절차, 규정, 그리고 정책**으로부터 나온다.	1	2	3	4	5
07. 우리 회사에서는 **정력적인, 성취하는, 경쟁하는**과 같은 특성을 갖는 리더가 가장 존중받는다.	1	2	3	4	5
08. 우리 회사의 경영 스타일이 갖는 특성은 **팀웍, 합의, 참여**이다.	1	2	3	4	5
09. 우리 회사의 의사결정과정의 특성은 **자율적인(부서별 자유를 주는)**으로 가장 잘 표현될 수 있다.	1	2	3	4	5
10. 우리 회사에서 성공이라 함은 **회사의 혁신성과 모험성**을 의미한다.	1	2	3	4	5
11. 우리 회사에서는 **조언하는, 조정하는, 부모 같은**과 같은 특성을 갖는 리더가 가장 존중받는다.	1	2	3	4	5
12. 우리 회사의 경영 스타일이 갖는 특성은 **개개인의 자유와 솔선수범**이다.	1	2	3	4	5
13. 우리 회사의 의사결정과정의 특성은 **형식적인(위계구조에 의존하는)**으로 가장 잘 표현될 수 있다.	1	2	3	4	5

다음 쪽에 계속 됩니다 ➲

	전혀 동의하지 않음	별로 동의하지 않음	의견 없음	약간 동의함	매우 동의함
14. 우리 회사에서 성공이라 함은 **회사의 효율성과 안정성**을 의미한다.	1	2	3	4	5
15. 우리 회사의 결속력은 **성과와 목표 달성**으로부터 나온다.	1	2	3	4	5
16. 우리 회사의 경영 스타일이 갖는 특성은 **안정적인 고용, 순응, 예측**이다.	1	2	3	4	5
17. 우리 회사의 의사결정과정의 특성은 **정치적인(권력을 지니고 있는 이에게 의존하는)**으로 가장 잘 표현될 수 있다.	1	2	3	4	5
18. 우리 회사에서 성공이라 함은 **다른 회사와의 경쟁력**을 의미한다.	1	2	3	4	5
19. 우리 회사의 결속력은 **사원들 사이의 단결과 팀웍**으로부터 나온다.	1	2	3	4	5
20. 우리 회사에서는 **기업가적인, 대표하는, 모험적인**과 같은 특성을 갖는 리더가 가장 존중받는다.	1	2	3	4	5

다음 쪽에 계속 됩니다 ➲

3. 인적자원개발(HRD)의 역할

응답 요령

- 이 부분에는 인적자원개발(HRD)의 역할과 관련된 20 개 문항이 포함되어 있습니다.
- **각 문항은 선생님께서 근무하고 계신 회사가 업무를 효과적으로 수행하기 위한 역량을 증진시키기 위해 인적자원개발(HRD)에서 해야 할 일들과 관련되어 있습니다.**
- 선생님께서 근무하고 계시는 회사와 관련하여 각 문항에 대한 선생님의 동의 정도를 '전혀 동의하지 않음—별로 동의하지 않음—의견 없음—약간 동의함—매우 동의함' 가운데 선택하셔서 해당되는 곳에 ✓표 하여 주십시오 (**한 문항 당 한 곳에만 ✓표 하여 주십시오**).
- **회사 내에 인적자원개발(HRD) 담당 부서가 없을 경우라도 아래의 정의를 기억하시고 응답하여 주시기 바랍니다.**

✻ 인적자원개발 (HRD: human resource development)의 정의

- **인적자원개발**이란 회사에서 이루어지고 있는 각종 **학습과 관련된 시스템 전반**을 의미합니다.
- **주요 영역**으로는 사원들 **개인에 대한 교육·훈련**, **경력 개발**, **조직 개발** 등이 포함된다고 할 수 있습니다.
- 이를 위한 **대표적인 업무**들로는 각종 **교육·훈련 프로그램 개발 및 시행**, 사원들 개인에 대한 **카운셀링**, 인적자원 관련 각종 **문제해결**, 조직 내 **갈등 관리**를 들 수 있습니다.

우리 회사가 업무를 효과적으로 수행하기 위한 역량을 증진시키기 위해	전혀 동의하지 않음	별로 동의하지 않음	의견 없음	약간 동의함	매우 동의함
01. 인적자원개발(HRD) 활동은 회사가 **사업 목표를 달성하도록** 도와야 한다.	1	2	3	4	5
02. 인적자원개발(HRD) 활동은 **사업 부흥과 변혁을 위한 조직 문화 변화** 활동에 참여해야 한다.	1	2	3	4	5
03. 인적자원개발(HRD) 활동은 **회사 운영 관련 쟁점 사항들**에 시간을 할애해야 한다.	1	2	3	4	5
04. 인적자원개발(HRD) 활동은 **사원들의 업무 관련 개인적 요구에 도움을 제공**하는 일을 해야 한다.	1	2	3	4	5

다음 쪽에 계속 됩니다 ➲

우리 회사가 업무를 효과적으로 수행하기 위한 역량을 증진시키기 위해	전혀 동의하지 않음	별로 동의하지 않음	의견 없음	약간 동의함	매우 동의함
05. 인적자원개발(HRD) 활동은 **사업 전략에 인적자원개발(HRD) 전략을 연결시키기** 위한 방법이나 프로그램을 개발하여야 한다.	1	2	3	4	5
06. 인적자원개발(HRD) 활동은 **조직 구조 설계** 활동에 참여해야 한다.	1	2	3	4	5
07. 인적자원개발(HRD) 활동은 **사원들의 업무 관련 요구 파악과 대처**에 시간을 할애해야 한다.	1	2	3	4	5
08. 인적자원개발(HRD) 활동은 **인적자원개발(HRD) 전략을 사업 전략에 맞춰 조정**하는 일을 해야 한다.	1	2	3	4	5
09. 인적자원개발(HRD) 활동은 **조직 변화를 돕기** 위한 방법이나 프로그램을 개발하여야 한다.	1	2	3	4	5
10. 인적자원개발(HRD) 활동은 회사가 **변화에 적응하도록** 도와야 한다.	1	2	3	4	5
11. 인적자원개발(HRD) 활동은 **전략 관련 쟁점 사항들**에 시간을 할애해야 한다.	1	2	3	4	5
12. 인적자원개발(HRD) 활동은 **조직 변화를 위한 활동들을 재구성**하는 일을 해야 한다.	1	2	3	4	5
13. 인적자원개발(HRD) 활동은 **문서와 업무를 효율적으로 처리하기** 위한 방법이나 프로그램을 개발하여야 한다.	1	2	3	4	5
14. 인적자원개발(HRD) 활동은 회사가 **운영상의 효율성을 증진시키도록** 도와야 한다.	1	2	3	4	5
15. 인적자원개발(HRD) 활동은 **사원들의 책임의식 증진** 활동에 참여해야 한다.	1	2	3	4	5
16. 인적자원개발(HRD) 활동은 **경영 과정을 모니터**하는 일을 해야 한다.	1	2	3	4	5
17. 인적자원개발(HRD) 활동은 **사원들의 업무 관련 개인적 요구를 관리하기** 위한 방법이나 프로그램을 개발하여야 한다.	1	2	3	4	5
18. 인적자원개발(HRD) 활동은 회사가 **사원들의 업무와 관련된 개인 개발에 관심을 갖도록** 도와야 한다.	1	2	3	4	5
19. 인적자원개발(HRD) 활동은 **사업 전략 수립** 활동에 참여해야 한다.	1	2	3	4	5
20. 인적자원개발(HRD) 활동은 **회사의 경쟁력 유지를 위한 새로운 활동 지원**에 시간을 할애해야 한다.	1	2	3	4	5

다음 쪽에 계속 됩니다 ➲

4. 일반 사항

응답 요령

- 이 부분은 오직 통계적인 처리를 위한 부분이므로 선생님의 **개인 사항은 절대 누설되지 않습니다**.
- 해당되는 ☐에 ✓표를 하시거나, _____ 부분에 직접 기재하여 주십시오.

4-1. 회사 관련 사항	4-2. 개인 관련 사항
1. 회사명 _____ 2. 주요 업종? ☐ 도·소매업 ☐ 제조업 ☐ 음식·숙박업 3. 종업원 수? _____ 명 4. 회사 내 인적자원개발(HRD) 담당 부서 유무? ☐ 있음 ☐ 없음	1. 나이? 만 _____ 세 2. 성별? ☐ 남 ☐ 녀 3. 현직장에서의 직장 경력? _____ 년 _____ 개월 4. 직급? ☐ 사원 ☐ 대리 ☐ 과장 ☐ 차장 ☐ 부장/실장 ☐ 이사 ☐ 기타 _____

☺ 정말 고맙습니다 ☺

APPENDIX D

FOLLOW-UP LETTER

JINCHUL JEONG
Department of Agricultural & Vocational Education, Seoul National Univ.
San 56-1 Shillim-dong Kwanak-gu, Seoul 151-742
☎ (017) 371-0898, ✉ vince2000@neo.tamu.edu, Fax 02-873-2042

≪Date≫

≪Full Name≫ ≪Title≫
≪Company≫ ≪Address≫ ≪City≫, ≪Province≫ ≪ZIP≫

Dear ≪Prefix≫ ≪Last Name≫:

About two weeks ago you should have received a copy of the enclosed "Organizational Learning Survey" questionnaire. The purpose of this questionnaire is to identify how corporations increase their capacity to take effective actions, what are the factors differentiate the ways of increasing capacity to take effective actions, and what are the roles of HRD in increasing capacity to take effective actions.

The response has been good. However, I haven't received replies from all of the corporations contacted. If you have already replied, discard this letter and the enclosed questionnaire. I truly thank you for your assistance in this study.

I completely understand that there are a lot of demands for your time. However, your participation is critical for the scientific validity of the results. I again ask that you take a few minutes and complete the questionnaire. The questionnaire is designed to be completed in less than 15 minutes.

Actually, there is no specific personal benefit to you from this study. However, this study will benefit your corporation by providing how your corporation increase its capacity to take effective actions, what are the factors in your corporation differentiate the ways of increasing capacity to take effective actions from other corporations, and what are the roles of HRD in your corporation in increasing capacity to take effective actions.

You may refuse to answer any questions that make you feel uncomfortable. However, no risks of physical, psychological, or social injury are anticipated to complete the questionnaire. Please take the time to complete the questionnaire. After completing the questionnaire, please return it by using the self-addressed, postage-paid envelope provided.

The questionnaire from you will be coded to ensure your responses are kept confidential and no personal information of you will be disclosed.

Thank you so much for your valuable time. Your efforts are greatly appreciated. I am looking forward to receiving your completed questionnaire within one week of receipt.

Sincerely,

Jinchul Jeong

설문조사 의뢰 서한 (2 차)

수신: ≪성명≫ ≪직위≫ 선생님
≪회사명≫
≪우편번호≫ ≪회사 주소≫

≪성명≫ ≪직위≫ 선생님께:

안녕하십니까?

저는 정진철이라고 합니다. 약 2 주 전에 제가 보내드린 "조직학습에 대한 설문지"를 받으셨을 것으로 믿습니다. 여러 모로 바쁘심에도 불구하고 이렇게 부탁을 드리게 되어 송구스럽습니다.

저는 현재 다음과 같은 사항을 밝혀 내기 위한 박사학위 논문을 쓰고 있습니다.

- 각 기업은 어떠한 방법을 통하여 조직의 학습 능력을 향상시키는가?
- 그러한 방법에 영향을 미치는 조직 내 변수들은 무엇인가?
- 조직의 학습 능력 향상을 위해 HRD 담당 부서에게 요구되는 일은 무엇인가?

지금까지의 설문지 회수율은 좋은 편입니다. 하지만 설문지를 발송한 모든 기업으로부터 회송을 받지는 못하였습니다. 선생님께서 이미 설문지를 회송하셨다면, 이 서한 그리고 동봉된 설문지를 폐기하여 주십시오. 선생님의 협조에 진심으로 감사드립니다.

이 연구를 통해 선생님 개인에게 돌아가는 혜택은 실질적으로 없습니다. 하지만 인사를 담당하고 계신 분으로서 선생님께서 몸 담고 계시는 회사에 대해 앞서 말씀 드린 세 가지 사항에 대한 정보를 제공함으로써 회사에 대한 이해를 넓히시는 데 큰 도움이 될 것으로 생각합니다. 연구가 종료된 이후에 선생님께 그 결과를 반드시 알려드릴 것을 약속 드립니다.

설문 문항 가운데 응답하고 싶지 않은 문항이 있다면 그 문항은 응답하지 않으셔도 됩니다. 하지만 선생님께서 응답해 주시는 문항 하나하나는 이 연구에 있어 너무도 소중합니다. 또한 응답하신 내용은 집단적으로 처리될 것이기 때문에 선생님 개인과 관련된 어떠한 사항도 누설되지 않을 것임을 굳게 약속 드립니다. 그러하오니 부디 시간을 내셔서 설문에 응답해 주실 것을 다시 한 번 간곡히 부탁 드립니다. 설문에 응답하는 데는 대략 15 분 정도가 소요될 것입니다.

응답하신 설문은 동봉된 봉투, 혹은 팩스 (02-873-2041)를 이용하여 일주일 이내로 반송하여 주시면 됩니다.

소중한 시간 내어 주심에 깊이 감사 드립니다. 모쪼록 선생님의 가정과 회사에 늘 행복과 평화가 함께 하시길 간절히 기원합니다.

감사합니다.

≪날짜≫

정 진 철 올림

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VITA

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EDUCATION

2004	Doctor of Philosophy, Educational Human Resource Development Texas A&M University, College Station, Texas
1999	Master of Education, Agricultural and Vocational Education Seoul National University, Seoul, Korea
1997	Bachelor of Science, Agricultural and Vocational Education Seoul National University, Seoul, Korea

PROFESSIONAL EXPERIENCE

2003/05 – 2003/10	Research Assistant, Korea Research Institute for Vocational Education and Training (KRIVET)
2002/05 – 2002/08	Research Assistant, KRIVET

PUBLICATION

Jeong, J., & Jyung, C. (1999). Perceptions of the high school teachers regarding key competencies needed for the workforce. *The Journal of Vocational Education Research*, *18*(1), 39-57.

Jyung, C., Lee, K., Choi, H., Jeong, J., & Go, J. (1999). Needs assessment on the adoption of an integrated high school system. *The Journal of Vocational Education Research*, *18*(2), 1-25.