A COMPARISON OF THE PRACTICES USED BY HUMAN RESOURCE DEVELOPMENT PROFESSIONALS TO EVALUATE WEB-BASED AND CLASSROOM-BASED TRAINING PROGRAMS WITHIN SEVEN KOREAN COMPANIES

DISSERTATION

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By

Younghiee Jessie Kong, M.A.

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Dissertation Committee: Dr. Ronald L. Jacobs, Adviser
Dr. Joshua D. Hawley
Dr. Joseph A. Gliem

Approved By: __________________________
Adviser
College of Education and Human Ecology
ABSTRACT

The purpose of the study was to compare the practices used by HRD professionals to evaluate web-based and classroom-based training programs within seven Korean companies. This study used four components of evaluation to examine how HRD professionals evaluated web-based and classroom-based training programs in their organizations and compared the differences between these training approaches. Also, this study identified the barriers that might prevent HRD professionals from evaluating web-based and classroom-based training programs and compared the differences between these training approaches with the evaluation barriers. Lastly, this study explored the key decision factors for determining how HRD professionals evaluated their web-based and classroom-based training programs.

Two data sets were used for the study. One set of data was gathered from a survey questionnaire distributed to all HRD professionals (N=147) who currently evaluated web-based and/or classroom-based training programs within the seven companies in Korea and the researcher assessed the entire population for the study. The total number of respondents was 73 out of 147 HRD professionals, with an overall response rate of 49.66%. The other was gathered from open-ended interviews with five current directors in the departments of HR or HRD within the seven companies. The data from the survey questionnaire were analyzed based on descriptive statistics and multiple regression
analysis to address the research questions. In addition, the data from the interviews were read, coded, and analyzed by the researcher to explore the research questions in more depth.

The results showed that web-based and classroom-based training programs were most frequently evaluated for the process evaluation component, followed by the input evaluation component. On the other hand, web-based and classroom-based training programs were least frequently evaluated for the organizational context evaluation component, followed by the output evaluation component. The results also showed that web-based and classroom-based training programs were meaningfully different on the process evaluation component, while these training approaches were not meaningfully different on the other types of component evaluation.

In addition, the results showed that the context and evaluation factors were the primary barriers preventing HRD professionals from evaluating web-based and classroom-based training programs. However, web-based and classroom-based training programs were not meaningfully different in the three factors of evaluation barriers.

Finally, the results of this study also found that the primary decision factors determining evaluation for web-based and classroom-based training programs were senior management’s needs, development of current and new training programs, different types of training programs, political issues for online courses, personnel benefits, and budgets for training programs. This study offered several implications for future research that will be important to the theory and practice of training evaluation in the HRD field.
VITA

1970…………………………………………………Born - Seoul, Korea

1995…………………………………………………B.A.s in Turkish & English
Han Kook University of Foreign
Studies, Seoul, Korea

1993-1995………………………………………….Instructor in Dae-Woo Group
Seoul, Korea

Seoul, Korea

1997-1999………………………………………….M.A. in Workforce Education and
Lifelong Learning
The Ohio State University

1999-2000…………………………………………..Software consultant in Nelson
Financial Group, Columbus, OH

2005-Present………………………………………..Graduate Administration Associate
The School of Physical Activity
and Educational Services
The Ohio State University

FIELDS OF STUDY

Major Field: Education

Human Resource Development              Ronald L. Jacobs, Ph.D.

Workforce Development and Educational Policy  Joshua D. Hawley, Ed.D.
PUBLICATIONS


Dedicated to my husband, Yeonbae Kong,
my lovely son, Joshua Junhyuk Kong
my mother and my sisters,
Kyungja Park, Eunsook Joo, and Sunhee Joo
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CHAPTER 1

INTRODUCTION

In today’s fast-moving business environment, organizations need to change rapidly in order to sustain competitive advantages. With this in mind, business leaders are significantly increasing their efforts to improve job performance and increase productivity in their organizations (Lim & Morris, 2006). Organizations consider human capital to be one of the most salient organizational assets in establishing and maintaining a competitive advantage and, thus, take human resource development (HRD) seriously as a key function to positively affect both the performance of the organization as well as the development of individuals (Jacobs, 1990; Smith, 1988).

Swanson and Holton III (2001) define HRD as “a process for developing and unleashing human expertise through organizational development (OD) and personnel training and development (TD) for the purpose of improving performance” (p.4). They propose that OD is a systematic process to implement organizational change, functioning primarily at the organizational level; on the other hand, TD is a systematic process to develop employees’ work-related knowledge and skills, primarily focusing on the individual level.

Training is a critical component of HRD, designed to maintain highly skilled employees (Bassi & Van Buren, 1998; Jacobs & Washington, 2003; Lim & Morris, 2006; Tan, Hall, & Boyce, 2003; Yamnill & McLean, 2001). Davis and Davis (1998) describe
training as “a process through which skills are developed, information is provided, and attributes are nurtured, in order to help individuals who work in organizations to become more effective and efficient in their work” (p.44).

Swanson and Dobbs (2006) argue that for the current and future state of training to be effective, both in theory and in practice, it is necessary to develop a clear classification to analyze commonalities and differences among various training approaches. Swanson and Holton III (2001) examined one way of classifying various training approaches by developing a continuum that divided approaches between the media-led and the instructor-led. All training approaches are likely to use media; the dividing point is whether the locus of delivery control is in the instructor or the media itself. In this manner, classroom-based training represents the instructor-led training approach in that the content is delivered face-to-face via the instructor. Web-based training (WBT) represents the media-led training approach in which content is delivered via the internet or intranet using a computer.

Since there has been a tremendous amount of investment in these training approaches in the workplace, organizations have shown a growing demand to determine whether they are effective or not. Evaluation is a necessary component in providing training that can help organizations increase performance outcomes (Holton III & Naquin, 2005). These authors see that the primary purpose of evaluation is to contribute to better decisions about the value of training investment. Lim and Morris (2006) also state that organizations seek to evaluate training programs in order to foster job performance improvement, facilitate development of individual and organizational effectiveness, and establish and maintain market share within a rapidly changing business environment. To enhance the utility of training evaluations, the HRD professionals must understand the
theories and practices that underlie HRD evaluation. Without this information, it is difficult to conduct the kind of high-quality evaluation that leads to effective solutions to training problems (Yamnill & McLean, 2001). Holton and Naquin (2005) reviewed the literature on decision theory within HRD evaluation and suggested that decision makers need to reexamine HRD evaluation through an organizational decision-making lens, understand the decision-making processes used for HRD interventions, and determine the best existing model or develop a new evaluation design that fits with certain situations and decision criteria in order to make HRD investment more effective (Holton & Naquin, 2005).

The systems model is one of the most commonly used approaches to HRD evaluation (Phillips, 1997). The system-based components of training evaluation consist of input, process, output, and organizational contexts that affect training. This view of training evaluation enables HRD professionals to see all the relevant elements separately, allowing them to evaluate training programs and how the elements bring together each component. In addition, it enables HRD professionals to examine the relationship among the four components within a system and with other systems in an entire system or an organization, allowing them to determine the value of each component and of the entire system (Jacobs, 2003).

In this model, there are more elements to take into account in evaluating WBT programs than in classroom-based training. For example, in the input evaluation of WBT programs, HRD professionals should consider evaluating such technology-related elements as network services, e-administration, Information and Communication Technology (ICT) tools, instructional software and websites, online experts, computers,
and so on. Trentin (2000) stresses that identifying and understanding the elements to evaluate is more complex in WBT than classroom-based training.

**Problem Statement**

Evaluation of web-based and classroom-based training should be considered and performed differently because the two approaches to training are entirely different from each other. For instance, WBT is delivered via the internet or intranet using a computer, while classroom-based training is delivered face-to-face via an instructor (Sitzmann, Kraiger, Stewart, & Wisher, 2004). In addition, WBT allows trainees to learn on their own pace at a convenient time and location (Kraiger, Stewart, & Wisher, 2004; Noe, 2005; Relan & Gillani, 1997; Welsh, Wanberg, Brown, & Simmering, 2003). On the other hand, classroom-based training is typically group-based requiring that trainees meet their instructor and peers at a fixed time and location (Relan & Gillani). Following these differences, researchers have suggested that the evaluation of WBT programs also needs to be approached differently from the evaluation of classroom-based training programs (Curnow & Archambault, 2005; Jung & Rha, 2003; Rodgers, 2006; Rumble, 2001; Whalen & Wright, 1999).

Previous researchers (Curtain, 2002; Jung & Rha, 2003; Rumble, 2001; Whalen & Wright, 1999) have found that there are more difficulties and challenges to evaluating WBT programs than classroom-based training, since technologies, and thus WBT structures, change at an exceptional pace. Consequently, it can be hard to thoroughly understand the range of different types and organizational settings in which WBT is delivered among organizations. In addition, evaluating WBT programs is more complex and is more labor-intensive than evaluating classroom-based training due to wide
variation of technical services, the use of various media, and lack of physical presence. For example, efficient course delivery time for WBT may be more difficult to evaluate than for classroom-based training, due to variations in the experience levels of learners with technology, the use of multimedia contents, and other situational variables such as technical problems (Welsh et al., 2002; Whalen & Wright).

However, despite calls for the evaluation of WBT programs to be conducted differently, there is limited information available on whether HRD professionals actually follow this suggestion in practice. In addition, research findings are unclear about whether the evaluations for web-based and classroom-based training programs are conducted appropriately and whether they each evaluate the requisite elements of the training programs.

ASTD (2000) suggested that evaluating WBT programs is not different from evaluating other training approaches, and current training evaluation techniques and processes can be applied to WBT. Responding to this view, Strother (2002) suggested that useful and sound comparative study about evaluating web-based and classroom-based training has been extremely limited over the years, since evaluating WBT programs has not being treated differently. Wisher and Olson (2003) also pointed out the lack of any empirical studies comparing the evaluation of WBT and classroom-based training programs. They reviewed over 500 articles published between 1996 and 2002 and found that most of these studies dealt with design issues or technology concerns rather than with strategies or tools for successful evaluation. Hence, due to an insufficient number of previous evaluation studies, they had difficulty to assess evaluation practices in their survey.
Similarly, Sitzman et al. (2006) conducted a meta-analysis from 1996 to 2005 to examine the training outcomes of WBT compared to classroom-based training. Specially, they examined the training and education literature for studies of adult populations learning work-related knowledge and skills. They reported that, out of 168 courses related to studies they were surveying, only 15% of the courses being studied were for employees, whereas 85% were for either undergraduates or graduates. They also identified only 12 studies that assessed procedural knowledge and even fewer studies assessed affective learning. Given that limited information, they stated that it was hard to state definitely whether WBT is more effective than classroom-based training, and they pointed out the especial lack of empirical data related to the cost effectiveness of WBT.

In fact, this scarcity of information about the evaluation on financial benefits of training, whether web-based or classroom-based training, is not surprising. Most evaluation activities in organizations are limited to simple learning tests or generalized feedback questions, for a number of reasons, including a lack of appropriate theoretical foundation for, organizational support for, and experience in evaluation on the part of those conducting it (Bober & Bartlett, 2004; Chen, Holton, III, & Bates, 2006; Curtain, 2002; Decker & Campbell, 1996; Eseryel, 2002; Holton & Naquin, 2005; Jung & Rha, 2003; Kraiger, 2002; Rumble, 2001; Saba, 2000; Wang, Zhengxia, & Li, 2002; Whalen & Wright, 1999).

If web-based training and classroom-based training approaches differ from each other in important ways, which have implications on how these training approaches should be evaluated, and if there is limited information on whether organizations actually differ in their evaluation practices related to these training approaches, then more should be known about how HRD professionals actually evaluate their web-based and
classroom-based training programs. Understanding the practices used by HRD professionals to evaluate different training approaches will help us to identify elements to evaluate that are missing from current practice, to examine enablers and disablers of the evaluation of these elements, and to conduct appropriate evaluations for them.

The purpose of the study is to compare the practices used by HRD professionals to evaluate web-based and classroom-based training programs within seven Korean companies. More specifically, this study uses the four components of evaluation (a) to examine how HRD professionals evaluate web-based and classroom-based training programs in their organizations, and (b) to compare the differences between these training approaches. Also, this study aims (c) to identify the barriers that might prevent HRD professionals from evaluating web-based and classroom-based training programs, and (d) to compare the differences between these training approaches with the evaluation barriers. Finally, this study examines the important decision factors that HRD professionals use to determine how to evaluate web-based and classroom-based training programs in their organizations.

Research Questions

The research questions to be examined in this study are as follows:

1. How do HRD professionals evaluate their web-based and classroom-based training programs for each evaluation component?

2. Are there differences between web-based and classroom-based training programs for each evaluation component?
3. What is the relationship between the demographic characteristics of HRD professionals and the practices used to evaluate web-based and classroom-based training programs for each evaluation component?

4. What barriers prevent HRD professionals from evaluating web-based and classroom-based training programs?

5. Are there differences in the barriers to evaluating web-based and classroom-based training programs?

6. What is the relationship between the demographic characteristics of HRD professionals and the barriers to evaluating web-based and classroom-based training programs?

7. What are the key decision factors for determining how HRD professionals evaluate their web-based and classroom-based training programs?

Definition of Terms

The major terms for this study are operationally defined as follows:

HRD professionals

HRD professionals are employees at any job level in a department of human resource development. In this study, the term refers to employees at any job level who are responsible for evaluating web-based and/or classroom-based training programs in their organizations.

Classroom-based training

Classroom-based training refers to the instructor-led training in which content is delivered face-to-face via the instructor.
Web-based training

Web-based training refers to the media-led training in which content is delivered via the internet or intranet using a computer.

Training evaluation

Training evaluation refers to the systematic process of collecting data to determine if training is effective (Noe, 2005).

Evaluation Practices

In this study, evaluation practices are evaluation activities performed by HRD professionals within their organizations that include the four components of evaluation and the barriers faced during the evaluation. The four components of evaluation include output, process, input, and organizational context in which training exists (Jacobs, 2003). Evaluation barriers consist of human factor, context factor, and evaluation factor (Alkin, 1985).

Limitations of the Study

1. The results of this study are geographically limited to the population of HRD professionals in South Korea.
2. The results of this study are limited to the perceptions of HR or HRD directors and professionals who evaluate web-based and/or classroom-based training programs.
3. The results of this study are limited to the instruments used.
4. This study gathers information at a single point in time.
5. The data for this study is all self-reported.
Significance of the Study

This study contributes to both the theory and practice of evaluation for training programs in the HRD field. Theoretically, while the evaluation of web-based training programs should be conducted differently from classroom-based training, there has been little empirical research that describes whether organizations actually differ in their evaluation practices related to these two training approaches. This study contributes to filling this gap in the HRD literature.

First, this study contributes to our understanding of the training evaluation practices used by Korean companies for web-based and classroom-based training programs. Second, this study contributes to our understanding of the relationship between evaluation and training design as well as evaluation and organizational contexts for web-based and classroom-based training programs in Korean companies. In this way, it will help Korean HRD researchers as well as international HRD researchers take a further step to establish the training evaluation theory that is still infancy in the HRD field.

Practically, the results of this study have three important implications for HRD professionals in evaluating their training programs. First, this study will help HRD professionals reflect on the adequacy of their current evaluation practices. It will allow them to take stock of what they currently do in their evaluation of their web-based or classroom-based training programs, and to examine whether they meet the basic requirements to successfully implement these training approaches.

Second, this study will help HRD professionals develop improved evaluation practices for both web-based training and classroom-based training programs. More specifically, they can improve their job competency by identifying requisite elements to evaluate, examining barriers to evaluate, and implementing an appropriate evaluation for
their web-based and classroom-based training programs. Third, this study will help HRD professionals understand how to use certain evaluation practices, such as cost-benefit analysis, with web-based which have previously been more associated with classroom-based training programs.
CHAPTER 2

REVIEW OF LITERATURE

This chapter is divided into four sections. The first section introduces the concept of the human resource development, with an explanation of its definitions and functions, and discusses systems theory as it has been applied to HRD. The second section examines the ADDIE process related to systematic training and types of training approaches, and compares the characteristics of web-based and classroom-based training. The third section discusses literature related to training evaluation, including studies of training evaluation models, current practices in the evaluation of training, comparisons of web-based and classroom-based training evaluation, and barriers to training evaluation. The fourth section presents the conceptual framework that will represent the relationships among the variables of the study.

Human Resource Development

_The Definitions of HRD_

The umbrella term human resources (HR) can be divided into two fields: human resource management (HRM) and human resource development (HRD) (Chalofsky, 1989; Swanson & Holton, 2002). Under this umbrella, HRD encompasses the sub-fields of organizational development, career development, and training and development, while
HRM includes hiring, compensation, and personnel compliance issues (Chalofsky; Jacobs, 1989; McLagan, 1983; Swanson & Holton).

HRD scholars propose a variety of definitions for the field. Swanson and Holton (2002) define HRD as a process for developing human expertise through organization development and individual training and development to improve performance. Similarly, Jacobs (2003) also defines HRD as a business process of improving organizational performance and individual learning through organization development, career development, and employee development.

Within these definitions, HRD scholarship emphasizes two main themes. First, HRD is viewed as a process of identifying and solving human performance problems to achieve organizational goals (Jacobs, 1989). Jacobs states that these problems occur, when there is a gap between a present state and a desired state, explaining that the problems can be solved and the desired states restored through achieving the goal and removing the performance problems.

From this problem-solving perspective, HRD is often considered as a system (Jacobs; Swanson & Holton, 2001). More specifically, HRD is viewed as a subsystem that functions within the larger host system of an organization. In this theory, HRD should engage with other subsystems – other departments or functions – within the organization to accomplish the host system’s goals and to avoid potential HRD-related barriers to organizational success along the way. This systems view will be discussed more fully in the next section.

The second main stated purpose of HRD is to improve individuals’ job performances. Rummler and Brache (1995) provide an integrated framework to understand the relationships among the variables that influence degrees of individual and
organizational performance. Taking a holistic view of an organization, they suggest that nine performance variables should be used as performance dimensions. The nine variables are produced by combining the three levels of performance (i.e., organization, process, and job/performer) with the three factors of performance needs (i.e., goals, design, and management) that determine individual effectiveness at each organizational level. Jacobs and Washington (2003) also propose a performance improvement approach to HRD, arguing that organizational performance is a product of a dynamic chain of performance outcomes. In this framework, employee development outcomes are linked to an individual’s job performance outcomes, and the individual’s job performance outcomes are linked to the business unit outcomes. From this perspective, they argue, learning or training alone does not always increase performance; it is only one of several possible interventions that could improve organizational performance.

Within this context, there is an ongoing debate about whether the purpose of HRD should be defined in terms of either performance or learning (Swanson & Holton, 2002). According to Swanson and Holton, some other HRD researchers take the view that that individual development and growth through learning improves organizational effectiveness; Bierema (1997) emphasizes the value of individual development in increasing the productivity of an organization, criticizing the term “performance” as illustrating a “machine mentality” in the organization. Dirk (1997) also suggests that learning leads individuals to enhance organizational effectiveness as well as to contribute to society’s overall level of economic competitiveness.

However, Swanson and Holton (2002, p.145) point out that whether the focus of HRD is defined in terms of learning or performance, both views hold the following concepts in common:
• a value for learning and development as avenues to individual growth
• the idea that organizations can be improved through learning and development activities
• a commitment to people and human potential
• a deep desire to see people grow as individuals
• a passion for learning

The Functions of HRD

Although everyone does not agree about the definitive boundaries of HRD within HR, most HRD scholars agree on the following as the three central components of HRD: organization development, career development, and training and development (Chalofsky, 1989; Jacobs, 1989; McLagan, 1983; Swanson & Holton, 2001). Swanson and Holton propose that there are two main functions in HRD. One is organization department (OD) and the other is personnel training and development (T&D). OD primarily focuses on the organization level and how it connects with individuals, while T&D primarily focuses on individuals and how they are connected with and to the organization. Career development (CD) is also another important component of HRD in improving individual and company performance.

Organization Development

Cummings and Worley (2005) define “organization development [as] a systemwide application and transfer of behavioral science knowledge to the planned development, improvement, and reinforcement of the strategies, structures, and processes that lead to organization effectiveness” (p.1). They provide five main concepts of OD; first, OD applies to changes in the strategy, structure, and/or processes of an organization, a department or work group, or an individual role or job. Through various OD programs,
top management teams interact through problem-solving processes within the group and solve the company’s problems in strategy and structure. Second, OD applies and transfers behavioral science-based knowledge and skills that includes both microconcepts such as leadership, group dynamics, and work design and macroconcepts such as strategy, organization design, and international relations. Third, OD involves in a process of planning and implementing changes in order to diagnose and solve organizational problems. OD plans can be frequently revised during the change process. Fourth, OD also concerns change on a long-term basis; that is, new activities are stabilized and institutionalized within the organization through OD. Finally, OD is designed to improve organizational effectiveness. OD is concerned with solving an organization’s problems and achieving its goals. It is associated both with high performance (e.g., financial returns and productivity) and with high quality of work life (e.g., motivation of effective employees who perform at high levels).

Swanson and Holton (2001) suggest that there are many different views of OD, since the contexts of the needs for system change vary greatly across different organizations. They state that OD is essentially a method for defining and solving problems related to the organization, and they introduce two popular models that are seen in many OD process models: action research and organization development for performance system (ODPS). Action research is used as a problem-solving method, and is the foundation for most OD interventions. Organization members and OD practitioners work collaboratively in small groups to collect data and diagnose problems prior to taking action, to revise and implement solutions, and finally to evaluate results after action is taken (Cummings & Worley, 2005). On the other hand, ODPS involves implementing a process of planned, systematic change to develop human expertise for
improving individual, group, process, and organization performance: (a) analyze and contract, (b) diagnose and generate feedback, (c) plan, design, and develop, (d) implement, and (e) evaluate and institutionalize (Lynham, 2000).

Training and Development

Watkins (1991) argues that

Since HRD engages in developing long-term, work-related learning patterns and outcomes at the individual, group, and organizational levels in organizations, HRD practitioners should work to enhance individuals’ capacity to learn, to help groups overcome barriers to learning, and to help organizations create a culture which promotes continuous learning. (p. 253)

To accomplish this task, HRD requires a strong investment in the functions of training and development.

Swanson and Holton (2001) define TD as a systematic process of developing employees’ job knowledge and skills for improving performance. They describe training as more focused on new employees and their acclimatization to new job roles, whereas development is focused on individual growth beyond current job requirements, with a long-term perspective. They state that TD more focuses on training than development. They also point out that TD has a five-phase process: analyze, design, develop, implement, and evaluate (ADDIE). This TD process, which is based on the ADDIE model, is rooted in the instructional systems development (ISD) model used by the US military. Generally, training systems follow the ADDIE process to help individuals prepare to meet their job performance requirements (Allen, 2006).

Jacobs and Washington (2003) use another term for TD: employee development. They explain, “employee development refers to an integrated set of planned programs, provided over a period of time, to help assure that all individuals have the competence necessary to perform to their fullest potential in support of the organization’s goals” (p.5).
They point out that employment development involves the learning of all employees in organization and can be delivered through such programs as off-the-job and on-the-job training programs, educational programs and seminars, job rotations, self-study materials, and mentoring programs. They argue that because HRD primarily relies on improving organizational performance through employee development, those efforts, in the end, increase productivity and profits of an organization as well as the job satisfaction of its individual employees.

Harrison (1992) also asserts that training and development provides learning experiences in the workplace in order that business goals can be achieved. She argues that training and development activities are aligned with the organization’s goals so that through enhancing the skills, knowledge, learning ability and motivation of employees, there will be continuous organizational as well as individual growth.

**Career Development**

Chalofsky (1989) states that career development services have emerged as part of HRD functions, beginning in the early seventies. In this era, firms sent recruiting counselors to schools in order to provide career guidance and counseling students. At the same time, they provided their employees with advice on how to pursue their career goals within the organization. They made efforts to select high-potential employees and to plan for the career progression of these employees, for the purpose of retaining and directing highly skilled employees as top management intended. Eventually, career counselors began to recognize the need for career development services for their employees and quickly integrated these services into the HRD function. Today, the number of career development professionals practicing in areas such as ASTD group continues to grow.
Gray and Herr (1998) state that career development services in a particular organization are shaped by organizational goals, employee needs, profit margins, or resources available to be committed to career services. The range of career services varies, but comprehensively, can include such services as support for external training, alcohol/drug counseling, retirement planning, support groups for minorities and women, job satisfaction counseling, career exploration, career ladders, teaching of advancement strategies, personal financial planning, and family/marital counseling.

They also point out that the career services are sometimes extended to provide “outplacement counseling”. Outplacement counseling is “a process of helping employees who are being terminated to find new employment, sharpen their job search and access skills, deal with the psychology of job loss, and make back to employment more successfully” (p. 286). However, they argue that most organizations primarily provide services that directly impact the functioning of their current workforce, such as training and alcohol/drug counseling, and only secondarily provide services that are related to employees’ personal career development.

*Systems Theory Applied to HRD*

Jacobs (1988, 1989) demonstrates that, on a practical level, HRD is designed to identify and solve immediate problems within an organization and that HRD professionals work as problem solvers. Thus, he argues, general systems theory is the most useful and effective approach to solve problems for the HRD profession.

General system theory (GST) was first explained by Bertalanffy (1962), who described intelligently its theory of inputs, process, outputs, and feedback. In his work on GST, Bertalanffy (1998) explains that people are forced to deal with complexities, using “wholes” or “systems”, in all fields of knowledge. General system properties, though,
appear to demonstrate structural similarities in widely different fields, even when observed independently or based on totally different facts. These general laws can help to analyze and solve problems in fields that are related by any type of system.

Swanson and Holton (2001) point out that this system view helps HRD professionals clearly understand the complex situations they face. That is, systems theory encompasses the inputs, process, and output of a system, as well as any observed feedback loop, and it accounts for how a system can be influenced by its larger surrounding systems or environments. Thus, this theory helps HRD professionals conceptualize structures called open systems, or systems that can be influenced by forces – political, economic, and cultural – external to the system.

Rummler and Brache (1995) also mention about the usefulness of this systems view for HRD. They see an organization through the systems view. They argue that the systems view of an organization (a) enables HRD professionals to see how work actually gets done, through processes that cut across functional boundaries, and (b) shows the internal customer-supplier relationships through which products and services are produced.

Jacobs (1989) explains this systems view in detail, suggesting that, “systems consist of many interacting subsystems, which are distinguished by boundaries that, in turn, monitor and control the rate and flow of inputs from the environment to the system and the outputs from the system to the environment” (p. 30). He also argues that a system not only functions independently but also interchangeably shares information with other systems to achieve those goals. To effectively design and manage any system, he suggests that HRD professionals should know the system’s components and how those components are related to each other functionally.
Basic systems theory allows HRD professionals to engage in systems thinking and analyze organizational systems and processes (Swanson & Holton, 2001). In systems thinking, HRD is itself considered both as a system and also as a subsystem that functions within its host or sponsoring organization. However, HRD is more often identified as a process than a system. This is because the subsystems are generally called processes and HRD is more frequently considered to be one of many subsystems within a larger organizational system, working together to achieve organizational goals (Swanson & Holton, 2001).

Jacobs (2003) provides us the following checklist for systems thinking:

System thinking is a way of seeing:

- wholes and parts at the same time
- patterns instead of instances
- relationships instead of things alone
- things which are not readily apparent
- the complex as simple, without losing the underlying complexity of the structures.

**Systematic Training**

**The ADDIE Process**

Organizations spend large amounts of money on training, as one of the key interventions to improve their employees’ performance and hence the firm’s productivity (Yamnill & McLean, 2001). Patrick (2000) describes training as the systematic development of the knowledge, skills, and expertise required by an individual to perform a given task or job effectively. Swanson and Dobbs (2006) argue that effective training needs to be systematic to improve individual and organizational performance. They
describe systematic training as the internal state of the training process; being systematic refers to carrying out the training using step-by-step procedures.

The most widely used methodology for developing systematic training programs is the analysis, design, develop, implement, and evaluate (ADDIE) model, rooted in instructional design theory (Allen, 2006). Instructional design has been driven from two main learning theories: cognitive learning theories and behavioral learning theories. These two learning theories are quite different from one another. While the behaviorist view concentrates on external environment as the principal determinant factor in learning behavior, the cognitivist view focuses on active mental processing on the part of learners (Schuell, 1986).

Though cognitivism is the predominant approach in the instructional design field (Mcgriff, 2001), Swanson and Holton (2001) assert that behaviorism and cognitivism have both played a key role in theories of training. They explain that behaviorists are primarily concerned with changes in behavior that are a result of learning. Such factors as stimuli, responses, feedback, support, and reinforcement in behaviorism play key roles in building motivation to learn. On the other hand, for cognitivists, the human mind is an information processor. The important mental processes move from short-term memory to long-term memory, and retrieving information from long-term memory.

Instructional systems design (ISD) is a systematic approach to designing and delivering instruction and instructional materials and activities to achieve specific learning objectives (Morrison, Ross, & Kemp, 2004). According to Mcgriff (2001), ISD models employ a systematic process in the creation of every training product, such as a workshop, a course, a curriculum, an instructional program, or a training session. As
stated above, the most common ISD model is the ADDIE model, which stands for analysis, design, develop, implement, and evaluate.

The analysis stage involves conducting a needs assessment to identify any gaps between desired outcomes and current outcomes and to determine specific training needs. This initial stage of the design phase is concerned with subject matter analysis, lesson planning, and media selection. In the development phase, the learning materials are created and these materials are delivered to learners in the implementation phase. Then training is evaluated to determine whether the goals set in the needs assessment are being met.

Despite its widespread use, there had much debate over the appropriateness and effectiveness of traditional ADDIE model. The most common criticism of ADDIE was that it was too linear of a process to implement flexibly (Morrison et al., 2004). The traditional ADDIE model was inappropriate and unwieldy to deal effectively with today’s fast moving changes in instructional environments, and also with complex job requirements, new instructional technologies, emerging automated instructional design tools, and other changes (Smith & Ragan, 2005). To handle these challenges, then, a revised ADDIE process was required to develop, update, and revise instruction concerned with complex technological media (e.g., computer hardware and software, video, interactive systems), cognitive learning theory, and vastly complex content areas (Allen, 2006). Especially due to rapid development of technology, the ADDIE process should be redesigned to fit into new delivery methods such as web-based training.

Eventually, several instructional design models have emerged to emphasize a cyclic, iterative process to developing training programs and materials (Kruse, 2004). The revised ADDIE models represent a continuous cycle that requires constant planning,
design, development and assessment to insure effective instruction (Morrison et al, 2004). Allen (2006) suggests that the revised models should include the following components and guidelines (p. 438):

- Evaluation is the “centerpiece” of the ADDIE process;
- ADDIE is a continuous process with the flexibility to enter and reenter the various phases, as necessary, to develop, update, or revise instruction;
- All ADDIE activities take place within and are dependent on the system functions;
- Teamwork is required between personnel performing system functions and those designing, developing, and implementing instructional systems;
- All ADDIE activities and system functions focus on continuous quality improvements of the overall system.

*Types of Training Approaches*

Bartley and Golek (2004) comment that since today’s organizations conduct various styles of training programs, such as classroom-based training, computer-based training, web-based training, one-on-one study, self-study guides, and so forth, they should determine the best training approaches for their employees in the wide variety of training approaches. To do this, Swanson and Dobbs (2006) assert that training approaches require clear classification that would allow HRD professionals to systematically analyze commonalities and differences among various training approaches.

There are many ways to classify different kinds of training. Swanson and Dobbs (2006) divide training into two approaches, structured and unstructured, as one of the dimensions in their framework to engage in this analysis. Structured training is planned, and unstructured training has no plan. Structured training includes external off-the-shelf
training and e-learning. Unstructured training includes such methods as action learning, informal learning, and organizational learning. In another way of classifying various training approaches, Swanson and Holton III (2001) developed a continuum that divided approaches from the media-led to the instructor-led. While nearly all training approaches are likely to use media, but the dividing point is whether the locus of delivery control is in the instructor or the media itself.

Instructor-led approaches include the use of off-site classrooms, on-site classrooms, structured on-the-job training, and learning teams. Media-led approaches include interactive videos, computer-based training/performance support, and programmed instruction/job aid. In this manner, classroom-based training reflects an instructor-led approach in that the content is delivered face-to-face via the instructor. Web-based training (WBT), sometimes referred to as online learning, represents a media-led approach, as content is delivered via the internet or intranet using a computer.

Web-based Training

In addition to heightening the importance of training, the rapid advancement in the capabilities and distribution of technologies and computers have changed methods of training and caused the development of web-based training (WBT). The use of online learning is one of the major trends in the field of HRD (Bassi, Benson, & Cheney, 1996; Bassi & Van Buren, 1998). WBT has increased based upon the belief that investing in it has the potential to reduce training time and cost, increase the volume of trainees, and in the end be more effective in improving employees’ job performance than traditional methods.

Bernadez (2003) stresses that online learning provides an organization with training efficiency by providing training any time and anywhere and saving on direct (e.g.
instructors, printed materials, training facilities) and indirect (e.g. travel time, lodging and travel expense, workforce downtimes) expenditures. In addition, the European Commission (2003) reports that, given the rapidly changing global business environment, WBT increasingly contributes to organizational efforts to improve job performance through providing just-in-time training and support.

Many researchers (Bartley & Golek, 2004; Bonk, Hansen, Grabner-Hagen, Lazar, & Mirabelli, 1998; Noe, 2005; Rosenberg, 2002; Toffler, 2003; Welsh et al., 2003) describe WBT as learner-centered training, conducted through the Internet, using a variety of educational media such as texts, pictures, animations, audio clips, and videos. Learners are able to select learning activities and a favorite media format according to their own preference and learning styles.

In addition, a learner interacts with his/her instructor and peers in both synchronous and asynchronous ways. In a synchronous way, an instructor and learners can log in and communicate at the same time through synchronous communication tools such as video conferencing, web casting, live-chat room and so on. In an asynchronous way, they can communicate at any time through asynchronous communication tools such as discussion boards, forum, email, and so on.

Major advantages of WBT include the ability to deliver consistent instruction to geographically dispersed learners, reduce delivery cycle time, provide learners with the ability to adapt instruction to their own learning styles and preferences, provide learners with the opportunity to collaborate and share information with peers and subject matter experts, offer links to other learning resources including course materials and web sites, and improve tracking of learning progress (Noe, 2005; Welsh et al, 2003).
On the contrary, major disadvantages of WBT can include high development costs, ineffectiveness for certain training content areas, such as interpersonal skills, that require subtle behavioral cues or cognitive processes, learner anxiety over using technology, and a lack of agreement on effectiveness compared to other training approaches such as classroom-based training (Noe, 2005).

*Classroom-based Training*

Classroom-based training is one of the best training methods for teaching problem-solving skills, since learners can directly exchange information with each other and can communicate directly with an instructor and peers (Kapp & McKeague, 2002). Typically, the amount of learning that takes place in a classroom depends on class size, time restrictions, classroom conditions, and lesson content (Davies & Mendenhall, 1998). In most cases, the instructor delivers authentic content in the form of lectures, presentations, or demonstrations in a large classroom (Huddleston & Unwin, 1997; Holmes & Abington-Cooper, 2000). However, he or she can also deliver instructions in other forms, such as small labs or discussion groups, consisting of several individuals and a facilitator (Davies & Mendenhall, 1998).

The instructor plays a key role as mediator or facilitator in this environment (Nash, 2005). The instructor needs to consider how to deliver the contents, how to help learners engage with instructional materials, and how to get learners to participate in learning in both formal and informal ways (Smith, Sheppard, Johnson, & Johnson, 2005). In addition, the instructor should generally conduct ongoing needs assessments to ensure the relevance of discussions and content, identify the needs of the learners, and facilitate collaborative group work effectively (Nash, 2005).
The main advantage of a classroom-based training approach is direct contact between instructor and learners (Davies & Mendenhall, 1998; Nash, 2005). First, an instructor is able to deliberately select the most appropriate teaching techniques, based on the size and needs of the class, to gain attention, motivate learners, and direct the learning in class. Second, he/she is able to directly use a variety of pre-instructional activities to organize and introduce the learning in class, based on the needs of the learners. Third, he/she is able to adjust the instructional contents and materials to meet the immediate needs of the learners. Finally, the instructor is able to communicate with learners face to face and allow them to share their experience with peers and learn from each other.

However, there are also several disadvantages to classroom-based training. First, time is constrained. Because limited time is allocated to the class, learners must compete for time in class to clarify concepts and to share and discuss their ideas and experience with the instructor (Meyer, 2003). Second, lecture is the most-utilized teaching technique in a large classroom. Instruction in a large classroom depends heavily on the instructor, but the problem here is that not all instructors are good lecturers (Davies & Mendenhall, 1998). In addition, the lecture structure reduces the quality of learner participation in class. Learners are more likely to focus on catching every single word from an instructor, rather than on participating in a discussion (Jacobsen, Wijngaards, Kremer, Shaw, & Gaines, 1999).

Additionally, other disadvantages of classroom-based training include the potential difficulty of finding an appropriate level of instruction for every learner of the class simultaneously, lack of instructional consistency, delays in new-hire training that can arise from scheduling difficulties, the difficulty of tracking learner performance in
the classroom, and, sometimes, expensive or ineffective generalized approaches to meet site-specific needs (Kapp & McKeague, 2002).

A Comparison of the Characteristics of WBT vs. Classroom-Based Training based on a Constructivist Approach

As instructional systems are developed, using methodologies including the standard or revised ADDIE models, one of the most important design decisions in today’s technology-driven business community will be whether the training should take place online or in a traditional classroom. Since learning environments between web-based and classroom-based training programs are different, it is necessary to assess and compare the characteristics of web-based and classroom-based training before instructional systems for these training approaches are designed and developed.

Many researchers (Bartely & Golek, 2004; Clark, 1994; Garrison, & Vayghan, 2008) assert that the design and development for web-based and classroom-based training should be embedded within sound learning theories. Constructivism and Vygotsky’s social cognition (1978) provide sound learning and teaching principles and activities to construct effective knowledge and learning environment. Table 2.1 compares the characteristics of WBT and classroom-based training based on a constructivist approach. As shown Table 2.1, the main pedagogical differences between these training approaches are classified within the categories of learner-centered, knowledge-centered, community-centered, assessment-centered, technology-enhanced, and the role of instructor as a guide.

Learner-centered

Effective environment considers learner-centered training that gives learners control. Learners can control the instruction to their own learning style and choose the appropriate learning activity for them (Noe, 2005). Accordingly, instructional design and
development for web-based and classroom-based training should be flexible and create environments that enable greater choice for learners.

In addition, Garrison and Vayghan (2008) state that learners bring to the learning context and thus cultural diversity should be awarded in class. Thus, instructional design and development for the training should consider diverse learning and teaching activities that discover and accommodate individual preconceptions and cultural perspectives.

Under this category, the uniqueness of web-based and classroom-based training program can be assessed in three aspects: time and location, learner choices for content, and learner control. First, for training location and time, WBT can occur anytime and anyplace. Learners are able to complete their instructional activities in a classroom, from home, or in the workplace, based on their own schedules. They can access their courses through the internet in various offices, metropolitan areas, and countries, wherever they are at any given time (Noe, 2005; Relan & Gillani, 1997). On the contrary, classroom-based training occurs at a fixed time and space. Physical spaces such as classrooms, labs, or even playgrounds and field trips are designated for learners to complete their classes (Relan & Gillani). Also, a fixed, limited amount of time is allocated to the class for training (Meyer, 2003).

Second, regarding learners’ choices for content, WBT provides diverse online resources of content such as websites, digital libraries, e-modules, and software as well as a variety of multi media such as text, video, graphics, and animations (Noe, 2005; Welsh et al., 2003) and thus learners can choose the appropriate learning materials and activities on their own preference. On the other hand, classroom-based training typically provides printed learning materials, such as textbooks, workbooks, course packets, and handouts
(Relan & Gillani, 1997). In some cases, instructional software and online resources (e.g., Powerpoints, overheads, computer w/ internet access, etc.) are also used in the classroom.

Third, in terms of learner control, WBT allows learners not only to control the sequence and pace of their own learning (Davies & Mendenhall, 1998; Noe, 2005) but also select content, time, resources, and feedback as well as instructional media (Driscoll, 1998; Noe; Relan & Gillani, 1997). On the other hand, classroom-based training typically involves a fairly inflexible format with an instructor and learners, supported by textbooks and workbooks; learners work either as individuals or in groups though they are moderately flexible in deciding when and how to complete assignments predetermined by instructors (Relan & Gillani).

Knowledge-centered

Reflective thinking and collaboration are critical factors to construct meaning in the learning and teaching process (Bransford et al., 1999; Garrison & Vayghan, 2008). Garrison and Vayghan (2008) assert that effective learning environment allows learners to become self-directed and reflect what they have learned on their own thinking. They also mention that effective learning environment allows learners to construct their knowledge through collaborative inquiry process with their instructors and peers; learners can support and challenge each other to construct meaning and establish shared instructional goals and learning outcomes.

Thus, learners should have opportunity not only to construct meaning personally by exploring questions and ideas on their learning tasks, but also to test and confirm the instructional information collaboratively by sharing their experience and thoughts in a community of learners (Bransford et al., 1999; Garrison & Vayghan, 2008; McPeck, 1990).
WBT increases critical reflection on learning tasks and activities through asynchronous text-based communication. Abrams (2005) describes asynchronous written communication as “an effective tool for promoting critical thinking through collaborative work (p.38)”. Asynchronous written communication can allow more time for thoughtful reflection and participation by more learners (Parker & Rossner-Merrill, 1998). However, since WBT tends to be self-directed focusing on more individuals rather than group, it is less likely to maintain coherence in online discussions and provide collaborative communication for knowledge sharing in a community of learners than classroom-based training (Garrison & Vayghan, 2008).

On the other hand, classroom-based training is group-based that directly allows learners to communicate their instructor and learners. Since learners meet face to face with their instructor and peers, they engage in more inquiry process that is essential to increase responsibility for their learning (Garrison and Vayghan, 2008). However, Garrison and Vayghan (2008) mention that classroom-based training has limitation to provide learners with reflective thinking about their learning action and collaborative communication with their instructor and peers due to time constraints in the classroom. In addition, it is hard to consistently keep all the facts and ideas current as compared to WBT that keeps a permanent record of what learners reflect on.

Community-centered

Vygotsky (1978) assert that collaborative activities are a mean to promote knowledge construction. Peer to peer interaction is important to investigate and develop multiple perspectives of learners. Learners can learn only when their knowledge is challenged and supported through their interaction with peers. Slavin (1995) also stresses that peer to peer interaction formally and informally develops cognitive learning tasks.
through shared knowledge with peers, and increases critical interpersonal skills as well as completion rate for training.

Accordingly, Garrison and Vayghan (2008) mention that instructional design for web-based and classroom-based training needs to create a climate of trust and open communication to support peer to peer interaction. For example, it can provide learners with ice-breaker activities at the early stages of instruction and with small group discussions and activities during instruction.

Learners in the online learning environment communicate with their instructor, peers, experts, and contents in either a synchronous or asynchronous manner in order to share their experiences and ideas and understand the instructional information (Garrison & Vayghan, 2008). Synchronous communication includes web casting, live audio- or video-conferencing, internet telephony, or two-way live satellite broadcasts. Asynchronous communication includes forums, online bulletin boards, online discussion groups or e-mail (Noe, 2005; Sitzmann et al.; Welsh et al., 2003). Since WBT is dominant to text-based communication (Garrison & Vayghan), it is effective to increase reflective thinking, but hard to create emotional support such as instructor’s expression, oral explanation (Yang & Liu, 2004) or “hands-on” skill experiences (Ali, 2005).

On the other hand, learners in the classroom environment communicate face-to-face with their instructor and peers in class. Thus, they can directly collaborate and share information to understand the same knowledge with different cultural backgrounds (Sitzman et al, 2006). Garrison and Vayghan (2008) point out that classroom-based training is more likely to establish a climate of trust and open communication than web-based training to support collaborative learning, specially, in the early stages of instruction; it gives a stronger sense of belongs in a community that allows learners to
actively engage in group discussions to share their thoughts and experiences. However, time constraints in a classroom provide learners little opportunity to share their experiences and information with their instructor and peers. Furthermore, learners are reluctant to directly critique their peers in a classroom, while they feel more comfortable to critique anonymous participants in online (Garrison & Vayghan).

Assessment-centered

Assessment-centered training is also critical for effective knowledge construction. Assessment can be divided into ongoing formative assessment and summative evaluation (Kraiger, 2002). First, ongoing formative assessment allows us to diagnose trainees’ misunderstanding and misconception, identify the diverse needs of learners, and monitor and track their learning progress during training (Buchanan, 1999; Garrison & Vayghan, 2008). Second, summative evaluation allows us to assess learner performance, judges training achievement, and finally determine the effectiveness of training after completed training (Kraiger; Noe, 2005).

In terms of ongoing formative assessment, instructional design for web-based and classroom-based training needs to provide immediate and accurate feedback. It also needs to provide collaborative assessment activities that are based on peer reviews. Additionally, it needs to encourage learners to assess their own learning reflectively (Garrison & Vayghan, 2008).

WBT uses online assessment tools exclusively to measure some part of evaluation of WBT (Bransford et al.,1999). For example, online computer-marked assessment extends beyond quizzes to simulation exercises, virtual labs, and other automated assessments of active learning. As another example, learner agents who facilitate and monitor peer activities allow learners to assess and aid each other.
informally. In addition to these assessment tools, trainees’ learning progress can be monitored through a learning management system. WBT enables instructors to monitor what’s going on in class and keep a record of what has been posted that is available to instructors as well as learners (Noe, 2005; Welsh et al, 2003).

Conversely, it is difficult to monitor and track trainees’ learning progress in the classroom setting and no one except the instructor knows what’s going on in class (Kapp & McKeague, 2002). However, a benefit of classroom-based training is that it allows an instructor to conduct ongoing needs assessments, in an informal manner, to meet the immediate needs of learners (Nash, 2005).

Technology-enhanced

Eastmond (1998) mentions that by using today’s technology, we can create many instructional strategies and activities to construct effective knowledge. For example, a wide array of software, multimedia, and other technologies can be used for cognitive learning tasks and activities (Johnson, 1998). In addition, various ICT tools can be used to exchange information among learners in their own time and place (Burge, 1994).

Unsurprisingly, technology plays a very important part in WBT. Learning management systems are used in an online environment to automate administrative functions such as course enrollment, monitoring, progress, and assessment (Noe, 2005). In addition, WBT requires a lot of technological resources to run the course itself, such as network services, computers, software and online learning materials, and online communication tools for instruction. In fact, the most obvious impediment to learning online is the heightened technology requirements: software, hardware, and bandwidth. Thus, continuous technical support is needed to ensure all technology used is accessible and usable for efficient instruction (Mitchell, 2003; Hofmann, 2003). Meanwhile, in a
classroom environment, some technology, such as powerpoint presentations, overheads, and educational websites, can be also used to deliver content.

Instructor as a guide

Lastly, Vygotsky (1978) emphasizes the importance of guided activities. He points out that an instructor plays a critical role as a guide and facilitator to construct learners’ knowledge effectively; He/she needs to provide immediate and consistent feedback, create a sense of engagement, and motivate group collaboration.

In the online learning environment, the instructor becomes a guide and facilitator instead of a direct transmitter of knowledge. The instructor’s function is a particularly important in WBT, since electronic communication requires more individual consultation and consumes a great deal of time between the instructor and his/her learners, in order to clarify and solve problems (Arbaugh & Duray, 2002). Ideally, the online instructor should be responsible for these interactions, personally answering every inquiry, comment, or discussion with immediate feedback (Twigg, 2003), and should make sure of the equal participation of the learners in online courses for effective instruction (Bonk, Hansen, Grabner-Hagen, Lazar, & Mirabelli, 1998).

On the other hand, the instructor plays a different and more dominant role in a large-sized classroom environment, controlling the information that is to be transmitted to the learners, usually in the form of lectures, presentations, or demonstrations (Holmes & Abington-Cooper, 2000; Huddleston & Unwin, 1997). However, the instructor can also function as a mediator or facilitator in a small-sized classroom environment, where he/she focuses more on the discovery and presentation of outside information, group discussion, and ongoing needs assessments, in order to ensure relevance of discussions and content and to provide for the immediate needs of the learners (Nash, 2005).
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<tr>
<th>Characteristics</th>
<th>Web-based Training</th>
<th>Classroom-based Training</th>
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<tbody>
<tr>
<td>Description</td>
<td>WBT is defined as self-paced training where the course is delivered via the internet or intranet using the computer (Sitzmann et al., 2006; Rosenberg, 2001; Kahn, 1997).</td>
<td>Classroom training is defined as typically group-based training where the course is delivered face-to-face via an instructor at a fixed time and space (Sitzmann, et al., 2006).</td>
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<tr>
<td>Learner-centered</td>
<td>Flexible time and place</td>
<td>Fixed time and place</td>
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<td>Learner choices for content</td>
<td>Diverse online resources of content</td>
<td>Typically, printed learning materials taught with some use of technology</td>
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<td>Learner control</td>
<td>Very flexible</td>
<td>Moderately flexible</td>
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<td>Knowledge-centered</td>
<td>More reflective</td>
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<td>Community-centered</td>
<td>Synchronous or Asynchronous communication</td>
<td>Synchronous communication</td>
</tr>
<tr>
<td></td>
<td>Thoughtful reflection</td>
<td>Strong coherence in discussion</td>
</tr>
<tr>
<td></td>
<td>Lack of coherence in discussion</td>
<td>Lack of communication and criticism</td>
</tr>
<tr>
<td></td>
<td>Lack of emotional support</td>
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</tbody>
</table>

(Table continues)

Table 2.1: A Comparison of the Characteristics of WBT and Classroom-based Training
### Table 2.1. (continued)

<table>
<thead>
<tr>
<th>Assessment-centered</th>
<th>Using online assessment tools</th>
<th>Direct ongoing needs assessments conducted in an informal manner</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Easy to tracking of learning progress</td>
<td>More difficulty in tracking learning progress</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technology-enhanced</th>
<th>Learning management system for monitoring enrollment, progress, and assessment</th>
<th>Powerpoints, overheads, computer w/ internet access, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hardware</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Network service</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Software &amp; online learning materials</td>
<td></td>
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<tr>
<td></td>
<td>Online communication tools</td>
<td></td>
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<tr>
<td></td>
<td>Technical support for development and maintenance of online courses.</td>
<td></td>
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</tbody>
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<table>
<thead>
<tr>
<th>Instructor as a guide</th>
<th>Facilitator/coach/mentor</th>
<th>Transmitter of authentic contents or mediator/facilitator</th>
</tr>
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</table>

### Training Evaluation

Many organizations make strategic investments in training to improve their performance in today’s competitive environment, so training evaluation plays a critical role in making judgment about the value of investing in specific training programs. Alvarez, Salas, and Garofano (2003) distinguish training evaluation from training
effectiveness, explaining that training evaluation is a methodological approach, measuring whether trainees have achieved learning outcomes, and training effectiveness is a theoretical approach for understanding why training did or did not achieve its intended outcomes. Thus, deciding what evaluation measurement to use is an important part of the process of evaluating the effectiveness of training.

Kraiger (2002) suggests three primary reasons to evaluate training programs: decision-making, feedback, and marketing. The first purpose for conducting evaluation is to provide input for making decisions about training programs, such as course retention, course revision, or personnel decisions (e.g., quality of instructor). The second purpose for evaluation is to provide feedback to course designers, trainers, or the trainees themselves that would allow them to design or engage with the course more effectively. The final purpose for collecting training evaluation data is for the purpose of marketing the training programs (e.g. demonstrating the value of training to upper management or helping future sponsors or trainees understand the beneficial changes initiated through training).

In line with these purposes for training evaluation, Eseryel (2002) points out that training evaluation is critical to providing useful information to multiple stakeholder groups. Since various stakeholders are affected by the program being evaluated as well as by the evaluation results, the evaluation activities should be implemented at multiple levels, which differ for the various stakeholders, to correspond with the multiple goals and beneficiaries of a training program. Thus, training evaluation requires collaborative work with training designers, training managers, trainers, trainees, managers, and possibly others.
Training Evaluation Models

On reviewing the work on training evaluation in HRD literature, four types of evaluations emerge as particularly common in organizations: Kirkpatrick’s four-level framework, Philips’ five-level framework, Holton’s model, and the systems-based model.

Kirkpatrick’s Four-Level Framework

Kirkpatrick’s evaluation is not only the simplest practical framework for understanding training evaluation but also contains the most routinely-used criteria for measuring training outcomes in organizations. Many of the other evaluation models found in the literature are designed and revised based on Kirkpatrick’s framework (Russ-Eft & Preskill, 2001).

The Kirkpatrick framework consists of a series of four levels: reaction, learning, behavior, and results (1998). In this model, reactions refer to trainees’ levels of satisfaction, measured via surveys or interviews designed to identify their perceptions of the training program. Reaction is measured during or immediately after training. The next level of evaluation, learning refers to the extent of trainees’ changes in knowledge, skills, and attitudes. Learning is measured before and after training through various methods.

The next level of evaluation is behavior. Behavior refers to the extent of trainees’ behavior changes in transferring knowledge, skills, and attitudes to their jobs. Behavior is measured after training. The final level of evaluation is the result. A result refers to organizational results or changes because of enhanced behaviors. In Kirkpatrick’s framework, reactions to training are related to learning, learning is related to behavior, and behavior is related to results.

Perhaps unsurprisingly, while Kirkpatrick’s framework is the oldest and most widely known basis for evaluation criteria in organizations, it has been routinely
criticized or revised in the HRD literature. For example, Alliger and Janak (1989) question its hierarchical evaluation approach. According to their critiques, reactions to training should be viewed as unrelated to learning, and learning can have a direct influence on results criteria as opposed to only indirect influence through behavioral change. In addition, Holton (1996) argues that Kirkpatrick’s evaluation is nothing more than a taxonomy of outcomes. He removes reactions from the level of primary outcomes of training and defines it as a moderating variable between trainees’ motivation to learn and their actual learning. In addition, he states that learning is related to transfer and transfer is related to results.

*The Philips’ Five-Level Framework*

Phillips (1997) has added a fifth level, called return on investment (ROI), to Kirkpatrick’s four-level evaluation. His model, then, is composed of reactions, learning, behavior, results, and ROI. ROI focuses on comparing a training program’s benefits to its costs, by isolating the effects of the program and converting the data into monetary values. He offers a systematic, step-by-step approach to measure ROI, as follows (2003).

The first step is evaluation planning. During this step, the data collection plan, the ROI analysis plan, and the program plan should be developed. The second step is collecting data at the four levels already set out by the Kirkpatrick model. In this step, it is important to evaluate the other four levels for ROI evaluation because of the way they are linked together. As discussed above, a chain of impact occurs through the levels, as the skills and knowledge learned (Level 2) are applied on the job (Level 3) to produce an overall business impact (Level 4). The third step is data analysis. In this step, five elements should be considered: (a) isolating the specific effects of training, (b) converting data to monetary benefits, (d) tabulating training costs, (e) calculating the ROI, and (f)
identifying intangible benefits. The final step is reporting. In this step, it is important to communicate the results to the appropriate audiences. Communication is very critical component in making improvements based on the evaluation and showing accountability within the training programs themselves.

Return on Investment (ROI)

Since investment in training in the workplace has been rapidly increasing, HRD departments and HRD professionals are increasingly being asked to justify whether training is a worthwhile investment. Upper management requires that training be justified in particularly in financial terms, which clearly quantify the proposed benefits of the programs (Decker & Campbell, 1996). They want to know the actual cost of training and whether its cost is justifiable and all the associated benefits are equitable for all stakeholders within an organization (Bartley & Golek, 2004). The results of the ROI can guide individuals who make decisions about renewing, expanding, canceling, downsizing, or changing the training program being evaluated (Bartley & Goleck; Decker & Campbell; Wentling & Park, 2002; Whalen & Wright; 1999). Thus, data on costs, benefits, and ROI become key factors in measuring financial benefits and in marketing the program to new clients (Martin & Lomperis, 2002).

Measuring costs of training. Calculating the full cost of training is both a first and critical step in determining ROI and an important element in planning and controlling the training budgets. By analyzing a program financially, decision-makers are better able to find out how much something actually costs, set a budget, determine a price, and compare the costs of different options (Decker & Campbell, 1996; Rumble, 2001).

Costs are estimated using common accounting methods. Based on the literature of cost analysis for training programs, costs can be measured in different ways. For example,
Jacobs (2005) suggests dividing the costs of training into nine categories: work analysis, training development, trainer, consultant, material, training evaluation, trainer backfill, trainees’ time, and performance follow-up. On the other hand, Decker and Campbell (1996) divide the costs into direct and indirect costs. Direct costs include personnel costs, fees for external training services, training development and instructional materials preparation costs, costs of instructional materials, equipment costs, facilities costs, and travel and per diem costs. Indirect costs include overhead and general & administrative (G&A) costs.

Measuring the ROI of training. The most common method to measure ROI involves performing a cost-benefit analysis (CBA) of training. After calculating the costs of training, the benefits are estimated. Although few examples of CBA for training are available, the most common standard for measure is ROI, which illustrates the resultant economic gain or loss from having undertaken a program (Bartely & Golek, 2004; Whalen & Wright, 1999).

Martin and Lomperis (2002) point out that a CBA is necessary to determine whether the financial benefits of training outweigh the costs. They offer several examples in order to pose questions related this issue. For example, does the employee who completes training decrease the work-related accident rate? If so, has the decreased accident rate led to increased productivity because of decreased employee and equipment downtime or employee absenteeism due to illness? And do these financial benefits exceed the costs of providing training? The formula for calculating a CBA is: total benefits – training costs = net benefit of program (Decker & Campbell, 1996; Wentling & Park, 2002). For example, if salespeople who have taken a course have increased sales by
$15,000 annually, and the training program costs $5,000, the net benefit to the company is $10,000 ($15,000 - $5,000 = $10,000).

Measuring the ROI for a training program enables companies to compare the benefits of the program with the benefits of other potential investments. For example, would producing a new sales brochure have been more profitable than investing in additional training for salespeople? Would providing classroom-based training have been more cost-benefits than WBT? The formula for calculating ROI is: (net benefits/ costs) x 100 = return on investment in program (Decker & Campbell, 1996; Whalen & Wright, 1999). For the training program discussed above, dividing the benefit ($10,000) by the cost ($5,000), and then multiplying by 100 to yield a percentage, equals 200%. In this example, the training program represents an increase in ROI of 200%. This return can now be compared with the potential return on other interventions of the same investments.

Problems in ROI measurements. Existing methods for calculating ROI are inadequate to meet the needs of HRD practices. The first problem is related to cost (i.e. monetary value). For most organizational activities, the detailed data needed to calculate a realistic and accurate ROI either do not exist or are unavailable and would be expensive to generate (Kaufman & Watkins, 1996). There are also many disagreements about which variables to include in such analyses and how best to find a comprehensive, valid, and reliable framework to calculate all relevant costs (Kaufman & Watkins).

The second problem is related the worth of human behavior (i.e. non-monetary value), Wang, Zhengxia, and Li (2002) point out that the use of ROI in the HRD field is still in its infancy. In many cases, ROI estimates may be based on economic and industrial-organizational (I/O) psychology models that rely on assumptions about the worth of human behavior. There has been much criticism about using judgment-based
dollar value estimations to measure the worth of human behavior (Holton & Naquin, 2005; Wang et al.). Furthermore, since intangible measures such as customer or employee satisfaction are not necessarily measured in dollar value, the current ROI approach can be sometimes inapplicable (Kraiger, 2002; Wang et al.). Lastly, estimating the impact of a HRD intervention on business results can be difficult because it is affected by many intervening factors (e.g. organizational culture, market condition) (Holton & Naquin, 2005; Jacobs, Jones, & Neil, 1992; Rumble, 2001; Wang, et al.).

Holton’s Model

Holton (1996) proposed three primary outcome measures for training evaluation - learning, individual performance, and organizational results - and suggested the specific variables to be measured within each of the three domains. The first domain of outcomes is learning. Learning is influenced by trainees’ reactions, motivation to learn, and ability. In Holton’s model, reactions are defined as moderating and/or mediating the relationship between training motivation and learning, rather than as a primary outcome of training. Motivation to learn is directly related to learning and is influenced by intervention readiness, job attitudes, and personality characteristics. Ability is the third factor that affects learning. He states that cognitive ability is a significant factor influencing motivation to learn.

The second domain of outcomes is individual performance. An individual’s performance is influenced by motivation to transfer, transfer conditions (i.e. environment), and transfer design. Motivation to transfer is mainly influenced by intervention fulfillment, learning outcomes, job attitudes, and the expected ROI of the results. Transfer conditions have a primary impact on performance and a secondary impact on motivation to transfer in this model. Holton argues that trainees who work in
environments supportive of learning transfer are more likely to transfer their learning to their jobs. Transfer design is another important factor in transfer training and training should be designed to directly facilitate the transfer of training (e.g., goal setting, a relapse prevention module, instructional design).

The final domain of outcomes is organizational results. Organizational results are primarily influenced by a training program’s links to organizational goals, its expected utility or payoff, and by external factors. Holton stresses that for training to achieve organizational results, it must be linked with organizational goals, have expected utility or payoff for the individual and organization, and identify and control for external factors that affect training such as price changes, raw material shortages, and equipment failures. Finally, he suggests that this fully specified model should be validated by empirical studies and compared with a simpler model to examine the extent to which the variance will be explained by a smaller set of variables.

*The Systems-based Model*

Another of the most frequently used evaluation models is for training in organizations the systems-based model (Phillips, 1997). Under the systems approach, Stufflebeam (1971)’s CIPP model is the best known (Fitzpatrick, Sanders, & Worthen, 2004). She points out that since evaluation should be informative to decision makers, the systems approach is particularly effective when applied to evaluation. The CIPP model stands for the four components of training systems: context, input, process, and output. The followings are the main characteristics of these four types of evaluation:

1. Context evaluation involves obtaining information about the organizational context to determine training needs and to identify objectives for the program.
2. Input evaluation involves determining the availability of resource, considering alternative program strategies, and instructional design.

3. Process evaluation is assessing the implementation of the program as well as any barriers to implementation, providing information for preprogrammed decisions, and monitoring procedural events and activities.

4. Product evaluation includes making judgments about the outcomes of the program related to their objectives, context, input, and process information, and interpreting their worth and merit.

In practice, Jacobs (2003) provides the specific, planned and interactive process of evaluation from the system view for evaluating structured on-the-job training (SOJT). In his book, he points out that the system view enables the behavior of systems to be seen as predictable, so that evaluators can respond in informed ways to the reactions observed. In addition, it enables them to understand how multiple components in a system interact and work together to achieve common goals, and to design and implement particular changes systematically, linking them to a bigger system as a mean to achieve its goals.

As a result, Jacobs suggests that the evaluation questions for SOJT should be asked based on system outputs, processes, and inputs. The questions also need to be asked about the organizational context in which the training takes place.

The evaluation of SOJT from a systems view, as discussed and implemented by Jacobs (2003), can be applied to the evaluation of other training approaches such as web-based and classroom-based training, because they can be also viewed as systems themselves. First, the training output questions focus on the various effects of training, in Jacobs’s evaluation framework. For example, the questions are asked about whether the training goals have been achieved, whether the training met the needs of trainees,
whether the training is more effective or efficient than other training approaches in terms of financial benefits, and whether the training has had unanticipated effects, both positive and negative.

Second, the training process questions focus on the behaviors of the trainer and trainee during the training. For example, questions are asked about the amount of time required to complete the training, the availability of training resources, trainers’ behavior regarding the delivery of content and the quality of the learner work, and trainees’ behavior for quality of instruction. Third, the training input questions focus on the components required at the time of the training. For example, the general questions are asked about units of material to be learned, the nature of the training modules, the training locations in the work setting, as well as about the trainee and the trainer, themselves. Lastly, the organizational context questions focus on the context that affects the training. The key questions are asked about the extent of management commitment to the use of the training and the interaction of the training with other systems in the organization.

However, although the system model is useful in terms of considering a training program’s overall context and situation in the evaluation, Eseryel (2002) points out that the system model has three main shortcomings as far as evaluation is concerned: the lack of the dynamic interaction between the design and the evaluation of a training program, the lack of time set aside for creating descriptions of the processes involved in the evaluation, and the lack of a collaborative process among people who have different roles and responsibilities during an evaluation process.
Current Practices in Evaluation of Training

Previous studies (Bassi, Benson, & Cheney, 1996; Bassi & Van Buren, 1999; Twitchell, Holton, Trott, 2000) have found that most companies in the United States use the Kirkpatrick framework to evaluate their training programs, and their evaluation activities are limited to measuring trainees’ satisfaction with learning and learning outcomes. According to the ASTD (2004), most organizations surveyed reported using mostly lower levels of evaluation, measures of reaction (78%) and learning outcome (32%); less than 10 percent of companies assess behavioral change or organizational results.

Despite this trend, HRD professionals still prefer to evaluate the effectiveness of their training programs using more comprehensive data from criterion-referenced tests and feedback questions (Holton & Naquin, 2005). When asked to report on a training investment, HRD professionals often hesitate to define their programs solely in terms of financial benefits. They are reluctant to calculate the costs necessary to develop, deliver, and evaluate training, and to document and report the benefits such as increased quality, productivity, safety, and sales (Decker & Campbell, 1996; Wang et al., 2002).

For example, the human resource development institute (HRDI) in the New Jersey department of personnel has struggled to fully integrate Kirkpatrick’s model. This department provides training and consultation to state government agencies and employees, local municipalities, county governments, and not for profit agencies. HRDI primarily offers distance learning -purchased satellite conferences, teleconferences/video and agencies- and self-paced learning training products (e.g., CD-ROM, internet workbook, and videoconferencing). HRDI used Kirkpatrick’s four-level evaluation to evaluate training effectiveness between July 1, 1998 and February 1, 1999. HRDI
successfully measured the reaction level of trainees for over 85 percent of their courses. However, only two out of 201 courses completed measures of learning, although several courses include short pre- and post-tests of course-related knowledge. They are still working to integrate Level 2 evaluations with Level 1 and to utilize Level 3 evaluations (behavioral changes) in a comprehensive and systematic manner (International Public Management Association for Human Resources, 2005).

This situation does not seem to be different in South Korea. Some evaluation scholars (Boyle & Lemaire, 1999; Gray, Jenkins, & Segsworth, 1992) state that basic approaches and tools for evaluation used in Korean firms are no different from those used in other countries. The methods and techniques for evaluation solely depend on what type of evaluation design is used (Lee & Suh, 1987; Lee 1999). However, most Korean firms heavily rely on simple analytical evaluation methods and techniques such as reaction and learning measures, usually grouped under the Kirkpatrick’s framework. Little is known about training’s effects on productivity at organizational level in developing countries (Tan & Bartra, 1995).

Korean companies also demonstrate a lack of comprehensive evaluation practices for training programs. For example, Hyundai Motor Company (HMC) is one of the leading automobile manufacturers in Korea. HMC concentrates on HRD and provides various training programs (e.g., overseas programs, MBA courses, e-courses, etc.) to improve employees’ performances. According to an ASTD report (2005), HMC’s evaluation system is basically divided in two phases: needs assessment and performance evaluation. In the assessment phase, organizational, task, and individual analyses are conducted. In the evaluation phase, Kirkpatrick’s four levels are evaluated. However, the four-level evaluation is not fully carried out in practice: the percentage of the
organization that, in 2002, reported the use of Level 1 was 90%, Level 2 was 28%, and Levels 3 and 4, 0%. The most common activities of evaluation, then, are the evaluations conducted at Level 1, and there is no evaluation at all for Levels 3 and 4.

Nonetheless, there are also some companies in these countries who try to or actually do conduct evaluation at these higher levels (transfer of training and organizational results) in many different ways. For instance, the Northwest Airlines technical operations training department provides mostly classroom-based training and some technological simulations to instruct the thousands of aircraft technicians and over 10,000 outside vendors who work on maintaining the Northwest aircraft fleet. This technical operations training department examines the impact of training on the organization’s results. To do this, they developed a computer application called the training quality index (TQI). The TQI tracks all departments’ training data, sorting it into five categories: effectiveness, quantity, perceptions, financial impact, and operational impact. The system can provide performance reports that relate to budgets, including the cost of training per learner per day and other costs of training (Schettler, 2002).

In case of South Korea, Chung, Lee, Yi, and Jung (1997) demonstrate that most Korean firms employ some sort of systematic performance evaluation. These authors state that while these evaluation systems are well designed, their systems are not effectively utilized in most Korean firms. The study also found, however, that organizations have recently made a great effort to implement better performance evaluation for training and development activities (Chung, Lee, Yi, & Jung).

For example, Samsung, the largest corporation in Korea, has been investing heavily in training and development programs in order to meet organizational goals. Between 1992 and 1995, 2,000 employees were sent abroad through different types of
training programs (Fleury, 1996). Rowley and Bae (2004) argue that Samsung’s performance-based evaluation is more likely to be objective and reliable than other Korean companies’. Their evaluation relies heavily on an appraisal system that is composed of a supervisor’s diary; a 360-degree (supervisors, subordinates, customers, suppliers) appraisal; mandatory distribution; and interviews with the supervisor, at a time that is called the “day of subordinate development”. However, this evaluation system is still not fully and comprehensively utilized (Fleury).

**Evaluation Comparison of Web-based and Classroom-based Training**

Today, organizations have to select the best training programs for their employees among a wide variety of training approaches. With the interest in the use of WBT increasing, as a new way of improving efficiency and effectiveness of training, HRD professionals are often asked to determine the effectiveness of WBT, as compared to classroom-based training (Olson & Wisher, 2002; Zallas, 2005). Although WBT delivers the same learning goals as those already offered by classroom-based training (Rumble, 2001; Zallas), these training approaches are different from each other in terms of their learning environment. Accordingly, evaluating WBT should be handled differently from evaluating classroom-based training.

Previous scholars (Curtain, 2002; Jung & Rha, 2000; Olson & Wisher, 2002; Rumble, 2001; Whalen & Wright, 1999; Zallas, 2005) have stressed that evaluating WBT is more difficult and complex than classroom-based training, due to the wide variation in WBT forms. The evaluation of WBT is influenced by a number of factors, such as the type of organizational setting in which it is delivered, how the work is organized and allocated, IT infrastructure used, the availability of technology, the number of learners, flexibility of learning times, frequency of course revision, type and amount of media used,
type and amount of learner support, amount of interaction, the choice of synchronous versus asynchronous online interaction, learners’ experience level with technology, completion rates, or unexpected technical issues.

The evaluation of WBT differs from that of classroom-based training particularly based on its relationship to context. For example, an organization has a large numbers of trainees who are geographically dispersed and require similar training, and wants a training program that offers an open-ended and self-direct learning process. In this context, it is more challenging to monitor and evaluate the quantity and quality of the learners’ experiences with online courses (Zallas, 2005). In addition, when an organization provides different types of online courses that require different preparation times and levels of online interaction, it is more difficult to evaluate the level of workload and extra time spent by administrative staff and instructors to support online courses (Curtain, 2002).

Similarly, it can be difficult to measure efficiency in course delivery time for WBT. Accurate measurement may depend on the type and amount of multimedia content in an online course. It may also depend on the trainee’s personality, ability, and motivation to succeed with WBT. Higher levels of computer self-efficacy (mastery, goal-orientation, or high learner control) might be related to higher learning outcomes (Welsh et al., 2003). However, some studies (Kass, Ahlers, & Dugger, 1998; Larsen, 1992) have found that individual differences (e.g. learning style and gender) do not measurably influence whether WBT is effective. Basically, many researchers (Clark, 1994 & 2000; Olson & Wisher, 2002; Rumble, 2003; Smith & Dillon, 1999; Strother, 2002; Welsh et al.; Zallas, 2005) assert that it is difficult to compare the evaluation of web-based and classroom-based training because of numerous potentially-confounding variables.
Rumble contends that it is extremely difficult to isolate the effects of web-based or classroom-based training from other confounding variables involved in the training.

Smith and Dillon (1999), however, point out that evaluation comparison between web-based and classroom-based training is still useful, if the same attributes are present and clearly articulated in the compared conditions. Zallas (2005) also suggests that in order to compare conclusively the effectiveness of web-based and classroom-based training, a control group is required and the control groups should provide the same learning goals and attributes with treatments and differ only in the delivery modes.

Nevertheless, Clark (1994, 2000) argues that it is almost impossible to create training that is identical in all ways except for in mode of delivery. In response to this point, Welsh et al. (2003) offer some cautions regarding potentially confounding factors when comparing the evaluation of web-based and classroom-based training. First, the differences between web-based and classroom-based training might be due to course design rather than the delivery modes themselves. In other words, there may be causes other than technology that lead to observed differences.

Second, there are additional moderators that influence whether a particular medium or a particular instructor is more effective, including quality of instructional design and delivery, quality of the instructor, and potential individual differences among instructors. For example, the instructor plays a key role in both web-based and classroom-based training. He/she influences trainees’ participation for learning and clear and precise feedback to trainees. On the other hand, some individual learners or course material may be better suited to a particular medium or technology. However, they address that there is little research about these moderators of effective training, and thus there is more research needed on this issue. Lastly, Olson and Wisher (2002) point out
that there is little consensus regarding what variables should be examined or what measures of learning are the most appropriate, and thus it makes it more difficult to compare the evaluation of these training approaches.

_Evaluating Web-based and Classroom-based Training based on a Systems Approach_

Following the systems approach proposed by Jacobs (2003), several different training evaluation frameworks are integrated for the purpose of evaluating web-based and classroom-based training programs in this study. This integrated framework helps to demonstrate the relationship among components in a system and with other systems in a larger system or organization, and to understand the dynamic interactions among people who have different roles and responsibilities during an evaluation process. Figure 2.1 and 2.2 show these relationships in detail. Figure 2.1 explains how to evaluate web-based training programs based on the systems model; Figure 2.2 illustrates how to evaluate classroom-based training programs based on the systems model.

_Evaluating Web-based Training_

_Input._ The input evaluation is important for measuring the appropriateness of three sets of characteristics—the individual, the training design, and organizational variables—that influence training performance, before conducting training (Baldwin & Ford, 1988).

General input questions cover trainees (personality and prerequisites such as basic computer skills and experience with technology), trainers (competencies such as computer skills and view of the facilitator’s role), online experts, technicians, instructional designers, administrative staffs, the work functions and conditions to be performed, KSAs to be learned, instructional design and content, learning materials (e.g., software, educational websites, and digital library), hardware (e.g., computer, wireless
device, telephone, hub, etc.), network services (e.g., bandwidth, firewall, server, etc.), e-
learning management systems (e.g., admission, registration, storing information, tracking
learning progress, evaluation, asynchronous & synchronous communication tools such as
chat rooms, discussion boards, email, etc.), and other resources such as location, budget,
time, reward systems, and so on.

Process. The process evaluation questions focus on the behaviors of trainers and
trainees as well as the technical maintenance support for instruction during the training.
They ask how the trainer delivered the online course, how the trainees learned the content,
and how the management supported the instructional technology. The process evaluation
is important to modify a program or redesign presentations, materials, or training content.

The general questions about the training process address such issues as the
amount of time required to complete the WBT, the adequacy of training location, the
availability and suitability of learning resources including hardware, software, and web
sites, and usability of online communication tools. The evaluation questions about the
trainer’s behavior questions dealing with the readiness for instruction, online content used
(accessibility, usability, and suitability), interaction with learners (immediate feedback),
online socialization (the equal participation of learners), and learner work (completing all
ratings and personnel forms).

The evaluation questions regarding the trainee’s behavior include questions about
training attendance, training content, quality of instruction, instructional resources,
technology used, amount and quality of interaction, and instructional approach used. To
answer these questions, online feedback forms can be distributed to trainees and trainers
after training. In addition, online learner agents can monitor or evaluate an instructor,
learners, and peer activities during training (Bransford, et al., 1999).
Output. The output evaluation questions focus on the various effects of having used WBT. These evaluation questions address such issues as the achievement of training objectives, the trainees’ development goals, and the organizational goals (Jacobs, 2003). The output evaluation is important for making judgments about a program’s effectiveness or worth (Holton & Naquin, 2005).

To measure the unique effects of WBT, training output questions frequently measure the followings:

- **Learning outcomes.** Kirkpatrick (1998) and Phillips (1997) propose that learning outcomes should be measured to examine the extent of trainees’ changes in knowledge, skills and attitudes. Online computer-marked assessment tools such as quizzes, simulation exercises, virtual labs, and other active learning can be used to measure knowledge and skills. Further, sophisticated software tools can be used to grade complicated materials such as learners’ essays (Bradsford et al, 1999). Online questionnaires can be also distributed to learners to measure their attitudes toward learning.

- **Transfer of training.** Many researchers (Baldwin & Ford, 1988; Kirkpatrick, 1998; Kraiger, 2002; Lim & Morris, 2006; Philips, 1997) suggest that behavioral changes in learners should be measured to see whether trainees have applied the behaviors learned in training back to their jobs. Learners’ behavioral changes may be measured by online self-reports, completion of checklists by supervisors or others who are in the best position to observe trainee behavior (e.g. customer), or performance review records.

- **Result.** According to Kraiger (2002), performance effectiveness may be measured through 360-degree feedback systems, formal certification
programs or assessment centers, or surveys asking trainees or their supervisors to estimate the percentage of improvement in job performance as a result of training. Phillips (1997, as cited in Kraiger) suggests that hard data (e.g. production, sales, equipment downtime, error reduction, number of customer complaints, etc.) and soft data (e.g. employee satisfaction or organizational commitment, customer satisfaction, etc.) can be also measured for performance effectiveness.

- **Financial return.** The most common method to measure financial benefits of WBT is a cost-benefit analysis of training. Whalen & Wright (1999) point out that two common measures for WBT are the breakeven point, the point at which costs are recovered, and ROI, which quantifies the financial benefits of having undertaken a program. For example, to measure the breakeven point of a web-based training program (W) as compared to a classroom-based training program (C), Whalen and Wright used the calculation as follows: fixed costs of C – W / variable costs of C – W. “Fixed costs here are defined as costs that remain the same regardless of the output. Variables costs are defined as costs that vary directly with the amount of output" (p. 26). To measure the ROI of WBT, costs and benefits of the training program should be calculated, based on Philips’ (2003) ROI measurement (see section on ROI, p.37).

*Organizational context.* The organizational context section of the evaluation instrument measures how WBT exists within an organizational context. To motivate employees, management support is important, supplying rewards, time for WBT at work, or support from supervisors and managers in applying learning to work (Rossett &
Schafer, 2003). Particularly, organizational technical support is essential for the evaluation of WBT because the most obvious barriers to successful implementation of WBT are related to the technology: the usability of the software, hardware, and bandwidth (Hofmann, 2003).

In addition, it is also critical to examine the relationship between WBT and other programs within the organization. The goal of the training should be harmonized with the goals of others (Jacobs, 2003). The general questions about the organizational context address such issues as government support, organizational culture and structure consistent with WBT, availability of sufficient resources, willingness to manage and maintain WBT after implementation, the organization’s contractual obligations and agreements that promote/inhibit WBT, alignment with organizational goals and goals of related other systems in the organization, innovativeness of WBT, and so on.
Trainees: personality (e.g. learner control, self-efficacy) and prerequisites (e.g. basic computer skills)

Trainees: competence (e.g. technical skills, as a facilitator)

Online expert
Technicians
Instructional designers
Administrative staffs

KSAs to be learned
The work functions and conditions to be performed
Instructional design
Hardware (e.g. computer, telephone, wireless device, hub)

Learning materials (e.g. websites, digital library, software)

Network services (e.g. server, sufficient bandwidth & Internet speed, firewall)

E-learning mgt system (e.g. registration, storing info., evaluation, communication tools)

Other resources (e.g. budget, time, reward systems)

Learning (e.g., online computer-marked assessment, online automated tutors’ rating)

Attitudes (e.g., online self-assessment)

On the job behavior (e.g., completion checklists by supervisors, reviewing performance records)

Organizational impact: Performance effectiveness (e.g., organization commitment, retention, error reduction, products & sales)

Financial benefits (e.g., ROI, the breakeven point)

Organizational Context (e.g., Government support, organizational culture and structure consistent with WBT, availability of sufficient resources, willingness to manage and maintain WBT, alignment with goals of related other systems in the organization)

Figure 2.2: The Evaluation of WBT Programs from a Systems View
Evaluating Classroom-based Training Using a Systems Approach

Input. The input evaluation is important to measure the appropriateness of three sets of characteristics—the individual, training design, and organizational variables—before conducting training (Baldwin & Ford, 1988). The general input questions deal with trainees (e.g., personality and prerequisite skills), trainer (e.g., competence and experience), learning materials (e.g., textbooks, workbooks, handouts, etc.), instructional technology used (e.g., powerpoint, internet, overhead, communication tools, etc.), work functions and conditions to be performed on the job, KSAs to be learned, instructional design and content, facilities, budget, time, reward systems, and so on.

Process. The process evaluation questions focus on the behavior of trainer and trainees during the delivery of training. The general questions about the training process address such issues as the amount of time required to complete classroom-based training, the adequacy of training location, the availability and suitability of learning materials in class, including technology, and the availability of training resources. The evaluation questions about the trainer’s behavior include readiness for instruction, training content used, interaction with learners, and learner work (completion of all ratings and personnel forms). The evaluation questions about the trainee’s behavior include training attendance, training content, quality of instruction, instructional resources, technology used, amount of interaction, and instructional methods.

Output. The output evaluation questions focus on the various effects of having used classroom-based training. Just as with evaluating WBT, evaluation questions should be asked about whether the training goals have been achieved, whether the training met the needs of trainees, and whether the training had unanticipated effects (Jacobs, 2003). To evaluate effects of classroom-based training, structures for evaluation of training
output frequently measure learning outcomes, transfer of training, organizational results, and ROI, just like the evaluation of WBT. However, we should be cautious in evaluating ROI of classroom-based training in the same way, since the cost elements involved are very different from those in WBT.

Organizational context. Just as with the context evaluation of WBT, the key questions for classroom-based training are about the extent of management commitment to the use of the training and interaction of the training with other systems in the organization (Jacobs, 2003) (see section on the evaluation of WBT for details, p.55).
Trainees (personality and prerequisite skills)

Trainer (competence)

Learning materials (e.g. workbook, handouts, textbooks)

Instructional technology used (e.g. powerpoint, internet, overhead)

Communications technology (e.g. email)

Work functions and conditions to be performed on the job

KSAs to be learned

Instructional design

Other resources (e.g. facilities, budget, time, reward systems)

The amount of time required to complete classroom-based training

The adequacy of training location

The availability and suitability of training resources in class, including technology

The trainer’s behavior (e.g. readiness for instruction, training content used, interaction with learners).

The trainee’s behavior (e.g. training attendance, training content, quality of instruction, instructional resources, technology used)

Learning (e.g. cognitive tests, performance-rating scales)

Attitudes (e.g. self-assessment)

On the job behavior
(e.g., completion checklists by supervisors, reviewing performance records)

Organizational impact:
Performance effectiveness (e.g., organization commitment, retention, error reduction, products & sales)

Financial benefits (e.g., ROI, break even point)

Organizational Context
(Government support, organizational culture and structure consistent with classroom-based training, availability of sufficient resources, willingness to manage and maintain classroom-based training, alignment with goals of related other systems in the organization)

Figure 2.2: The Evaluation of Classroom-based Training Programs from a Systems View
Barriers to Training Evaluation

Despite the fact that many scholars and practitioners (Boyd & Mosier, 2001; Curtain, 2002; Decker & Campbell, 1996; Eseryel, 2002; Holton & Naquin, 2005; Jung & Rha, 2000; Kirkpatrick, 1998; Rodger, 2006; Rumble, 2001; Kaufman & Watkins, 1996; Kraiger, 2002; Twitchell et al, 2001; Wang et al., 2002; Whalen & Wright, 1999) assert that it is essential to measure training effectiveness, most organizations do not actually conduct evaluation well, if at all. The primary barriers inhibiting evaluation proposed by these authors are:

1. Lack of expertise in evaluation: lack of knowledge and skills or lack of experience in evaluation
2. Lack of organizational support for evaluation: unavailability of resources, organizational confidentiality practices or policies, fear of negative financial return, blind trust in training solutions, and limited budget and time
3. Lack of evaluation methods and tools: evaluation activities limited to reaction sheets and statements of learning outcome, lack of common cost framework, and methodological limitations of financial returns measurement

Three Barriers Affecting Evaluation

There are several empirical studies on evaluation utilization that offer guidance in appropriate ways of conducting effective evaluation (Alkin, 1975; Cousins & Leithwood, 1986; Hofstetter & Alkin, 2003; Johnson, 1998; Kirkhart, 2000; Leviton, 2003; Leviton & Hughes, 1981; Shulha & Cousins, 1997). Taut and Alkin (2003) propose that this body of research can be addressed to oppose the barriers that inhibit evaluation. In their study, they examined the perception of project staffs on barriers that inhibited evaluation implementation and its eventual use, based on Alkin (1985)’s evaluation framework.
Alkin (1985) suggests that his framework is useful and practical to make evaluation decisions about a project or program in organizations such as schools, social service agencies, hospitals, banks, and so forth. He focuses evaluation on the program itself rather than individual participants in the program. He divides factors affecting the conduct of evaluation and its use into three categories: human factors, context factors, and evaluation factors. First, human factors describe evaluator and user characteristics. This category examines factors related to the personal characteristics of the various individuals engaged in the evaluation and its use. Second, context factors refer to the context in which the evaluated program exists. This category reviews factors related to specific program features, administrative structures, and organizational, political and social influences on evaluation. Third, evaluation factors involve the evaluation itself. This category investigates factors related to the actual conduct and reporting of evaluation.

*Human Factors*

The category of human factors can be divided into evaluator characteristics and user characteristics.

*Evaluator characteristics.* The evaluator characteristics consist of the following:

1. *Commitment to use.* The evaluator should be committed to facilitating and to enhancing evaluation.

2. *Willingness to involve users.* The evaluator must actively involve stakeholders in the planning and conduct of the evaluation as well as in the process of enhancing that evaluation.

3. *Choice of role.* The evaluator can choose one of several evaluator roles: neutral arbiter, experimenter, program advocate, or evaluator-user
collaboration. The most desirable role is evaluator-user collaboration, which means that the evaluator is working together with stakeholders in order to receive their comments and feedback about program practices.

4. *Rapport with users.* Rapport here refers to harmony, trust, and agreement between the evaluator and stakeholders. To establish rapport with stakeholders, the evaluator should show familiarity with the needs of the program, adopt procedures appropriate to the program setting, and reflect stakeholders’ comments in the evaluation.

5. *Political sensitivity.* The evaluator must understand the various aspects of the political context, both individual and organizational. In addition, the evaluator must understand that evaluation is only one of the ways of making decision about a program, and is not for all stakeholders but for certain stakeholders. Other decisions can be made based on many other sources of information to potential stakeholders.

6. *Credibility.* The evaluator should be competent, honest, and reliable in evaluation. This competence and trust can be built based on various technical and professional capabilities in evaluation of the evaluator.

7. *Background and identity.* Evaluator background and identity refer to characteristics such as age, gender, race, title or position, physical attributes, speech patterns and so forth. The evaluator reacts in different ways depending on these characteristics.

*User Characteristics.* The user characteristics affecting evaluation consist of the following:
1. **Identity.** Stakeholders’ identity should be determined by examining the various stakeholders, their organizational positions, and their experience levels to help the evaluator identify the range of potential stakeholders of the training and their characteristics.

2. **Interest in the evaluation.** The stakeholders’ interest in evaluation will be different based on several components: views about the program being evaluated; expectations for the evaluation; predisposition toward the evaluation; perceived need for the evaluation; and perceived risks of the evaluation.

3. **Commitment to use.** Like the evaluator’s commitment to the evaluation itself, intended stakeholders should be committed to using its results. Especially, key stakeholders’ enthusiasm for and commitment to utilize the evaluation stimulates the potential for use. If they resist the evaluation, the results might be useless to the whole audience.

4. **Professional style.** The professional style of stakeholders includes administrative and organizational skills, initiative, and openness to new ideas or change. For example, if some stakeholders are not able to organize their time to promote use, this will have a negative effect on evaluation use. As another example, if some stakeholders may be enthusiastic about adopting the new ideas, this has a strong influence or effect on evaluation use.

5. **Information-processing preferences.** The information processing preferences refer to stakeholders’ preferences about certain forms that information takes and the way in which they process information. For
example, some stakeholders may prefer to receive very detailed information, whereas others want to get a big picture. Moreover, some stakeholders may prefer to receive the evaluation reports in private, whereas others may prefer to have a presentation first and then to receive it in written form. Thus, it is important to identify stakeholders’ preferences and then modify them, to negotiate possible conflicts.

**Context Factors**

There are three context factors potentially affecting evaluation: pre-existing evaluation bound, organizational features, and program characteristics.

*Pre-existing evaluation bound:* “Pre-existing evaluation bound refers to prior events and decisions that set possible constraints on the evaluation” (p.45). Pre-existing evaluation bound consist of the following:

1. *Written requirements.* Written requirements include legal codes, federal/state requirements, organizational operating policies, and requirements to manage the training program being evaluated. More flexibility in these requirements will increase the ease of evaluation implementation and potentially enhance its use.

2. *Other contractual obligations.* Training program administrative and operational stakeholders can provide other contractual obligations. If obligations of the program are unrealistic, they will increase the tension on the evaluator to meet the written requirements. A user-oriented focus and appropriate direction for evaluation will increase evaluation implementation and its use.
3. *Fiscal constraints*. Fiscal constraints refer to the amount of money available for the evaluation. The evaluator’s time spent on his/her work is clearly and directly affected by fiscal constraints.

*Organizational features*: These features show patterns and relationships both within and outside of the organization that may affect evaluation. The organizational features consist of the following:

1. *Intraorganizational features*. Intraorganizational features refer to the established characteristics and relationships of the organization for the training program being evaluated. For example, if the organization provides services such as consultants, in-house expertise, and the like, lack of autonomy for the training program may inhibit the evaluation’s usefulness. In addition, if the organization relies on other sources of information beyond the evaluation, it may inhibit the evaluation’s usefulness.

2. *External features*. External feature refer to the context outside of the actual training program and the organization in which it is located. Sometimes, the outside community influences the operation or the funding of the training program. External funding agencies often set criteria for the evaluation to satisfy. To promote evaluation, it is essential to identify the members of the community and other agencies that are related to evaluation use, involve them in the evaluation, and anticipate their needs and requirements for any modifications and changes in the evaluation.

*Program characteristics*. The three program characteristics affecting evaluation include the following:
1. **Age/maturity.** Program age and maturity are different concepts. The age of a program refers to how long it has been in operation. On the other hand, the program maturity reflects the extent to which program procedures and expectations are firmly institutionalized. These characteristics can be present whether the program is brand-new, whether it has been operated long enough for staff to be routinely performing their jobs, or whether its goal is already accomplished.

2. **Innovativeness.** Innovativeness describes something new, creative, or unique, sometimes involving risk-taking. Stakeholders expect some degree of innovation in the program when adding something new to the program routine, although it may not directly meet the definition of innovation.

3. **Overlap with other projects.** The concept of overlap with other programs has three different implications. The first is the extent to which a program is a part of a larger system. The second is the relationship between one program and other unrelated programs in the system. The third is the program’s relationship to similar programs outside the system. To be useful, the evaluation should be matched with the needs of a program. For example, a new program may need formative evaluation rather than summative evaluation. In case of competition with other programs in a larger system, the credibility of the evaluator is essential.

**Evaluation Factors**

Four evaluation factors may affect the conduct of evaluation and its use: evaluation procedures, information dialogue, the substance of evaluation information, and evaluation reporting.
**Evaluation procedures.** There are three elements in this factor:

1. *Methods used.* The methods selected for an evaluation should be examined in terms of their appropriateness and their rigor. Methodological appropriateness should be considered in two aspects: methodological appropriateness and context appropriateness. For example, is the proposed measure (e.g. interview or questionnaire) the most appropriate for a given program’s questions or needs? Is the proposed measure appropriate in the particular program’s context? Meanwhile, methodological rigor is concerned with precision and accuracy in a dual standpoint: professional measures of rigor and user perception of rigor. For example, does each interviewer follow the same procedures? From stakeholders’ viewpoints, does the evaluator measure what was intended? Thus, there is a need for dialogue between the evaluator and stakeholders to get consensus about the most appropriate and rigorous measures in both methodological and contextual aspects.

2. *Ways dealing with mandated tasks.* Some mandates and requirements may be required by external agencies as potential stakeholders. The potential use may diminish if the evaluation is only focused on the program needs. Thus, there is a need for continuing dialogue between the evaluator and stakeholders about how best to handle various mandated tasks, without overemphasizing a particular task or set of tasks.

3. *Use of a general model.* Various models may be used to guide an evaluation. A particular model is not better than others. The evaluator should focus not on which general model is chosen, but on other
considerations, such as methodological appropriateness and user-oriented evaluation.

*Information dialogue.* Information dialogue refers to the planned discussion between the evaluator and stakeholders about how to conduct the evaluation and to promote its use. The information dialogue is determined by the following factors:

1. *Amount of interaction.* The amount of interaction between the evaluator and stakeholders includes a broad range of encounters between evaluators and stakeholders: making formal and informal reports, making and taking phone calls, requesting clarification, explaining information, sharing a draft before it is finalized, and discussing evaluation progress over lunch.

2. *Quality of interaction.* The quality of interaction between the evaluator and stakeholders lies in reciprocal atmosphere and the stakeholders’ needs for different kinds of information. For example, the evaluator and stakeholders should feel comfortable asking questions and answering them during discussion. In addition, the phone call or the discussion should be based on sound evaluation practices and should focus on the stakeholders’ needs.

*Substance of evaluation information.* This factor consists of the following two elements:

1. *Information relevance.* Information should be relevant to stakeholders and their issues of concern. Relevance will often be a function of the views and questions of a given stakeholder. There are several problems of relevancy if the evaluation consists of too many questions, or of questions that are too narrow or too broad.
2. **Information specificity.** Information should be specific to various stakeholders. Different stakeholders or stakeholder groups may share a common information need. But they may need also specific information for their particular jobs and responsibilities. Therefore, specific information may be required for a different stakeholder or stakeholder group.

**Evaluation reporting.** The evaluation reporting factor consists of five elements:

1. **Frequency of information exchange.** The frequency of information exchange is related to the amount of interaction between the evaluator and stakeholders. Frequency here refers to the extent to which evaluation information is reported to stakeholders throughout the life of a program. Timely and well-focused formative or progress reports will enhance evaluation utility.

2. **Timing of information.** The timing of information is another factor affecting use potential. For example, late submission of a report may cause stakeholders to ignore subsequent reports. By providing intended stakeholders with well-timed progress or interim reports, the evaluator is able to reflect their comments and feedback in the final report.

3. **Style of oral presentations.** Evaluation information can be presented in either oral or written form, based on its own unique demands. In oral presentations, a balanced mix of formal and informal styles can enhance effectiveness. Some stakeholders may prefer a mix of the two styles, or only a formal style, or vice versa. Thus, the evaluator should try to be aware of stakeholders’ preferences about the presentation.
4. **Format of reports.** Written reports such as progress reports and final reports also require an appropriate format to be effective. In written reports, a balanced mix of graphics (tables, charts, and figures), technical presentation, and non-technical narrative can enhance effectiveness.

5. **Mix of statistical and narrative data.** When presenting evaluation results in either oral or written forms, a balanced mix of statistical and narrative data can enhance evaluation use. If one method of data is more emphasized than another, the potential for use diminish. “Statistical and narrative data should complement each other as findings are presented and interpreted” (p.57).

**Conceptual Framework**

This final section of the literature review provides a conceptual framework of the relationships between types of training approaches, demographic characteristics, and evaluation practices used by HRD professionals. The four components of evaluation and the three factors of evaluation barriers, and key decision factors of evaluation are dependent variables in this study. First, the four components of evaluation, presented in Figure 2.3, are based on systems theory. Conceptualizing evaluation from a systems view provides HRD professionals with specific, planned, and interactive processes of evaluation (Jacobs, 2003).

Under the systems approach proposed by Jacobs (2003), this study integrates several training evaluation frameworks to evaluate web-based and classroom-based training programs. This integrated framework will help HRD professionals demonstrate the relationship among the components within a system and with other systems in a larger
system or an organization, and examine dynamic interaction among people who have different roles and responsibilities during an evaluation process.

In this study, the four components of evaluation refer to the extent to which input, process, output, and organizational context components of evaluation are used by HRD professionals to evaluate web-based and classroom-based training programs. Many researchers (Jung & Rha, 2003; Rumble, 2001; Trentin, 2000; Whalen & Wright, 1999) found that evaluation of WBT programs should be performed differently from evaluation of classroom-based training, since these training approaches differ from each other in terms of learning environment.

Evaluating WBT programs is more complex and more labor-intensive than evaluating classroom-based training due to wide variation in WBT itself. Thus, identifying and understanding the elements to evaluate is more difficult in WBT than classroom-based training (Trentin, 2000). Based on the literature review, the first hypothesis in this study is that there is a difference between web-based and classroom-based training programs in the four components of evaluation. More specifically, HRD professionals less frequently evaluate their WBT programs than classroom-based training programs in the four components of evaluation.

Second, the evaluation barriers presented in Figure 2.3 are based on Alkin (1985)’s evaluation framework. Alkin (1985) proposes that three factors – human, organization, and evaluation factors - affect the conducting of evaluation and its use. Previous studies have endeavored to find appropriate ways of conducting effective evaluation (Alkin, 1975; Cousins & Leithwood, 1986; Hofstetter & Alkin, 2003; Johnson, 1998; Kirkhart, 2000; Leviton, 2003; Leviton & Hughes, 1981; Shulha & Cousins, 1997). Taut and Alkin (2003) propose that this body of research can be addressed as
representing the opposite of the barriers that inhibit evaluation implementation and its use. In this study, this variable was measured by the degree of difficulty perceived by HRD professionals in evaluating web-based and classroom-based training programs, based on Alkin (1985)’s three factors affecting evaluation.

Previous research found that organizations do not conduct evaluation effectively, although many scholars and practitioners point out the importance of training evaluation (Rodger, 2006; Eseryel, 2002; Kirkpatrick, 1998; Boyd & Mosier, 2001; Rumble, 2001; Curtain, 2002; Decker & Campbell,1996; Kraiger, 2002; Wang, et al, 2002; Holton & Naquin, 2005; Whalen & Wright, 1999; Jung & Rha, 2000; Twitchell et al, 2001; Kaufman & Watkins, 1996). There are many reasons that prevent HRD professionals from evaluating training programs, such as a lack of an appropriate theoretical framework, of organizational support, or of experience in evaluation (Bober & Bartlett, 2004; Chen, Holton, III, & Bates, 2006; Curtain, 2002; Decker & Campbell, 1996; Eseryel, 2002; Holton & Naquin, 2005; Jung & Rha, 2003; Kraiger, 2002; Rumble, 2001; Saba, 2000; Wang, Zhengxia, & Li, 2002; Whalen & Wright, 1999).

Especially, previous empirical studies found that organizations face more significant and extensive barriers to evaluating WBT programs than classroom-based training programs, due to the complexity of the necessary evaluation, as stated previously (Jung, 2003; Jung & Rha, 2000; Sitzman et al., 2006; Strother, 2002; Whalen & Wright, 1999; Wisher & Olson, 2003). Based on this literature review, then, the second hypothesis of this study is that the barriers to the evaluation of training are different for web-based and classroom-based training programs for HRD professionals. More specifically, HRD professionals perceive more barriers to evaluating WBT programs than classroom-based training programs.
Lastly, key decision factors determining evaluation, presented in Figure 2.3, are explored in this study. Many organizations demand the evaluation of training programs in order to make judgments about the value of investing in specific training programs (Holton III & Naquin, 2005; Lim & Morris, 2006). Thus, to successfully utilize training evaluations, HRD professionals need an accurate analysis of why they evaluate their training programs as a first step in completing the evaluation process. In other words, they must understand what decision factors actually determine how and why they evaluate training programs in their organizations.

Based on the literature, the primary decision factors for evaluating training programs are used to make decisions about training programs such as course retention, course revision, or personnel (e.g., quality of instructor), to provide feedback to stakeholders, to design and develop courses more effectively, and to provide useful information to multiple stakeholder groups (e.g. demonstrating the value of training to upper management or helping future sponsors or trainees understand the beneficial changes initiated through training) (Eseryel, 2002; Kraiger, 2002). In this study, key decision factors are explored through interviews to provide more depth of information in practice.
Type of Training Approach
- Web-based training
- Classroom-based training

Demographic Characteristics
- Type of industry
- Size of organization
- Organization’s years of conducting training programs
- Employee’s job level
- Employee’s educational level
- Percentage of employee’s work that is related to training evaluation.

Evaluation Practices
- Four components of evaluation
- Three factors of evaluation barriers
- Decision factors of evaluation

Figure 2.3: A Conceptual Framework of the Study to Investigate the Relationship between Type of Training Approach and Evaluation Practices Used by Korean HRD Professionals.
CHAPTER 3

METHODOLOGY

This chapter is divided into six sections, which present: the research type, the research setting, information about participant selection, the instrument being used, the research procedures, and the data analysis.

Research Type

In approaching its critical questions, this study employed a mix of quantitative and qualitative nonexperimental research. This combined research design allows the study to utilize the strengths and minimize the weaknesses of these two very different methodologies (Babbie, 1992). When applying quantitative methods, objective estimation and statistical analysis of numeric data allow the researcher to understand and explain phenomena under standardized conditions. In qualitative research, narrative description and constant comparison are usually used in order to seek better understanding of some particular, natural phenomenon under uncontrolled conditions (Ary, Jacobs, & Razavieh, 2002; Babbie, 1992).

To combine these methods, this study was designed in two major steps. First, quantitative research was used to describe the incidences in evaluation practices used by HRD professionals for their web-based and classroom-based training programs and then to compare the differences between the evaluation practices used by HRD professionals for the two training approaches under standardized conditions.
Ex post facto research was the form of quantitative research that was used in this study to investigate the relationship between the type of training approach and the evaluation practices used by HRD professionals among Korean companies. Unlike experimental research, ex post facto research cannot examine direct cause-and-effect relationships between independent variables and dependent variables (Ary et al., 2002). Instead, this type of research can describe potential relationship among variables after controlling for extraneous variables. Thus, it is also called causal-comparative research.

In this type of research, the researcher is not able to randomly assign subjects to treatments or directly manipulate independent variables; the presumed causes have already occurred. To verify a functional relationship, the researcher must show that independent variables precede dependent variables in time and potential extraneous variables are controlled, and then examine the extent to which the variance of the dependent variable can be explained by proposed independent variables (Ary et al., 2002).

In this study, the independent variable, type of training approach (i.e., web-based training and classroom-based training programs), occurred naturally preceding the dependent variables, evaluation practices (i.e., four components of evaluation and evaluation barriers) for the training approaches in organizations. The researcher proposed to investigate the relationship between the type of training approach and evaluation practices used by HRD professionals after controlling for demographic variables. Therefore, ex post facto research was the most appropriate method to be used quantitatively for this study.

Second, qualitative research was used in this study to explore the research questions in more depth. Qualitative research is described as “the non-numerical examination and interpretation of observations, for the purpose of discovering underlying
meanings and patterns of relationships” (Babbie, 1992). The purpose of qualitative research is to acquire an in-depth understanding of the specific populations or situations being studied. It usually looks for patterns and meanings that explain "how and why" questions through direct observation and interviews.

Qualitative research helps the researcher identify key elements that contribute to phenomena, examine varied perspectives within the process and, develop a deep understanding of phenomena or supplement quantitative data gathered from same setting (Kuhn, 1961; Pattern, 2002; Denzin & Lincoln, 2005). In this study, interviews were used to gather qualitative data after collecting the survey questionnaire. Open-ended interviews were used to collect HR or HRD directors’ opinions, thoughts, and feelings in order to gain more depth information about the research questions.

Research Setting

This study focused on Korean companies where web-based and/or classroom-based training programs are implemented and evaluated. To be selected as suitable research settings, companies have to include the following five criteria:

1. Companies selected provide and evaluate web-based and/or classroom-based training programs to improve employees’ competence;

2. Companies selected have a separate HRD or training department in their organizations;

3. Companies selected have HRD professionals who conduct evaluation of web-based and/or classroom-based training programs;
4. Companies selected have HR or HRD directors who receive the final evaluation reports from their subordinates and have an extensive understanding of training evaluation; and,

5. Companies selected represent varied types of organizations.

Considering these criteria, the researcher selected seven companies in Korea where web-based and classroom-based training programs were implemented and evaluated. The seven companies selected have been recognized as leaders to develop the national economy in Korea and also have grown into globally competitive businesses in various business fields. These companies represent a variety of industries in Korea, including food, chemical manufacturing, automobile manufacturing, financial services, IT services, and educational services industries.

The number of total employees in each organization varies from 400 to 75,000 and the total revenue of the companies’ ranges, as of 2007, from $30 billion to $1.5 million. All the companies are headquartered in Seoul, Korea, with branch offices in many regional cities across the nation and around the world.

To sustain competitive advantages nationally and globally, these companies take developing human expertise seriously, each one having a separate HRD department or training team in their organizations. In their HRD systems, they also establish training management systems to improve employees’ competence. The main function of a training management system is to provide various web-based courses and training information and to administer and manage individual training programs. Overall, most companies chosen for the study are large-sized, which means that they rely significantly on web-based training programs to provide training for their multiple branch locations and large numbers of employees. They also have their own training centers in the
headquarters or branch offices to provide training programs, including classroom-based training. After training has been completed, the HRD departments or training teams in the seven companies conduct internal evaluations of their training programs. Consequently, these seven companies selected were good fits as research settings for this study.

Participant Selection

Two data sets were used for the study. One set of data was gathered from a survey questionnaire distributed to HRD professionals. The other was gathered from interviews with HR/HRD directors.

Survey to HRD Professionals

The population for this study was all HRD professionals who currently evaluated web-based and/or classroom-based training programs within the seven companies in Korea. The total number of population was 147 HRD professionals and the researcher studied the entire population. Of these, the total number of respondents was 73. Out of the 73 respondents, 69 respondents had experience in the evaluation of classroom-based training programs, whereas 43 had experience in the evaluation of web-based training programs. The researcher obtained the lists of the actual HRD professionals from the departments of HRD or HR/HRD directors in each organization by the end of October of 2008.

Interviews with HR or HRD Directors

To obtain qualitative data, the researcher conducted individual interviews with HR or HRD directors. The participants were all current directors in the departments of HR or HRD in the seven companies selected. Current directors were chosen for the interviews because they received the final evaluation reports from their subordinates. In addition, they were senior managers who managed the whole HR or HRD systems in
their organizations and thus had a comprehensive understanding of training evaluation. Furthermore, they were generally training experts who had Ph.D. degrees in the HR or HRD field.

The researcher obtained contact information for three HR or HRD directors at the companies being studied from the departments of HRD or training teams in each organization to contact, and directly contacted the rest of the HR or HRD directors who already had known about the study by the end of October of 2008. The researcher informed them of the purpose, importance, confidentiality of this study, and asked their willingness to participate in the study. Five out of seven HR/HRD directors agreed to participate in this study and were interviewed. Interviews were conducted via either phone or face to face, whatever was most convenient for them, and supplementary follow-up phone calls were made in February of 2009, when necessary.

Instrumentation

The instruments were developed based on an extensive review of the literature related to web-based and classroom-based training, training evaluation in HRD, evaluation competency models, and evaluation practices in organizations related to web-based and classroom-based training programs. Based on this review, the researcher adapted Jacobs’ evaluation framework (2003) that was based on the systems approach to four components of evaluation and Alkin’s framework (1985) for evaluation barriers. Then, she developed new construct scales based on these established constructs to fit this study’s purpose. This section goes on to discuss validity and reliability issues related to the instruments.
For the survey questionnaire for HRD professionals, the researcher designated one independent variable with two levels: web-based and classroom-based training programs. Two dependent variables were measured in this study: the four components of evaluation and three factors of evaluation barriers. All variables were operationalized as follows:

**Independent variable.** Types of training approaches (i.e. web-based or classroom-based) served as an independent variable. Web-based training referred to a media-led training approach in which the content was delivered via the internet/intranet using a computer. Classroom-based training referred to an instructor-led training approach in which the content was delivered face-to-face via instructor.

**Dependent variables.** The four components of evaluation and evaluation barriers served as dependent variables. The four components of evaluation referred to the extent to which input, process, output, and organizational context components of evaluation were used by HRD professionals to evaluate their web-based and classroom-based training programs. Input evaluation component referred to the extent of the use of evaluation questions, asked before conducting training. Process evaluation component referred to the extent of evaluation questions, asked during training. Output evaluation component referred to the extent of the use of evaluation questions, asked after training had been completed. Lastly, organizational context evaluation component referred to the extent of the use of evaluation questions, asked about an organizational context that affected training.
Evaluation barriers referred to the degree to which HRD professionals perceived barriers to evaluating web-based and classroom-based training programs, based on three factors affecting evaluation: human, context, and evaluation factors. First, human factor referred to the degree that barriers were perceived by HRD professionals relating to the evaluator and stakeholder characteristics. Second, context factor referred to the degree that barriers were perceived by HRD professionals relating to the context in which the evaluated training program existed. Third, evaluation factor referred to the degree that barriers were perceived by HRD professional relating to the actual conduct and reporting of evaluation.

Instrument Design

This survey was composed of four parts. Part one asked whether HRD professionals had experience in evaluating web-based and/or classroom-based training programs. Respondents were asked to answer either YES or NO, regarding their experience with the evaluation of web-based and classroom-based training programs.

Part two asked about the extent to which HRD professionals evaluated their web-based and classroom-based training programs for the four components of evaluation. Respondents were asked to identify the frequency with which they used evaluation questions, according to the input, process, output, and organizational context components of evaluation for these training approaches.

Respondents completed 35 items to identify individual actions in evaluating classroom-based training programs for the four scales. For web-based training programs, respondents completed 45 items to identify individual actions according to the four scales. Among these items, respondents were asked to answer the same 10 items for input evaluation component, 12 items for process evaluation component, 7 items for output
evaluation component, and 6 items for organizational context evaluation component for both training approaches.

However, respondents who had experience in evaluating web-based training programs were asked additionally to answer 6 more items in input evaluation component in order to examine the evaluation elements that are unique for web-based training programs. They were also asked to answer 4 more items in process evaluation component to examine the unique evaluation elements for web-based training programs. The portion of the survey asking about those items consisted of a five-point Likert-type scale ranging from 1 (never) to 5 (always), with higher scores indicating more frequently use of evaluation questions, asked in the four components of evaluation.

Part three asked about the degree to which HRD professionals perceived barriers to evaluating their web-based and classroom-based training programs. Respondents were asked to assess the degree of agreement on each statement in evaluating web-based and classroom-based training programs based on three factors regarding barriers, that is, human, context, and evaluation factors. Respondents completed 33 items to measure individual perception on each statement under the three scales. This section in the survey consisted of a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree), with lower scores indicating more barriers perceived by HRD professionals.

Part four asked about demographic data. First, the organizations represented in this study were classified into six types of business fields: (a) food, (b) automobile manufacturing, (c) chemical manufacturing, (d) financial services, (e) IT services, and (f) educational services. Second, each HRD team was asked to provide the number of total employees currently in the company by choosing among five categories: (a) less than 500,
(b) 501-1000, (c) 1,001-3,000, (d) 3,001-5,000, and (e) over 5,001. Third, each HRD team was asked to provide the year that the organization had been conducting training programs, by choosing among five categories: (a) less than 1 year, (b) 1-3 years, (c) 4-6 years, (d) 7-10 years, and (e) more than 11 years.

Fourth, respondents were asked to describe their job level: (a) frontline employee, (b) assistant manager, (c) manager, or (d) director. Fifth, respondents were asked to describe their educational level: (a) high school, (b) college, or (c) graduate school. Lastly, respondents were asked to provide the percentage of their work that was related to training evaluation by selecting one of four categories: (a) less than 25%, (b) 26-50%, (c) 51-75%, and (d) more than 76%.

Validity

Validity refers to the extent to which an instrument measures what it purports to measure (Ary et al, 2002). A test of content validity should be conducted to examine whether the instrument covers a representative sample of the content area to be measured (Anatasi & Urbina, 1997). To ensure the instrument’s content validity, the instrument was adapted from Jacobs’ evaluation framework of *The Structured On-The-Job Training* (2003) for the four components of evaluations and from Alkin’s framework of *A Guide for Evaluation Decision-Makers* (1985) for the part on the evaluation barriers.

In addition, a panel of experts reviewed the items on the instrument. The panel of experts consisted of a professor in research methodology/statistics, a professor who has expertise in evaluation and teaches a graduate class in research, a HRD professor who has expertise on training evaluation, a HRD scholar who has expertise in training evaluation, and a Korean visiting scholar who has expertise in training. The panel of five experts commented on the design and layout of the instrument, checked the clarity and
appropriateness of the items, and reworded items, if necessary, to ensure that they accurately represented the content area intended (Anatasi & Urbina, 1997).

**Translation of Instrument to Korean**

The English version of the instruments was translated to the Korean version by the researcher. Then, the Korean versions were reviewed by three Korean Ph.D. students in the HRD field, a Korean HRD director from a bank, and a Korean training specialist from an automobile company. All of these individuals speak both English and Korean. They provided their opinion about whether the items were clear to understand and whether there was any confusing and awkward wording in the Korean versions.

After gaining their consensus on the items, the researcher retranslated the Korean versions of the instruments to the English versions. Then, she compared the revised English versions with the originals to examine whether any different meanings existed in the instrument.

**Reliability**

Reliability is defined as the extent to which a measure yields consistent results (Ary et al., 2002). To test a survey questionnaire for reliability, a pilot test can be conducted. A pilot test helps the researcher assess the appropriateness and practicality of the survey questionnaire (Ary et al.). However, it was not possible to include a pilot test in this study because the survey questionnaire was distributed to the entire population in the selected companies.

To ensure the reliability of the survey questionnaire, the internal consistency was assessed using the data from the actual study. The internal consistency measures whether items of a construct are inter-correlated and produce the same scores in the same construct (DeVellis, 2003). Cronbach’s alpha coefficient was employed to measure
internal consistency of the items. It ranges from 0 to 1, and scores from .7 to .9 is accepted for the instrument (McMillan & Schumacher, 1997; Vogt, 1999).

<table>
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<th>Web-based Training</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
<td>Process Evaluation</td>
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<td>Organizational Context Evaluation</td>
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<td>.826</td>
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Table 3.1: Cronbach’s Alpha Coefficients for the Survey Responses on the Four Components of Evaluation (N= 73)

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<tbody>
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<td>.857</td>
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<td>Organization factor barrier</td>
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<td>.902</td>
</tr>
<tr>
<td>Evaluation factor barrier</td>
<td>.928</td>
<td>.933</td>
</tr>
</tbody>
</table>

Table 3.2: Cronbach’s Alpha Coefficient for Survey Responses on the Three Factors of Evaluation Barriers (N= 73)

**Interview with HR or HRD Directors**

**Instrument Design**

The open-ended interview was composed of four main questions to explore how HRD professionals evaluated their web-based and classroom-based training programs differently in more depth. The first questions asked about how web-based and classroom-based training programs were implemented and evaluated in their organizations.
differently. Respondents were asked to describe how these training approaches differed based on a constructivist approach.

The second set of questions asked about the factors that inhibited the evaluation of these training approaches. Respondents were asked whether there were differences between web-based and classroom-based training programs in evaluation barriers. The third question asked about what expectations HR/HRD directors had for the evaluations. Respondents were asked what kind of information they looked for from the evaluations and how they used the results of the evaluation. The final question asked about their overall feelings, thoughts, and concerns about the evaluation of web-based/classroom-based training programs in their organization.

Validity and Reliability in Qualitative Research

Patton (2002) addresses that validity and reliability is also important issues in qualitative research as well as in quantitative research. However, qualitative researchers use different standards for judging the quality of the research. The value of the qualitative research depends on the ability and effort of the researcher, joined with readers’ actions and perspectives. This is because, while the validity and reliability in quantitative research depends on instrument construction, in qualitative research, the researcher is the instrument (Lincoln & Guba, 1985; Patton, 2002).

Credibility

In qualitative research, credibility refers to internal validity. Credibility depends more on the richness of the information gathered and on the analytical abilities of the researcher than on sample size (Patton, 2002). The credibility in this study was enhanced based on rich data, the approval of research findings by interviewees and peers, and control of bias (Maxwell, 2005; Miles and Huberman, 1994; Patton, 1990). Maxwell
states that rich data that provide detailed and full descriptions of a phenomenon is required for credibility. To collect rich data, verbatim transcripts of the interviews and detailed note taking is required. The researcher audio-taped and transcribed all interviews word by word and took field notes recording the interviewees’ actions during interview.

Second, consensus is defined as “agreement among competent others that the description, interpretation, evaluation, and thematics are right” (Eisner, 1998, p.112, as cited in Ary et al., 2002). To ensure consensus and reduce bias in this study, a Ph.D. student who majored in English and had experience in a qualitative research was provided raw data (after pseudonyms were given to all interviewees) to drive main themes from the data, and then the researcher compared her results with the researcher’s analysis. In addition, she was also asked to comment on the researcher’s findings, and then the researcher incorporated this feedback into her findings.

Third, Miles and Huberman (1994) state that the researcher’s interpretations of what transcribed could be not actually spoken by interviewees, and thus should be approved by interviewees. To reduce the researcher’s bias in this study, the verbatim transcripts were shared with interviewees to ensure whether the researcher’s interpretation of the interviewees’ statements were consistent with the transcripts and to obtain mutual understanding between the researcher and interviewees. However, the researcher did not receive any feedback from the interviewees.

**Dependability**

In qualitative research, dependability closely corresponds to the notion of reliability in quantitative research. Stenbacka (2001) argues that the issue of reliability has no relevance in qualitative research since it concerns measurements. In addition, Patton (2002) states that reliability is a consequence of the validity in a study, and since
there can be no validity without reliability, a demonstration of validity is sufficient to establish reliability.

Research Procedures

Data Collection

In order to protect the rights and welfare of human research subjects, this research obtained approval from the Institutional Review Board (IRB) of the Ohio State University in December 2008. After IRB approval, the data for survey questionnaire were collected from 73 HRD professionals at seven Korean companies via online. After collecting the questionnaire, the data for interview were collected from five HR or HRD directors via face to face or phone to gain more in-depth information that was difficult to adequately describe a situation in the survey questionnaire. The following section describes how these two instruments were collected and analyzed.

Survey to HRD professionals

Prior to distributing the online questionnaire, the researcher contacted HRD representatives or directors via e-mail or phone to explain the purpose of this study and asked about their willingness to participate in the study, providing them with a description of the study. After they agreed voluntarily to participate in the study, the HRD representatives or directors provided the researcher with lists of the HRD professionals who evaluated web-based and/or classroom-based training programs in their organizations. Some of HRD representatives informed the researcher that they would distribute the anonymous web-based survey directly to their HRD professionals.

In December 2008, the web-based survey questionnaire was distributed to HRD representatives or professionals by email, and, as part of the email, a cover letter with the
logo of The Ohio State University at the top of the page was also sent explaining the purpose, importance, and confidentiality of the study and providing the URL for the questionnaire.

Ten days after the web-based surveys were sent out, a reminder email was sent with a message encouraging the participants to complete the questionnaire if they had not yet done so and thanking those who had. To increase the response rate, additional efforts were made by making phone calls or sending emails to the participants twice prior to the deadline of the survey.

*Interview with HR or HRD directors*

After the survey questionnaire was collected, interviews were held with the HR/HRD directors between January and February of 2009 in order to allow them to offer their professional perspectives about the research questions in more depth. Prior to the interviews, a cover letter was provided to the participants explaining the purpose, importance, and confidentiality of the study. Then, open-ended questions were distributed in advance to the directors who had volunteered for the study. The researcher also informed them that she would make a tape recording of the information that they provided and would delete the tape after transcribing it.

The researcher chose to conduct either face-to-face or phone interviews to collect the in-depth data for the following reasons. First, this format allows the researcher not only to repeat questions to interviewees if they do not understand questions asked, but also to provide interviewees with more detailed information related to the questions when their answers are not relevant or complete (Ary et al., 2002). Second, it allows the researcher to interview the participants individually, so she can examine how the
participants respond differently to questions based on their professional experiences in different contexts (Mann & Stewart, 2000).

Third, this individual interview ensures protection of the participants’ privacy. The participants did not have any opportunity to see and communicate each other, so the researcher kept their responses confidential. Lastly, the researcher was located at a distance from the participants. Using the telephone dramatically reduces the costs and time of traveling to Korea from the United States. The researcher had phone interviews with three directors and had face-to-face interviews with two interviewees who visited Columbus, Ohio on their own business. To encourage their participation in the interview process, additional effort was made by sending additional emails or making phone calls. After collecting the interview data from the directors, the researcher made phone calls to them to clarify and specify their responses, when necessary.

Data Analysis

First, the data from the survey questionnaire was analyzed using the Statistical Package for the Social Science (SPSS). Descriptive statistics such as frequency, percentage, mean for population (μ), and sigma for population (σ) were used to describe the evaluation practices used by Korean HRD professionals and compare the differences between web-based and classroom-based training programs in the evaluation practices. In addition, multiple regression analysis was conducted to examine the relationship between demographic variables of HRD professionals and the evaluation practices used for web-based and classroom-based training programs. Second, the data from the interview was read, coded, and analyzed by the researcher to seek a deeper understanding of these relationships in the natural setting.
Survey to HRD professionals

At first, the demographic characteristics of the companies and the respondents were analyzed to determine descriptive statistics such as frequencies and percentages. The demographic characteristics of companies were industry type and size, and an organization’s years of conducting training programs. The size of the company was measured based on the number of employees reported by each department of HRD or training team. The demographic characteristics of respondents were their job level, educational level, and percent of employee’s work that is related to training evaluation.

Next, the proposed research questions were analyzed as following.

Research Question 1: How do HRD professionals evaluate their web-based and classroom-based training programs for each evaluation component?

For this research question, descriptive statistics including frequency, percent, mean for population (µ), and sigma for population (σ) were used to describe how the HRD professionals evaluated their web-based training programs for the input, process, output, and organizational context components of evaluation.

In the same way, descriptive statistics including frequency, percent, mean for population (µ), and sigma for population (σ) were used to describe how the HRD professionals evaluated their classroom-based training programs for the input, process, output, and organizational context components of evaluation.

Additionally, descriptive statistics including frequency, percent, mean for population (µ), and sigma for population (σ) were used to describe how the HRD professionals evaluated the unique elements of web-based training programs for the input and process components of evaluation.
Research Question 2: Are there differences between web-based and classroom-based training programs for each evaluation component?

Data for mean for population (μ) were used to compare the differences between web-based and classroom-based training programs for the input, process, output, and organizational context components of evaluation.

Research Question 3: What is the relationship between the demographic characteristics of HRD professionals and the practices used to evaluate web-based and classroom-based training programs for each evaluation component?

For this research question, multiple regression analysis was used to examine the relationship between the demographic characteristics of HRD professionals and the practices used to evaluate web-based and classroom-based training programs for the four components of evaluation. The six demographic characteristics were classified as follows: (a) type of industry, (b) number of employees, (c) organization’s years of conducting training programs, (d) employee’s job level, (e) employee’s educational level, and (f) percent of employee’s work that is related to training evaluation. Dummy coding was assigned to all six demographic variables, since they were measured by nominal or ordinal scales.

The squared multiple correlations were calculated to examine the percentages of the variances in the four components of evaluation for web-based and classroom-based training programs according to each demographic variable for HRD professionals.

Research Question 4: What barriers prevent HRD professionals from evaluating web-based and classroom-based training programs?

For this research question, descriptive statistics including frequency, percent, mean for population (μ), and sigma for population (σ) were used to summarize data on
the barriers perceived by HRD professionals to evaluating web-based training programs, based on human, context, and evaluation factors.

In the same way, descriptive statistics including frequency, percent, mean for population (μ), and sigma for population (σ) were used to summarize data on the barriers perceived by HRD professionals to evaluating classroom-based training programs, based on human, context, and evaluation factors.

**Research Question 5: Are there differences in the barriers to evaluating web-based and classroom-based training programs?**

For this research question, the mean for population (μ) was used to compare the differences between web-based and classroom-based training programs in the three factors of evaluation barriers.

**Research Question 6: What is the relationship between the demographic characteristics of HRD professionals and the barriers to evaluating web-base and classroom-based training programs?**

For this research question, multiple regression analysis was used to examine the relationship between the demographic characteristics of HRD professionals and the barriers to evaluating web-base and classroom-based training programs. The six demographic characteristics were classified as follows: (a) type of industry, (b) number of employees, (c) organization’s years of conducting training programs, (d) employee’s job level, (e) employee’s educational level, and (f) percent of employee’s work that is related to training evaluation. Dummy coding was assigned to all six demographic variables, since they were measured by nominal or ordinal scales.
The squared multiple correlations were calculated to examine the percentages of the variances in the three factors of evaluation barriers for web-based and classroom-based training programs according to each demographic variable for HRD professionals.

*Interview with HR or HRD directors*

The researcher used interview data to gain in-depth information for the research questions. After the researcher obtained each statement either face-to-face or by phone, she first transcribed each statement in Korean and then translated it into English. The analysis of transcripts was an ongoing process during the interviews (Maxwell, 2005). Thus, as soon as the researcher finished the first interview with a HRD director, she transcribed his statement and started coding. The interview procedures were consistent for each participant.

To generate codes, the researcher highlighted words or phrases that described important themes or meaning using different colors, and labeled each code with a term in the margins of the transcripts. This coding helps the researcher not only understand a phenomenon in the study but also determine whether sufficient data exist to support the interpretation (Ary et al., 2002). Using these codes, she created tentative categories and subcategories for each statement. Miles and Huberman (1994, cited in Taut & Alkin, 2003, p216) point out that a researcher should consider the following guidelines to design a category system:

1. Categories of the same “order” should have approximately the same level of abstraction.

2. The data should be described completely by the category systems; no relevant statements should be left uncoded. “Other” categories should be avoided or kept at a minimum.
3. Categories (or labels) need to be clearly defined so that other people arrive at the same categorizations. This includes minimal overlap between the categories within one category system.

By following these guidelines, the researcher repeatedly read each statement and endeavored to clearly define categories as well as kept codes semantically close to the terms they represented. She also deliberately generated categories based on the research questions of this study (Miles & Huberman, 1994).

After categorizing each statement, the researcher compared the categories for all other respondents’ statements to find similarities and differences among categories of statements and to examine new themes to determine their distinctive characteristics. When she found no similar theme in a statement from others, she formed a new category. For example, Sam was talking about the political issues related to online courses, which were not mentioned in other interviews, so a new category was created. In addition, the researcher counted the frequency of each code’s appearance to determine its prevalence in all data and placed every code into categories.

In the analysis process, a Ph.D. student who had experience in a qualitative research independently coded and categorized transcripts, and the result was compared with the researcher’s analysis work. Field notes from during the interview were used to resolve any questions when the student and the researcher had different opinions about the analysis work (Van Manen, 1998). These issues were discussed and revised until the consensus was reached between the researcher and the Ph.D. student. After this, the categories emerged and transcripts were shared with participants to ensure the researcher’s interpretations were actually what they meant.
Next, the codes, categories, and subcategories that emerged were used to construct metrics for data. The comments and quotations from each interviewee were grouped by thematic elements by the individuals who made the contribution, and memos and comments by the researcher during and after interview were included. Theses metrics were used to identify comparisons and patterns related to the research questions (Maxwell, 2005).

In the first matrix, the researcher compared the demographic information from the five HR/HRD directors interviewed. In the second matrix, she compared categories and subcategories to investigate the differences and similarities as well as the patterns and processes between web-based and classroom-based training programs for the four components of evaluation. In the third matrix, she compared categories and subcategories to investigate the differences and similarities as well as the patterns and processes between web-based and classroom-based training programs according to the three factors of evaluation barriers. In the fourth matrix, she compared categories and subcategories to identify important decision factors that determined how HRD professionals evaluated their web-based and classroom-based training programs.

In the final phrase of data analysis, the researcher read all the transcripts once again to examine whether the generated themes were connected with actual statements. Using a computer, the researcher put all quotes that belonged to the same codes that had emerged from the analysis of interviews together, and produced a new electronic document file. These complied quotes for each code were also used to compare similarities, differences, and patterns (Maxwell, 2005). Finally, she integrated and synthesized data.
CHAPTER 4

RESULTS

This section presents the results of the study. This section has two parts. Part one presents the survey and interview results of the demographic information of the respondents. Part two presents the survey and interview results of seven research questions.

Demographic Information of the Respondents

Survey Results

The survey data were collected from HRD professionals in seven companies located in Korea who evaluated web-based and/or classroom-based training programs. The original frame included 154 HRD professionals. However, the researcher did not send a cover letter and distribute the web-based survey to seven participants because their email addresses were invalid, leaving the total number in the frame at 147. Of these, the total number of respondents was 73, an overall response rate of 49.66%. Out of the 73 respondents, 69 respondents (94.5%) had experience in the evaluation of classroom-based training programs, while 43 (58.9%) had experience in the evaluation of web-based training programs.

The demographic information collected for respondents included: type of organization, type of industry, number of employees, years of conducting training programs, employee’s job level, employee’s educational level, and percent of employee’s
work that is related to training evaluation. The frequencies and percentages for each of these categories were presented in table 4.1 and table 4.2. As shown in table 4.1, all respondents worked in the private sector and none worked in the public sector. A majority of respondents worked in automobile manufacturing (N=25, 34%), IT services (N=19, 26%), and financial services (N=17, 23%), followed by educational services (N=6, 8%), food (N=4, 6%) and chemical manufacturing (N=2, 3%).

The size of the organizations in this study was calculated by the number of employees. Most respondents worked in large-sized companies with more than 5,001 employees (N=42, 58%), followed by companies with between 3,001 and 5,000 employees (N=23, 32%). Only eight respondents worked in companies with less than 500 employees. None worked in a company that fell into the category of 501 to 3,000 employees. Regarding an organization’s years of conducting training programs, most of the organizations generally had been conducting training programs for at least one year (N=68, 93%); the years of conducting training years varied from 1 to 3 years (N=20, 27%), more than 11 years (N=18, 25%), from 4-6 years (N=15, 21%), and from 7 to 10 years (N=15, 21%).

For the job levels of employees, most respondents fell into the three job levels: frontline employees (N=20, 27%), assistant managers (N=24, 33%), and managers (N=21, 29%) – that were directly involved in the evaluation of training programs. The smallest category, that of directors (N=8, 11%), usually did not involve evaluations duties. This means that approximately 90% of evaluation work was distributed among three job levels: frontline employees, assistant managers, and managers, and assistant managers were slightly more involved in the evaluation of training programs than frontline employees and managers.
Regarding educational level, all of the respondents had completed at least a 4-year college degree. Over half of the respondents (N=46, 63%) had graduated from college, and the rest of them (N=27, 37%) completed a graduate degree as well. Regarding the percent of evaluation worked in their jobs, many of the companies and respondents did not put a high value on evaluation. For most respondents (N= 63, 86%), less than 25% of their job duties were involved in the evaluation of training programs. In other words, only 14% of respondents (N= 10) had more than 25% of their job tasks related to the evaluation of training programs. More specifically, 7 respondents (10%) engaged in more than 76% evaluation work, while 3 respondents (4%) estimated that 26 – 50% of their work was related to training evaluation, and no one stated that 51-75% of their tasks were related to the evaluation of training programs.

In summary, all of the companies that participated in this study were in the private sector and a majority of respondents worked in automobile manufacturing, financial services, or IT services. Most companies (64%) in this study were large-sized companies that had more than 5,001 employees, and, generally, had been conducting training programs more than one year. All respondents had at least a bachelor’s degree, while over a third of respondents also had a master’s degree. Although most respondents, from frontline employees to managers, were involved in the evaluation of training programs as a part of their jobs, 90% of respondents had less than 25% of their job tasks related to training evaluation. In other words, only 10% of respondents had more than 25% of their job tasks related to training evaluation.
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<td>More than 11 years</td>
<td>18</td>
<td>24.7</td>
</tr>
</tbody>
</table>

Table 4.1: Demographic Information of Organizations (N=73)
Table 4.2: Demographic Information of Respondents (N=73)

<table>
<thead>
<tr>
<th>Employee’s Job Level</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frontline employee</td>
<td>20</td>
<td>27.4</td>
</tr>
<tr>
<td>Assistant manager</td>
<td>24</td>
<td>32.9</td>
</tr>
<tr>
<td>Manager</td>
<td>21</td>
<td>28.8</td>
</tr>
<tr>
<td>Director</td>
<td>8</td>
<td>11.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employee’s Educational Level</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High school</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>College</td>
<td>46</td>
<td>63</td>
</tr>
<tr>
<td>Graduate school</td>
<td>27</td>
<td>27</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>% of Employee’s Work related to Training Evaluation</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 25%</td>
<td>63</td>
<td>86.3</td>
</tr>
<tr>
<td>26-50%</td>
<td>3</td>
<td>4.1</td>
</tr>
<tr>
<td>51-75%</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>More than 76%</td>
<td>7</td>
<td>9.6</td>
</tr>
</tbody>
</table>

Table 4.2: Demographic Information of Respondents (N=73)

A Comparison of Demographic Characteristics between Web-based and Classroom-based Training Programs.

Tables 4.3 and 4.4 show that there were few differences between web-based and classroom-based training programs in type of industry, number of employees, employees’ educational level, and percent of employees’ work related to training evaluation. Among the seven companies, the most respondents worked in automobile manufacturing company, whereas the least respondents worked in chemical manufacturing company.

Most companies in this study were large-sized companies with more than 5,001. Most respondents graduated from either colleges or graduate schools, but college graduates more engaged in evaluating web-based and classroom-based training programs than graduate school graduates. Lastly, over 80% of respondents had less than 25% of
their job tasks related to the training evaluation.

Despite these similarities, the results also showed that there were slight differences between web-based and classroom-based training programs in an organization’s years of conducting training programs and employees’ job level. Most organizations that evaluated web-based training programs had been conducting training programs for 4-6 years or more than 11 years, while those that evaluated classroom-based training programs had been conducting training programs from one to three years or more than 11 years. However, over 90% of organizations had been conducting their training programs for at least one year, whether evaluating web-based or classroom-based training programs.

Lastly, frontline employees and assistant managers were slightly more involved in the evaluation of web-based training programs, while assistant managers were slightly more involved in that of classroom-based training programs. However, the evaluation tasks, whether web-based or classroom-based training programs, were generally distributed across all three job levels: frontline employees, assistant managers, and managers.
<table>
<thead>
<tr>
<th>Type of Industry</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food company</td>
<td>3</td>
<td>7.0</td>
</tr>
<tr>
<td>Automobile manufac.</td>
<td>16</td>
<td>37.2</td>
</tr>
<tr>
<td>Chemical manufac.</td>
<td>2</td>
<td>4.7</td>
</tr>
<tr>
<td>Financial services</td>
<td>6</td>
<td>14.3</td>
</tr>
<tr>
<td>IT services</td>
<td>11</td>
<td>25.6</td>
</tr>
<tr>
<td>Educational services</td>
<td>5</td>
<td>11.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of Employee</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 500</td>
<td>5</td>
<td>11.6</td>
</tr>
<tr>
<td>501-1000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1,001-3,000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3,001-5,000</td>
<td>11</td>
<td>25.6</td>
</tr>
<tr>
<td>Over 5,001</td>
<td>27</td>
<td>62.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year of Conducting Training programs</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 year</td>
<td>3</td>
<td>7.0</td>
</tr>
<tr>
<td>1-3 years</td>
<td>9</td>
<td>20.9</td>
</tr>
<tr>
<td>4-6 years</td>
<td>12</td>
<td>27.9</td>
</tr>
<tr>
<td>7-10 years</td>
<td>7</td>
<td>16.3</td>
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<tr>
<td>More than 11 years</td>
<td>12</td>
<td>27.9</td>
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<tbody>
<tr>
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<td>34.9</td>
</tr>
<tr>
<td>Assistant manager</td>
<td>14</td>
<td>32.6</td>
</tr>
<tr>
<td>Manager</td>
<td>9</td>
<td>20.9</td>
</tr>
<tr>
<td>Director</td>
<td>5</td>
<td>11.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employee’s Educational Level</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High school</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>College</td>
<td>24</td>
<td>55.8</td>
</tr>
<tr>
<td>Graduate school</td>
<td>19</td>
<td>44.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>% of Employee’s Work related to Training Evaluation</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 25%</td>
<td>34</td>
<td>79.1</td>
</tr>
<tr>
<td>26-50%</td>
<td>3</td>
<td>7.0</td>
</tr>
<tr>
<td>51-75%</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>More than 76%</td>
<td>6</td>
<td>14.0</td>
</tr>
</tbody>
</table>

Table 4.3: Frequencies and Percentages on Four Components of Evaluations for Web-based Training Programs (N = 43)
### Table 4.4: Frequencies and Percentages on Four Components of Evaluations for Classroom-based Training Programs (N = 69)

<table>
<thead>
<tr>
<th>Type of Industry</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food company</td>
<td>4</td>
<td>5.8</td>
</tr>
<tr>
<td>Automobile manufac.</td>
<td>23</td>
<td>33.3</td>
</tr>
<tr>
<td>Chemical manufac.</td>
<td>2</td>
<td>2.9</td>
</tr>
<tr>
<td>Financial services</td>
<td>15</td>
<td>21.7</td>
</tr>
<tr>
<td>IT services</td>
<td>19</td>
<td>27.5</td>
</tr>
<tr>
<td>Educational services</td>
<td>6</td>
<td>8.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of Employee</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 500</td>
<td>8</td>
<td>11.6</td>
</tr>
<tr>
<td>501-1000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1,001-3,000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3,001-5,000</td>
<td>23</td>
<td>33.3</td>
</tr>
<tr>
<td>Over 5,001</td>
<td>38</td>
<td>55.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year of Conducting Training programs</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 year</td>
<td>3</td>
<td>4.4</td>
</tr>
<tr>
<td>1-3 years</td>
<td>20</td>
<td>29.0</td>
</tr>
<tr>
<td>4-6 years</td>
<td>15</td>
<td>21.7</td>
</tr>
<tr>
<td>7-10 years</td>
<td>15</td>
<td>21.7</td>
</tr>
<tr>
<td>More than 11 years</td>
<td>16</td>
<td>23.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employee’s Job Level</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frontline employee</td>
<td>19</td>
<td>27.5</td>
</tr>
<tr>
<td>Assistant manager</td>
<td>23</td>
<td>33.3</td>
</tr>
<tr>
<td>Manager</td>
<td>19</td>
<td>27.5</td>
</tr>
<tr>
<td>Director</td>
<td>8</td>
<td>11.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employee’s Educational Level</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>High school</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>College</td>
<td>43</td>
<td>62.3</td>
</tr>
<tr>
<td>Graduate school</td>
<td>26</td>
<td>37.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>% of Employee’s Work related to Training Evaluation</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 25%</td>
<td>60</td>
<td>87.0</td>
</tr>
<tr>
<td>26-50%</td>
<td>3</td>
<td>4.3</td>
</tr>
<tr>
<td>51-75%</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>More than 76%</td>
<td>6</td>
<td>8.7</td>
</tr>
</tbody>
</table>
Interview Results

The five individuals who were interviewed are described in detail, with a focus on their organizational contexts and their experiences related to training evaluation.

John

John works for one of Korea’s leading financial investment companies. The company has grown into a multi-national corporation since being established 30 years ago. The total revenue of the company is, as of 2007, about $60 million and it has about 3,500 employees. The company has a separate HRD center, where eight HRD professionals have responsibility for conducting and evaluating training programs. Four out of the eight HRD professionals are in charge of all training events and activities for new employees, including the design, development, implementation, and evaluation of training programs, while the other four HRD professionals worked with experienced employees.

Generally, the HRD professionals at John’s company use existing evaluations tools – mostly survey forms – to evaluate training programs. John has been working in the HRD center as an HRD director for five years. He receives the final reports of training evaluations from his subordinates and, upon request, reports the results to senior management or the directors who are directly relevant to the results. For the evaluation of web-based courses, the results are sent directly to each branch manager and the branch managers report them to headquarters directors.

Jim

Jim works at an educational services company ranked in the top ten in Korea. The size of the company is approximately 400 employees and the total revenue of the company is, as of 2007, about $1.5 million. A total of five HRD professionals work in the
company’s training center, designing, developing, and facilitating training programs for their employees. Their job functions are divided in two groups; one group (three HRD professionals) works on classroom-based training programs and the other (two HRD professionals) works on web-based training programs. They mostly evaluate trainees’ satisfaction, with their training programs, using Kirkpatrick’s four levels of evaluation. This evaluation is only used as a reference when they report the results of training programs to senior management.

Jim has been working as an HRD director in the training center for eight years. The results of the training programs are reported from the HRD professionals to an HRD director and to relevant department directors and from the directors to senior management or external clients.

Mike works with the largest investment company in Korea, established over 40 years ago. His company has extended its business overseas, to areas such as the United States, Japan, Hong Kong, Great Britain, as well as having many branch offices nationally. The total revenue of the company is, as of 2007, $20 billion and the number of employees is over 20,000. The company has many regional HRD centers in the nation. Mike has been working as an HRD director in the central HRD center for seven years.

In his HRD center, ten HRD professionals engage in implementing and evaluating training programs. Five out of the ten HRD professionals are involved in the evaluation of classroom-based training programs, while the other five work on web-based training programs. To evaluate training programs, they mostly use existing survey forms to examine trainees’ satisfaction with the training. Mike is generally the person who
receives the final results of the training evaluation from his subordinates, but sometimes he reports the results to senior management, as requested.

Sam

Sam works for a world-leading automobile manufacturing company, established about 40 years ago. The company has many branch offices around the world. The total annual revenue of the company is approximately, as of 2007, $30 billion with about 70,000 employees worldwide. The company has many HRD centers in Korea. Sam has been working in one of his company’s HRD centers for 11 years. In his HRD center, approximately 35 HRD professionals are responsible for conducting and evaluating training programs. Around 30 out of the 35 are in charge of conducting classroom-based training programs at any given time, while the other five work on web-based training programs.

The job functions of these two groups are not always clearly separated between conducting web-based or classroom-based training programs. Individual employees will implement and evaluate either web-based or classroom-based training based on their different assignments. For example, if an HRD professional is assigned to facilitate a web-based training program, he is in charge of the whole process, including all training activities related to that web-based training program. However, that employee also can be assigned to facilitate a classroom-based training program. This whole process includes providing employees with web-based and/or classroom-based training programs, distributing and collecting survey forms from trainees for training evaluation, and reporting their results to a HRD director and the relevant department’s directors. The final results of the training evaluations are reported to Sam, the HRD director, and the relevant department’s director.
Shawn works for one of the largest Information Technology (IT) companies in Korea, which was established about 40 years ago. His company has extended its business to Asia and the United States. Its total revenue is approximately $10 billion, as of 2007, and it has over 4,000 employees. A total of 23 HRD professionals work in the department of HRD. 17 out of the 23 HRD professionals operate all the training events and activities for classroom-based training programs, whereas the other six are involved in facilitating web-based training programs.

As with Sam’s company, the HRD professionals’ job functions are not clearly separated between web-based and classroom-based training programs. However, most of the HRD professionals work primarily with one of the two types of training approaches. In other words, they do not interchangeably conduct and evaluate both web-based and classroom-based training programs. Shawn has been working as a director for four years in this company and he usually receives the final results of the training evaluations from his subordinates, but he also reports the results to the relevant department’s directors or senior management, as necessary. In his company, most HRD professionals use existing evaluation tools, that is, surveys, and mostly conduct lower-level of training evaluations such as reaction and knowledge tests.

Research Question 1: How do HRD professionals evaluate their web-based and classroom-based training programs for each evaluation component?

Survey Results

Table 4.5 presents the means and standard deviations on how HRD professionals evaluated their web-based training programs for input, process, output, and
organizational context components of evaluation. Table 4.5 presents how the respondents perceived that web-based training programs were most frequently evaluated for the process evaluation component ($\mu = 4.02, \sigma = 0.75$), followed by the input evaluation component ($\mu = 3.7, \sigma = 0.86$). Correspondingly, the respondents perceived that web-based training programs were least frequently evaluated for the organizational context evaluation component ($\mu = 3.03, \sigma = 0.85$), followed by the output evaluation component ($\mu = 3.12, \sigma = 0.85$).

Table 4.6 presents the means and standard deviations on how HRD professionals evaluated their classroom-based training programs for input, process, output, and organizational context components of evaluation. As shown in Table 4.6, the same result emerged with web-based training. That is, the respondents perceived that classroom-based training programs were most frequently evaluated for the process evaluation component ($\mu = 4.29, \sigma = .56$), followed by the input evaluation component ($\mu = 3.78, \sigma = .59$).

The respondents perceived that classroom-based training programs were least frequently evaluated for the organizational context evaluation component ($\mu = 2.93, \sigma = .93$), followed by the output evaluation component ($\mu = 3.46, \sigma = .74$). Among the four components of evaluation for both web-based and classroom-based training programs, classroom-based training programs were most frequently evaluated for the process evaluation component, whereas classroom-based training programs were least frequently evaluated for the organizational context evaluation component.

In table 4.7, mean for population ($\mu$) and sigma for population ($\sigma$) were presented to describe how HRD professionals evaluated the unique elements of web-based training programs in the areas of input and process components of evaluation. As shown in table
4.7, the same result produced with web-based and classroom-based training. That is, the respondents perceived that the unique elements of web-based training programs were most frequently evaluated for the process evaluation component ($\mu = 4.05, \sigma = .80$), followed by the input evaluation component ($\mu = 3.85, \sigma = .95$).
### Table 4.5: Descriptive Statistics on Web-based Training Programs for Input, Process, Output, and Organizational Context Components of Evaluation (N=43)

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Included</th>
<th></th>
<th>Excluded</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Input</td>
<td>3.698</td>
<td>.858</td>
<td>43</td>
<td>58.9%</td>
<td>30</td>
<td>41.1%</td>
<td>73</td>
<td>100.0%</td>
</tr>
<tr>
<td>Process</td>
<td>4.024</td>
<td>.746</td>
<td>43</td>
<td>58.9%</td>
<td>30</td>
<td>41.1%</td>
<td>73</td>
<td>100.0%</td>
</tr>
<tr>
<td>Output</td>
<td>3.116</td>
<td>.858</td>
<td>43</td>
<td>58.9%</td>
<td>30</td>
<td>41.1%</td>
<td>73</td>
<td>100.0%</td>
</tr>
<tr>
<td>Context</td>
<td>3.033</td>
<td>.849</td>
<td>43</td>
<td>58.9%</td>
<td>30</td>
<td>41.1%</td>
<td>73</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

### Table 4.6: Descriptive Statistics on Classroom-based Training Programs for Input, Process, Output, and Organizational Context Components of Evaluation (N=69)

<table>
<thead>
<tr>
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<th>Mean</th>
<th>Std. Deviation</th>
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<th></th>
<th>Excluded</th>
<th></th>
<th>Total</th>
<th></th>
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</thead>
<tbody>
<tr>
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<td>69</td>
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</tr>
<tr>
<td>Process</td>
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<td>.562</td>
<td>69</td>
<td>94.5%</td>
<td>4</td>
<td>5.5%</td>
<td>73</td>
<td>100.0%</td>
</tr>
<tr>
<td>Output</td>
<td>3.458</td>
<td>.738</td>
<td>68</td>
<td>93.2%</td>
<td>5</td>
<td>6.8%</td>
<td>73</td>
<td>100.0%</td>
</tr>
<tr>
<td>Context</td>
<td>2.928</td>
<td>.926</td>
<td>69</td>
<td>94.5%</td>
<td>4</td>
<td>5.5%</td>
<td>73</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Table 4.5: Descriptive Statistics on Web-based Training Programs for Input, Process, Output, and Organizational Context Components of Evaluation (N=43)

Table 4.6: Descriptive Statistics on Classroom-based Training Programs for Input, Process, Output, and Organizational Context Components of Evaluation (N=69)
<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Included</th>
<th>Excluded</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Percent</td>
<td>N</td>
<td>Percent</td>
<td>N</td>
</tr>
<tr>
<td>Input</td>
<td>3.853</td>
<td>.949</td>
<td>43</td>
<td>58.9%</td>
<td>30</td>
</tr>
<tr>
<td>Process</td>
<td>4.054</td>
<td>.799</td>
<td>43</td>
<td>58.9%</td>
<td>30</td>
</tr>
</tbody>
</table>

Table 4.7: Descriptive Statistics on Web-based Training Programs for Input and Process Components of Evaluation (N=43)
Interview Results

After a few questions related to the participants’ backgrounds, the researcher asked questions about how they conducted and evaluated web-based and classroom-based training in their organizations. To measure the interview data, the researcher extracted categories from all the statements and then used the four components of evaluation (input, process, output, and organizational context) as an organizing structure.

Table 4.8 shows the category system and the response frequencies of how often web-based and classroom-based training were evaluated in the five companies. All five companies evaluated their web-based and classroom-based training programs primarily for the process evaluation component and, secondarily, the input evaluation component, while they rarely evaluated these training approaches for the output and organizational context evaluation components.

All five HR/HRD directors mentioned that they evaluated their web-based and classroom-based training programs using their existing evaluation tools, which were mostly surveys. The survey tools consisted of a Likert-type scale from 1 to 5 to evaluate trainees’ perceptions of the training, and they had used these survey tools for at least 20 to 30 years. Mike said,

Basically, we use our existing survey forms in our organization to evaluate trainees’ satisfaction with training, asking about the content, instructor, training environment and so on in the survey.

Jim said,

We generally evaluate our web-based and classroom-based training programs to see how satisfied trainees are with the training our programs provide. To see trainees’ satisfaction rates with their training, we evaluate 99.99% of our training
programs using surveys.

**Input Evaluation Component**

Based on the interview data, the five companies all evaluated their web-based and classroom-based training programs for input evaluation component. The interviewees stated that they included some questions related to input evaluation component on the survey questionnaires, such as questions about prerequisites for training, rewards and promotions for trainees, or the budget for training. Mike said,

> We set up and review prerequisites before conducting some of our training programs. Technical training programs mostly have prerequisites that are based on job position, years of employment, and so on. These prerequisites are evaluated based on the results of trainees’ satisfaction with training.

Shawn talked about rewards or promotion issues for trainees who completed a training program,

> Our employees have to complete a certain number of required training hours in order to have an opportunity for job promotions. The training hours reflect on their job promotions. Thus, they take responsibility for their training… That’s why it is important to ensure whether rewards or promotions opportunities are appropriately offered before conducting a training program.

In addition, Mike stated that his company conducted a workshop to set up the budget for upcoming training programs:

> Before conducting some of the training programs, we conduct a workshop with the HRD professionals who had implemented the training programs in the previous year and get their opinions regarding how to appropriately select training
courses, instructors, contents, and duration of training. Then, we set up a budget for the training programs that will be implemented for the current year.

John also said,

We distribute survey forms to trainees to set up the budget for conducting web-based and classroom-based training programs.

However, all interviewees stated that the input evaluation component was considered to be a part of the process evaluation component, which means that it involved evaluating trainees’ satisfaction with training rather than intentionally conducting separate input evaluation.

*Process Evaluation Component*

All interviewees said that their companies predominantly conducted evaluation using the process component of evaluation, rather than the other three components of evaluation, since their senior management was most interested in the trainees’ satisfaction with training. All interviewees stated that they evaluated trainees’ satisfaction with training using existing survey templates from within their organizations to develop content and to examine whether training met the needs and interests of trainees (refer to the result of “Senior Management’s needs” for research question 7). Generally, these surveys emphasized evaluating four parts of the trainees’ satisfaction: duration and location, content, instructors, and training environment. John said,

We generally evaluate the appropriateness of training facilities, duration, location, task relevancy, content, and learner interaction through surveys. We also evaluate the quality of instructor to find better instructors and to satisfy our trainees.

Jim said,
To evaluate trainees’ satisfaction with training, we evaluate the quality of instructors, in areas such as their knowledge about content, instructional skills, task relevancy, care for trainees and so on.

To evaluate trainees’ participation and their learning progress through the training, HRD professionals usually monitored trainees’ attendance, attitudes, and participation rates for both web-based and classroom-based training programs. HRD professionals and/or instructors emailed or called trainees to inform or remind them about the importance of training and their learning progress in order to encourage them to successfully complete their training. Some also sent reminder letters to encourage trainees to take responsibility for their training; they informed trainees that their tuition would be paid from their salaries if trainees did not successfully complete their classes. In the case of important training, for example, a certificate class, HRD professionals could also directly report to trainees’ department directors about trainees’ learning progress.

As shown in table 4.9, HRD professionals evaluated trainees’ participation and learning progress in web-based and classroom-based training programs differently. In particular, Mike mentioned that for a web-based training program, it was more difficult to assess trainees’ learning progress and provide them with timely feedback than in a classroom-based training program, because the web-based training was generally in a self-study format and was highly individualized. The following were examples of how the five companies evaluated trainees’ participation and their learning progress. John explained,

For our online courses, our HRD staff monitors trainees’ class attendance and attitudes by checking their rates of clicking links or giving responses to irregular pop-up windows during instruction. If they find that the trainees’ learning
progress is too slow, then they email to the trainees about their learning progress and inform them that they will have to pay their own tuition for the class if they fail to complete the course. In case of classroom-based courses, our staff monitors trainees’ attitudes and participation in class through CC-TV during instruction. They monitor trainees 100% of the time in the classroom, both visually and audibly. If a trainee has a bad attitude or fails to participate in class, it will be directly reported to his/her department director.

Jim said,

We evaluate the attendance rate of trainees for both web-based and classroom-based training programs. HRD professionals email the trainees with information about the training as an orientation before the start of the training. During training, we monitor whether trainees log in to their online classes, and if trainees have not logged in by a certain deadline that we select, then we send reminders to complete the training to both the trainees and their department directors by email or phone. We also directly check trainees’ classroom attendance and if they do not attend class, then, as with online training, we inform both the trainees and their department directors. After the training is over, HRD professionals also confirm whether trainees have completed their classes or not.

Mike said,

Our online courses are personalized on a self-study basis. Thus, we do not do much to evaluate trainees’ learning progress, as this depends on individual differences, trainees’ participation and individualized learning progress. However, we do evaluate trainees’ participation and completion rates for training by checking the number of trainees who complete the training within the deadline
and the number of slides that are clicked for instruction. On the other hand, we have somewhat have more flexibility to evaluate trainees’ participation and learning progress for classroom courses. We can evaluate them through trainees’ questions, presentations, or discussion, but mostly evaluate trainees’ satisfaction with the training. I would say that online training programs are more difficult for evaluating trainees’ learning progress and providing them with feedback as compared to classroom-based training programs.

Sam said,

For our online courses, in most cases, trainees directly check their own learning progress online. An instructor provides trainees with feedback individually or answers their questions through email or a discussion boards. HRD operators also check the connection time and frequency of logins for the training. HRD operators send trainees email a couple of weeks after starting training if they have not still connected to the training materials online and warn them their tuition will be paid from their salary unless they successfully complete their online course.

For our classroom-based courses, an instructor directly checks trainees’ attendance and learning attitudes in class. HRD operators also informally observe classrooms or interview trainees to assess trainees’ participation and learning progress. In addition, an instructor or HRD operator calls trainees… Trainees’ participation in training can be evaluated in many different ways such as homework, presentation or discussion. In case of important training, HRD operators directly call the department’s director of trainees to report on trainees’ participation and learning progress.

Shawn said,
For our web-based and classroom-based training programs, trainees’ attendance rates are monitored by HRD professionals or by an instructor. If a training program is considered to be particularly important, HRD professionals or an instructor will call directly to the department director of the trainees to remind them of the importance of training. They also call trainees to inform them that if their attendance rates are too low, then they will be forced to leave the training program. Especially in the case of technical training that involves national and international certifications or is part of an important project in our company, certain numbers of employees are selected for the training, and we continuously conduct knowledge tests and check attendance rates for trainees. Each trainee’s department asks the instructor whether trainees are progressing well and ask about the trainees’ attitudes toward learning.

**Output Evaluation Component**

All companies being interviewed measured trainees’ knowledge and skills from a certain type of training as a way to evaluate the levels of trainees and of the courses. Shawn and Jim said that technical training mostly required knowledge tests, for examples, multiple choices, simple essay, and a project report. Since technical training generally required professional knowledge specific to a certain field, knowledge tests were usually created by an internal organization rather than purchased from outsourcing companies (See the results of “Type of Training Program” in research question 7 for details). Sam said:

We want to evaluate how much knowledge and how many skills trainees acquire through training… We check the pass rate of trainees to review how many trainees received certifications after training.
Mike said,

Our company sometimes purchases knowledge tests from external sources. However, in most cases, our training courses do not require knowledge tests for trainees.

Additionally, all interviewees mentioned that their senior management had also considered using evaluations of trainees’ job performance after training as a way to examine whether their job performance was improved because of the training. However, they rarely conducted this level of evaluation, because they said that it was very difficult to isolate training effectiveness from other important factors that could influence trainees’ job performance. This issue was also discussed in the result of research question 4. John said,

Our senior management occasionally requests to evaluate trainees’ job performance after completed training. Yes, we know it is difficult to isolate training effectiveness from other extraneous variables such as stock market conditions, clients’ situations, regional differences, and so on …When it is necessary to evaluate trainees’ performance…we just compare the numbers of their sales between previous year and this year to see how much sales were increased, after OJT training was provided to new employees. This comparison is only possible for new employees. We do not evaluate experienced employees’ performance in this way due to various market changes and individual differences…

Generally, all interviewees mentioned that in order to evaluate trainees’ performance they tried other means, such as conducting a 360 degree feedback system or
diagnosing trainees’ current status based on an action plan that had been set up in the class. Sam said,

Sometimes our supervisors send their new employees to retake technical training after observing their performance.

Organizational Context Evaluation Component

Most of the companies did not pay much attention to organizational context component evaluation and hardly ever conducted them, except for adding some questions to the survey questionnaire as a part of evaluating trainees’ satisfaction. However, the evaluation of web-based training programs is very important in most Korean organizations due to their receipt of government support. Since the Korean government has been reimbursing organizations for training costs to support web-based training, organizations must conduct evaluation of web-based training programs based on the particular evaluation criteria set by the government and report the results to the government. Jim said,

All Korean companies that conduct web-based training programs perform the evaluation of their web-based training programs in the same way, for example, progress 20%, report 20%, evaluation 20%, following the evaluation criteria set by the Korea Research Institute for Vocational Education & Training (KRIVET). Sam said,

We can save a huge amount on training costs through going online. We get a refund of 80-90% of our training fees from the government. Thus, it is important to report the evaluation results of web-based training programs.
### Categories

<table>
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<td>(b) contents</td>
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<td>1. The Korean government support</td>
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</table>

Table 4.8: Web-based and Classroom-based Training Programs for the Four Components of Evaluation

In summary, both the results of the survey and interview showed that web-based and classroom-based training programs were most frequently evaluated for the process evaluation component, followed by the input evaluation component. On the other hand, web-based and classroom-based training programs were least frequently evaluated for the
organizational context evaluation component, followed by the output evaluation component.

Research Question 2: Are there differences between web-based and classroom-based training programs for each evaluation component?

Survey Results

As shown in tables 4.5 and 4.6 above, the input evaluation component produced higher mean score for classroom-based training ($\mu = 3.78$, $\sigma = .59$) than web-based training programs ($\mu = 3.70$, $\sigma = .86$). The process evaluation component produced higher mean score for classroom-based training ($\mu = 4.29$, $\sigma = .56$) than web-based training programs ($\mu = 4.02$, $\sigma = .75$). The output evaluation component produced higher mean score for classroom-based training ($\mu = 3.46$, $\sigma = .74$) than web-based training programs ($\mu = 3.12$, $\sigma = .86$). On the other hand, the organizational context evaluation component produced lower mean score for classroom-based training ($\mu = 2.93$, $\sigma = .926$) than web-based training programs ($\mu = 3.03$, $\sigma = .849$).


**Interview Results**

To compare the differences between web-based and classroom-based training programs for the four components of evaluation, the researcher asked the HR/HRD directors further questions: “Do you conduct and evaluate these two training approaches differently in your organization?” “If so, please explain how they differ.”

Table 4.9 compared the differences between web-based and classroom-based training programs for the four components of evaluation. In the input and process components of evaluation, the five interviewees all said that their HRD professionals used existing survey forms to evaluate trainees’ satisfaction with training. However, they said that they included different questions for web-based and classroom-based training programs on the survey questionnaire, although main categories for survey were the same. All five interviewees also stated that the online survey had more detailed questions included on the questionnaire than the survey for the classroom. In addition, they mentioned that web-based training was more complicated to evaluate than classroom-based training, because web-based courses were specialized and individualized.

Furthermore, the HRD professionals at the five companies rarely evaluated their web-based and classroom-based training programs for the output evaluation component, although they tried to use various types of evaluation tools for this component. Interviewees said that web-based training programs were less effectively or often evaluated for output evaluation component than classroom-based training programs. Lastly, the HRD professionals more frequently evaluated web-based training programs than classroom-based training programs for the organizational context evaluation component in order to receive reimbursement of tuition money.
from the Korean government.
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<tr>
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<td></td>
</tr>
<tr>
<td>1. Survey questionnaire</td>
<td>Different questions: adding more questions</td>
<td>Different questions</td>
</tr>
</tbody>
</table>
| 2. Trainees’ participation and learning progress | Checking through online:  
  - Number of clicking slides  
  - Login times  
  - Discussion board  
  - Pop-up window  
  - Homework  | Checking through direct observation:  
  - Class  
  - CC-TV  
  - Interview  
  - Homework or discussion in class |
| **Output evaluation**            |                                                                           |                               |
| 1. Learning tests                | Self-check  
  Multiple choices  
  Pass/fail  
  Simple essay  
  Reflection paper  | Self-check  
  Multiple choices  
  Pass/fail  
  Essay  
  Reflection/project paper |
| 2. Transfer of training          | Action plan  
  Supervisor’s Observation  
  Number of sales  
  360 degree feedback  
  Statistics  | Projects  
  Action plan  
  Supervisor’s Observation  
  Number of sales  
  360 degree feedback  
  Statistics |
| **Organizational context**       |                                                                           |                               |
| 1. Survey questionnaire          | Different questions                                                       | Different questions           |
| 2. The Korean government support | Report evaluation results to the government                                |                               |

Table 4.9: The Differences between Web-based and Classroom-based Training Programs for the Four Components of Evaluation
In summary, web-based and classroom-based training programs were meaningfully different on the process evaluation component. However, web-based and classroom-based training programs were not meaningfully different on the input, output, and organizational contexts components of evaluation.

Research Question 3: What is the relationship between the demographic characteristics of HRD professionals and the practices used to evaluate web-based and classroom-based training programs for each evaluation component?

Survey Results

Tables 4.10, 4.11, 4.12, and 4.13 showed that the organization’s years of conducting training programs explained 20.2% of the variance in the input component of evaluation for web-based training programs, 32.6% of the variance in the process component of evaluation for web-based training programs, 22.1% of the variance in the output component of evaluation for web-based training programs, and 12% of the variance in the organizational context component of evaluation for web-based training programs.

The type of industry also explained 13.4% of the variance in the input component of evaluation for web-based training programs, 8.1% of the variance in the process component of evaluation for web-based training programs, 15.7% of the variance in the output component of evaluation for web-based training programs, and 20.2% of the variance in the organizational context component of evaluation for web-based training programs.

Tables 4.14, 4.15, 4.16, and 4.17 showed that the type of industry explained
approximately 10% of the variances in the input, process, and output components of evaluation for web-based training programs, except the organizational context component of evaluation (2.3%). On the contrary, the rest of the demographic variables accounted for few variances in all four components of evaluation for classroom-based training programs.
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Table 4.10: Squared Multiple Correlations between Demographic Variables of HRD Professionals and Web-based Training Programs for the Input Evaluation Component

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Table 4.11: Squared Multiple Correlations between Demographic Variables of HRD Professionals and Web-based Training Programs for the Process Evaluation Component
Table 4.12: Squared Multiple Correlations between Demographic Variables of HRD Professionals and Web-based Training Programs for the Output Evaluation Component

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Table 4.13: Squared Multiple Correlations between Demographic Variables of HRD Professionals and Web-based Training Programs for the Organizational Context Evaluation Component

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### Table 4.14: Squared Multiple Correlations between Demographic Variables of HRD Professionals and Classroom-based Training Programs for the Input Evaluation Component

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### Table 4.15: Squared Multiple Correlations between Demographic Variables of HRD Professionals and Classroom-based Training Programs for the Process Evaluation Component

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Table 4.14: Squared Multiple Correlations between Demographic Variables of HRD Professionals and Classroom-based Training Programs for the Input Evaluation Component

Table 4.15: Squared Multiple Correlations between Demographic Variables of HRD Professionals and Classroom-based Training Programs for the Process Evaluation Component
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Table 4.16: Squared Multiple Correlations between Demographic Variables of HRD Professionals and Classroom-based Training Programs for the Output Evaluation Component

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<td>.018</td>
<td>.920</td>
</tr>
<tr>
<td>Year of Training</td>
<td>.265</td>
<td>.070</td>
<td>.012</td>
<td>.920</td>
</tr>
<tr>
<td>Job Level</td>
<td>.228</td>
<td>.052</td>
<td>.008</td>
<td>.922</td>
</tr>
<tr>
<td>Educational Level</td>
<td>.175</td>
<td>.031</td>
<td>.016</td>
<td>.918</td>
</tr>
<tr>
<td>% of Evaluation</td>
<td>.255</td>
<td>.065</td>
<td>.037</td>
<td>.909</td>
</tr>
</tbody>
</table>

Table 4.17: Squared Multiple Correlations between Demographic Variables of HRD Professionals and Classroom-based Training Programs for the Organizational Context Evaluation Component
Interview Results

The results presented in tables 4.18 and 4.19 compared the practices used to evaluate web-based and classroom-based training programs among the five companies being studied. The five companies evaluated both training approaches most frequently for the process evaluation component and focused on evaluating trainees’ satisfaction, using their own internal existing survey templates. Next, they evaluated these training approaches for the input evaluation component, also with the use of existing survey templates.

They rarely evaluated these training approaches for the output and organizational context evaluation components. Nonetheless, when they evaluated for these evaluation components, they relied heavily on knowledge tests for the output evaluation component and rarely conducted higher-level evaluation, such as transfer of training or organizational results. They focused on the evaluation of web-based training programs for the organizational context evaluation component in order to receive reimbursement of tuition money from the Korean government.

The evaluation systems in all the companies were organized based on Kirkpatrick’s four levels of evaluation. During the interviews, the HRD directors frequently explained their evaluation systems based on Kirkpatrick’s evaluation framework. For example, Mike said,

We mostly evaluate Level 1 reactions for our training programs.

Sam said,

We do not evaluate Level 3 and Level 4 for our online and classroom training programs.

However, all the HRD directors interviewed perceived that there were some
differences between web-based and classroom-based training programs for the process evaluation component. They said that they used different evaluation tools between web-based and classroom-based training programs to evaluate trainees’ participation and learning progress for training (see details in the results of “Process Evaluation” for research question 1). For example, John said that his company checked the participation rate of trainees through CC-TV in the classroom, while online they checked it through the number of responses to irregular pop-up windows or the rate of clicking slides. As another example, Jim said that his company directly checked the attendance rate of trainees in the classroom, while they checked it through trainees’ login times for online.

Also, some interviewees stated that evaluating web-based training programs was slightly more difficult and complicated than evaluating classroom-based training programs.
<table>
<thead>
<tr>
<th>Web-based training</th>
<th>John</th>
<th>Jim</th>
<th>Mike</th>
<th>Sam</th>
<th>Shawn</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Input Evaluation</strong></td>
<td>Using existing survey templates</td>
<td>Using existing survey templates</td>
<td>Using existing survey templates</td>
<td>Using existing survey templates</td>
<td>Using existing survey templates</td>
</tr>
<tr>
<td><strong>Process Evaluation</strong></td>
<td>Trainees’ satisfaction using existing survey templates</td>
<td>Trainees’ satisfaction using existing survey templates</td>
<td>Trainees’ satisfaction using existing survey templates</td>
<td>Trainees’ satisfaction using existing survey templates</td>
<td>Trainees’ satisfaction using existing survey templates</td>
</tr>
<tr>
<td>Attendance check: irregular pop-up window &amp; number of clicking slides</td>
<td>Attendance check: login times</td>
<td>Attendance check: number of attendance within deadline</td>
<td>Attendance check: number of clicking pages, connection time and frequency of logins, &amp; discussion board</td>
<td>Attendance check: number of clicking pages</td>
<td>Attendance check: number of clicking pages</td>
</tr>
<tr>
<td><strong>Output Evaluation</strong></td>
<td>Knowledge test using existing test forms</td>
<td>Knowledge test (e.g. pass/fail)</td>
<td>Knowledge test from external resources</td>
<td>Knowledge test (self-check, multiple choices, etc.)</td>
<td>Knowledge test (self-check, multiple choices, etc.)</td>
</tr>
<tr>
<td>Performance evaluation based on trainee satisfaction, learning test, or comparing number of sales before &amp; after training for new employees</td>
<td>Action plan to compare a trainee’s job performance</td>
<td>Supervisor’s observation</td>
<td>Supervisor’s observation for new employee</td>
<td>Rarely performance evaluation</td>
<td>Rarely performance evaluation</td>
</tr>
<tr>
<td>360 degree feedback</td>
<td>Rarely transfer of training &amp; ROI</td>
<td>Action plan to solve current problems in trainees’ jobs</td>
<td>No evaluation for Level 3&amp;4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rarely cost effectiveness</td>
<td></td>
<td>Rarely performance evaluation (t-test)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Context Evaluation</strong></td>
<td>Government support</td>
<td>Government support</td>
<td>Government support</td>
<td>Government support</td>
<td>Government support</td>
</tr>
</tbody>
</table>

Table 4.18: The Relationship between Demographic Information of Five HR/HRD Directors and the Practices Used to Evaluate Web-based Training Programs for the Four Components of Evaluation
<table>
<thead>
<tr>
<th>Classroom-based training</th>
<th>John</th>
<th>Jim</th>
<th>Mike</th>
<th>Sam</th>
<th>Shawn</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Input Evaluation</td>
<td>Using existing survey templates</td>
<td>Using existing survey templates</td>
<td>Using existing survey templates</td>
<td>Using existing survey templates</td>
<td>Using existing survey templates</td>
</tr>
<tr>
<td>• Process Evaluation</td>
<td>Trainees’ satisfaction using existing survey templates</td>
<td>Trainees’ satisfaction using existing survey templates</td>
<td>Trainees’ satisfaction using existing survey templates</td>
<td>Trainees’ satisfaction using existing survey templates</td>
<td>Trainees’ satisfaction using existing survey templates</td>
</tr>
<tr>
<td></td>
<td>Attendance, participation, &amp; attitudes check: Monitors CC-TV in class</td>
<td>Directly attendance &amp; attitude check in class</td>
<td>Directly check attendance in class</td>
<td>Directly check attendance in class</td>
<td>Directly check attendance in class</td>
</tr>
<tr>
<td>• Output Evaluation</td>
<td>Knowledge test using existing test forms</td>
<td>Knowledge test (e.g. pass/fail)</td>
<td>Knowledge test</td>
<td>Knowledge test (self-check, multiple choices, etc.)</td>
<td>Knowledge test</td>
</tr>
<tr>
<td></td>
<td>Performance evaluation based on trainee satisfaction, learning test, or comparing number of sales before &amp; after training for new employees</td>
<td>Action plan to solve current problems in trainees’ jobs</td>
<td>Action plan to solve current problems in trainees’ jobs</td>
<td>Supervisor’s observation for new employee</td>
<td>Submit a real project report</td>
</tr>
<tr>
<td></td>
<td>360 degree feedback</td>
<td>Supervisor’s observation</td>
<td>Supervisor’s observation</td>
<td>Involved in a project</td>
<td>Rarely performance evaluation</td>
</tr>
<tr>
<td></td>
<td>Rarely transfer of training &amp; ROI</td>
<td>Performance index/numbers of sales</td>
<td>Performance index/numbers of sales</td>
<td>No evaluation for Level 3&amp;4</td>
<td>Only on request, conduct Level 2. Mostly survey</td>
</tr>
<tr>
<td></td>
<td>Rarely cost effectiveness</td>
<td>Rarely performance evaluation (t-test)</td>
<td>Rarely performance evaluation (t-test)</td>
<td>No evaluation for Level 3&amp;4</td>
<td>Mostly survey</td>
</tr>
<tr>
<td>• Context Evaluation</td>
<td>Some included in the survey questionnaire</td>
<td>Some included in the survey questionnaire</td>
<td>Some included in the survey questionnaire</td>
<td>Some included in the survey questionnaire</td>
<td>Some included in the survey questionnaire</td>
</tr>
</tbody>
</table>

Table 4.19: The Relationship between Demographic Information of Five HR/HRD Directors and the Practices Used to Evaluate Classroom-based Training Programs for the Four Components of Evaluation
In summary, both the results of the survey and interview showed that the
demographic characteristics of HRD professionals were not meaningfully related to the
practices used to evaluate web-based and classroom-based training programs for each
evaluation component.

Research Question 4: What barriers prevent HRD professionals from evaluating web-

   based and classroom-based training programs?

Survey Results

Table 4.20 summarizes the barriers perceived by HRD professionals to evaluate
web-based training programs, based on human, context, and evaluation factors. As shown
in table 4.20, the barrier most frequently perceived by the respondents to evaluating their
web-based training programs was the evaluation factor ($\mu = 3.14$, $\sigma = .80$), and, next, the
context factor ($\mu = 3.17$, $\sigma = .74$). In contrast, the least barrier perceived by the
respondents was the human factor ($\mu = 3.68$, $\sigma = .58$).

Table 4.21 summarizes the barriers perceived by HRD professionals to evaluate
classroom-based training programs, based on human, context, and evaluation factors. As
shown in table 4.21, the barrier most frequently perceived by the respondents to
evaluating their classroom-based training programs was the context factor ($\mu = 3.11$, $\sigma$
$= .73$), followed by the evaluation factor ($\mu =3.22$, $\sigma = .71$). On the contrary, the least
barrier perceived by the respondents was the human factor ($\mu = 3.81$, $\sigma = .55$).

Among the three factors of evaluation barriers for both web-based and classroom-
based training programs, the context factor to evaluating classroom-based training
programs was the most perceived barrier by respondents, while the human factor in
classroom-based training programs was the least perceived barrier.
<table>
<thead>
<tr>
<th>Cases</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Included</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>N</td>
<td>Percent</td>
<td>N</td>
<td>Percent</td>
<td>N</td>
<td>Percent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human</td>
<td>3.685</td>
<td>.576</td>
<td>40</td>
<td>54.8%</td>
<td>33</td>
<td>45.2%</td>
<td>73</td>
<td>100.0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Context</td>
<td>3.171</td>
<td>.738</td>
<td>40</td>
<td>54.8%</td>
<td>33</td>
<td>45.2%</td>
<td>73</td>
<td>100.0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation</td>
<td>3.142</td>
<td>.803</td>
<td>40</td>
<td>54.8%</td>
<td>33</td>
<td>45.2%</td>
<td>73</td>
<td>100.0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.20: Descriptive Statistics on Human, Context, and Evaluation Factors of Evaluation Barriers for Web-based Training Programs (N=40)

<table>
<thead>
<tr>
<th>Cases</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Included</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>N</td>
<td>Percent</td>
<td>N</td>
<td>Percent</td>
<td>N</td>
<td>Percent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human</td>
<td>3.811</td>
<td>.547</td>
<td>67</td>
<td>91.8%</td>
<td>6</td>
<td>8.2%</td>
<td>73</td>
<td>100.0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Context</td>
<td>3.111</td>
<td>.728</td>
<td>67</td>
<td>91.8%</td>
<td>6</td>
<td>8.2%</td>
<td>73</td>
<td>100.0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation</td>
<td>3.222</td>
<td>.706</td>
<td>67</td>
<td>91.8%</td>
<td>6</td>
<td>8.2%</td>
<td>73</td>
<td>100.0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.21: Descriptive Statistics on Human, Context, and Evaluation Factors of Evaluation Barriers for Classroom-based Training Programs (N = 67)
Interview Results

The researcher identified categories based on the comments of interviewees. Table 4.22 shows the category system and the response frequencies for the barriers perceived by HRD professionals to evaluating web-based and classroom-based training programs in the five companies. Based on the interviews with five HR/HRD directors, the primary barriers inhibiting evaluation for web-based and classroom-based training programs were identified as follows.

*Human Factors*

*Lack of professional knowledge and skills.* The first human factor of evaluation barrier was the lack of professional knowledge and skills in evaluation. Based on the interviews, HRD professionals were not aware of their own lack of knowledge and skill in evaluation of web-based and classroom-based training programs, since they mostly used their existing survey forms to evaluate their training programs, which were not difficult to use. In addition, all of the companies interviewed did not provide HRD professionals with any formal training for the evaluation of training programs. Instead, HRD professionals informally learned from their co-workers, who previously had experience in evaluating web-based and/or classroom-based training programs, using their existing evaluation tools in their organizations. These existing evaluation tools were mostly surveys for the purpose of evaluating trainees’ satisfaction with training. John said,

> Our HRD staff use existing evaluation tools that are not difficult to use. They mostly distribute survey forms to trainees to check their satisfaction rates and thus no special training is required to evaluate these training programs.

Mike also said,

> When new HRD professionals get hired, they just learn about how to complete and
modify existing survey forms based on types of training programs. Thus, it is not difficult to learn…also it does not take long to learn [the company’s procedures]…The survey includes trainees’ satisfaction with the course’s content, instructor, training environment, and so on…. This means that HRD professionals did not learn how to evaluate more than trainees’ satisfaction. Based on the interviews, HRD professionals had a lack of knowledge and skill in higher levels of evaluation such as transfer of training or organizational results.

Mike said,

Our HRD professionals have lack of professionalism in training evaluation. In particular, since our management does not request them to evaluate trainees’ job performance after training, they do not know and do not have to know how to do it...

This problem is also discussed under the category of the lack of evaluation methods and tools in this section.

Lack of credibility and responsibility of an external evaluator or vendors. Based on the interviews, most companies purchased online courses from professional vendors to provide their employees with awareness or managerial training. Three interviewees pointed out the barriers related to evaluating web-based courses obtained from outsourcing. They stated that the vendors did not take much responsibility for further evaluation after the training was completed.

One interviewee also stated that his senior management perceived a lack of credibility given to external evaluation experts who could potentially evaluate their training programs. John said,
We don’t much trust external evaluators to evaluate our trainees’ performance or the financial benefits of training. Although our internal staff have little knowledge about how to evaluate trainees’ job performance after training, we are reluctant to hire an external evaluator to evaluate it. For example, if an external evaluator produced a negative result in evaluating our trainees’ performance, but our internal staff have a positive result regarding trainees’ satisfaction with training, we would be more likely to believe the evaluation results conducted by our internal staff, from the survey regarding trainees’ satisfaction with training, than that of the external evaluator regarding trainees’ job performance. The reason given for this is that our management believes that our own staff know our organization’s characteristics and circumstances better than the external evaluator.

_Lack of HRD professionals’ commitment to evaluation._ The next barrier, in the category of human factor, was a lack of HRD professionals’ commitment to evaluation. Three of the interviewees said that their HRD professionals were also not interested in training evaluation, mainly because of a lack of interest in training evaluation of the part of their senior management and supervisors. Sam said,

There is no motivation for or interest in having HRD professionals evaluate.

Honestly speaking, training evaluation is not considered to be an important factor in improving training programs and is not used effectively. It does not influence on our online or offline training. It is treated just a typical traditional event.

Shawn said,

Nobody is interested in level 3 and 4 evaluations or motivated to do them.

Jim also said,
We persist in using current evaluation methods and tools to evaluate training programs. Nobody brings up this issue as a problem. There is actually no serious argument about the current evaluation methods…

*Lack of stakeholder commitment to evaluation.* The last barrier in the human factor was the lack of commitment on the part of stakeholders to evaluating their training programs. Alkin (1985) states that, like the evaluator’s commitment to performing the evaluation, the intended stakeholders should be committed to using its results. Especially, key stakeholders’ enthusiasm for and commitment to utilizing the evaluation stimulates its potential for use. If they resist the evaluation, the results might be useless to the whole audience.

John said,

Our stakeholders do not cooperate with each other in the process of training evaluation. They are not interested in evaluation as well as being very busy with their own work. Thus, it is difficult to evaluate training programs.

Sam also said,

Our stakeholders or relevant departments do not collaborate to evaluate our web-based and classroom-based training programs. Our stakeholders are just too busy to do their own projects. Besides, they are not interested in evaluation…

*Context Factors*

*Lack of senior management’s interest in training evaluation.* The next factor that hindered effective training evaluation was a lack of interest or reluctance on the part of senior management toward training evaluation. All five HRD directors stated that senior management in their organizations was not greatly interested in training evaluation. This was the most frequently perceived barrier by four of the interviewees in evaluating web-
based and classroom-based training programs in their organizations. For example, John said,

…My senior management recognizes the importance of training evaluation, but…

they are satisfied with our current evaluation tools, and with how we currently evaluate our training programs, which mostly involves the evaluation of trainees’ satisfaction through survey.

Mike also said,

My management is somewhat interested in training evaluation, but not actually interested in how to manage and maintain the evaluation…

Basically, four interviewees stated that their senior management just believed, without evidence or measurement, that the training itself had its own effectiveness. Thus, the goal of training was to have employees take classes rather than for them to necessarily learn from them. The management also equated trainees’ satisfaction with successful training. Thus, evaluating trainees’ satisfaction was more important than evaluating other factors. For example, Sam said,

My senior management is not interested in training evaluation, and it is not necessary to report the results of evaluation to the management. In fact, the senior management does not require a higher level of evaluation above trainees’ satisfaction or knowledge tests. They say that there is no reason to conduct further evaluation beyond a knowledge test. My management rarely perceives the importance of higher-level evaluations.

Interestingly, Shawn disagreed with this judgment, echoing the opposite view about the value of training programs using financial terms for training. He said,
The purpose of training is to train employees. To train employees, why should we evaluate the training programs? We believe that training is effective no matter whether its effectiveness is 1% or 100%. We do not know why we should evaluate. Training itself is meaningful to do. I am very reluctant to judge employee development in financial terms. The mechanism of employee development is driven by the importance of human beings and is based on trust between senior management and employees, and thus it is problematic to approach training with too much of a business mind.

*Lack of support from the organization.* A second barrier, within the context-related factors, was lack of support from organizations for evaluating training programs. Interviewees mostly talked about of the limited budget and time for training evaluation. Shawn said,

We used to conduct focus groups or individual interviews to evaluate our new training programs… However, we spent too much of our budget on this, and thus we are not doing it anymore.

John said,

I think we have plenty of budget room for conducting training. However, our management does not want to invest extra money, insisting that it would be too expensive to develop existing evaluation tools further or to pay external evaluation experts.

Two interviewees also talked about limited time for training evaluation.

Sam said,

Our HRD professionals do not have much time to evaluate these training programs. Besides, evaluation is a small part (mostly less than 25%) of their jobs.
There are many other jobs for them to do. In addition, although some HRD professionals endeavor to spend their time on evaluating training programs more precisely, senior management are not much interested in the results of their evaluation.

The unique structure of web-based courses. According to Alkin (1985), training characteristics and features influence evaluation. Interviewees stated that, since web-based courses were individualized and specified to a self-study format in the companies, HRD professionals perceived more often barriers in evaluating web-based courses than classroom-based courses (see the result of research question 5 for details).

Organizational characteristics and circumstances. Alkin (1985) also states that relationships both within and outside of the organization may affect evaluation. John and Mike pointed out that investment companies had too many unexpected variables to evaluate due to unexpectedly changing stock value and clients (see the result of research question 6 for details).

Evaluation Factors

Lack of evaluation methods and tools. The final barrier of training evaluation was the lack of evaluation methods and tools. All interviewees mentioned that they used existing evaluation tools that had been used for a long time in their organizations. Jim said,

We have been evaluating our web-based and classroom-based training programs using our existing evaluation tools. These existing tools are mostly survey questionnaires to evaluate trainees’ satisfaction and we have used these forms over 20 years.
John said

Most evaluations of our web-based training programs rely on external vendors’ contracts. However, the problem is that they are mostly outdated.

Shawn also said,

Training evaluation is not special. A survey with a 5-point rating scale is mostly used, but it is problematic to continuously use these existing survey instruments. It seems unreliable.

All interviewees especially pointed out the difficulty of evaluating transfer of training and organizational results using current evaluation methods and tools. This was also a primary barrier perceived by the five interviewees to the process of training evaluation itself. They were skeptical about how to isolate the training effectiveness from other extraneous variables in trainees’ job performance using current available evaluation methods and tools. For example, John said,

Our senior management sometimes requests reports on trainees’ job performance after training, although we know it is difficult to isolate training effectiveness from other extraneous variables…What is worse, it is impossible to evaluate experienced workers’ performance after training because other variables - such as their personality, job experience and ability, clients, regional differences, and so on - are more influential to their job performance.

Mike also said,

It is very difficult to isolate the main effects of training by controlling for other external effects such as marketing, increase in new clients, increase of the stock value, and so on…I had experience in evaluating trainees’ performance using t-test. My training team compared the perception of trainees before and after
training about their job performance. However, we found that other external factors were more important effects on their job performance than training. Besides, I don’t know how reliable this subjective measurement would be.

Ultimately, all the interviewees pointed out that there were still few reliable evaluation methods and tools available for use by practitioners who needed to make decisions about trainees’ job performance and the financial benefits of web-based and classroom-based training programs for their own organizations.
<table>
<thead>
<tr>
<th>Categories</th>
<th>Web-based</th>
<th>Classroom-based</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation barriers</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Human factor</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Lack of professional knowledge and skills</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>2. Lack of credibility &amp; responsibility of an external evaluator or vendors</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>3. Lack of HRD professionals’ commitment to evaluation</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>4. Lack of stakeholders’ commitment to evaluation</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Context factor</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Lack of senior management’s interest in training evaluation</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>2. Lack of support from organizations (a) Limited budget for evaluation</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>(b) Limited time for evaluation</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3. The unique structure of web-based course</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>4. Organizational characteristics and circumstances</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Evaluation factor</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Lack of evaluation methods and tools (a) Outdated, unreliable survey tools</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>(b) Few reliable evaluation methods and tools available to evaluate trainees’ performance and organizational results</td>
<td>9</td>
<td>9</td>
</tr>
</tbody>
</table>

Table 4.22: The Three Factors of Evaluation Barriers for Web-based and Classroom-based Training Programs
In summary, both results of the survey and interview showed that the context and evaluation factors were the primary barriers preventing HRD professionals from evaluating web-based and classroom-based training programs. The interview results showed that the barriers preventing HRD professionals from evaluating web-based and classroom-based training programs were identified as follows: human factors of evaluation barriers were lack of HRD professionals’ knowledge and skills, lack of credibility and responsibility in external evaluators or vendors, lack of HRD professionals’ commitment to evaluation, and lack of stakeholders’ commitment to evaluation. Context factors included the lack of management interest, limited organizational time and budget for evaluation, the unique structure of web-based training programs, and organizational characteristics and circumstances. Evaluation factors included outdated unreliable survey tools and lack of evaluation methods and tools for higher levels of evaluation.

Research Question 5: Are there differences in the barriers to evaluating web-based and classroom-based training programs?

Survey Results

Tables 4.20 and 4.21 showed that the human factor in evaluation barriers produced the highest mean score for both training approaches. This means that the respondents perceived the smallest amount of resistance from the human factor toward evaluating web-based and classroom-based training programs. However, the human factor produced higher mean score for web-based training ($\mu = 3.685, \sigma = .576$) than classroom-based training programs ($\mu = 3.811, \sigma = .547$). This means that the respondents who had experience in evaluating web-based training programs perceived
more barriers in the human factor than those who evaluated classroom-based training programs.

On the contrary, the evaluation factor in evaluation barriers produced the lowest score for web-based training programs, while the context factor was the lowest for classroom-based training programs. When comparing web-based and classroom-based training programs for these factors of evaluation barriers, the context factor produced higher mean score for web-based training ($\mu = 3.171, \sigma = .738$) than classroom-based training programs ($\mu = 3.111, \sigma = .728$). The evaluation factor produced lower mean score for web-based training programs ($\mu = 3.142, \sigma = .803$) than classroom-based training programs ($\mu = 3.222, \sigma = .706$).
Interview Results

Table 4.23 showed that HRD professionals perceived barriers in the human and context factors of evaluation barriers for web-based training programs, due to lack of credibility and responsibility on the part of external evaluators or vendors and the unique structure of web-based training.

Human Factors

The results (Table 4.22) showed that the human factor in evaluation barriers was perceived more often by HRD professionals in evaluating web-based training than classroom-based training programs, due to an external evaluator’s credibility and responsibility. The four interviewees stated that they perceived more barriers in evaluating web-based training programs than classroom-based training programs because of the training evaluation tools used by outsourcing companies and their responsibility for evaluation after training. Mike said,

Most our online courses are bought through outsourcing and are very weak in providing useful or timely evaluation. In addition, the vendors do not have an obligation to perform evaluation after training. Thus, it makes more difficult to evaluate trainees’ job performance after training.

John also said,

Generally, there is no difference between web-based and classroom-based training programs in evaluation. However, since our web-based training programs mostly focus on awareness or managerial training, the training evaluation methods heavily rely on external vendors’ contracts and are outdated…

In addition, Jim said,

Our awareness courses are mostly online courses purchased from vendors. Thus,
there is no evaluation after training.

**Context Factors**

*The unique structure of web-based courses.* Based on interviews with HR/HRD directors, most of their HRD professionals did not perceive any difference between web-based and classroom-based training programs in the evaluation barriers, since they generally used existing survey forms that were not difficult to use. They merely evaluated trainees’ satisfaction with both web-based and classroom-based training programs using their existing survey forms. However, they perceived slightly more difficulty in evaluating web-based training programs than classroom-based training, in that they needed to add more questions in the survey for their web-based training programs. Jim said,

> There is no difference between web-based and classroom-based training in our use of existing survey forms. However, we use questionnaires with different questions for these two training approaches; online training has more detailed questions on its questionnaire.

Mike said,

> Evaluation tools are currently used only to evaluate training satisfaction, module satisfaction, training facility and time... However, online training is more complicated to evaluate than classroom training, because online modules are very specialized.

In addition, three interviewees pointed out that their online courses were generally structured as self-studies. They said that this structure made it more difficult to evaluate trainees’ learning progress and knowledge. Mike said,
Since web-based training uses a self-study format and is personalized, it is more
difficult to evaluate trainees’ learning progress and knowledge. For example,
some trainees might have misconceptions and misunderstandings about
instruction during and after completing the training, but it is hard to assess their
understanding of the online instruction because of its self-study and self-
satisfactory format.

Evaluation Factors

All interviewees pointed out that there was little difference between web-based
and classroom-based training programs in the evaluation factor of evaluation barriers.
HRD professionals perceived barriers in current evaluation methods and tools for
evaluating trainees’ performance and financial benefits as applying to both web-based
and classroom-based training programs (see the results of research question 4 for details).
### Categories

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<th>Classroom-based</th>
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</thead>
<tbody>
<tr>
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</tr>
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<td>2. Lack of credibility &amp; responsibility of an external evaluator or vendors</td>
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<td></td>
</tr>
<tr>
<td>3. Lack of HRD professionals’ commitment to evaluation</td>
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<td>No difference</td>
</tr>
<tr>
<td>4. Lack of stakeholders’ commitment to evaluation</td>
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<table>
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</thead>
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</tr>
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<td>(b) Limited time for evaluation</td>
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<table>
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<td>tools</td>
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<td>(b) Few reliable evaluation methods and tools available to evaluate</td>
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<td>No difference</td>
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<tr>
<td>trainees’ performance and organizational results</td>
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Table 4.23: The Differences between Web-based and Classroom-based Training Programs in the Three Factors of Evaluation Barriers
In summary, the survey and interview results both showed that web-based and classroom-based training programs were not meaningfully different on the three factors of evaluation barriers.

Research Question 6: What is the relationship between the demographic characteristics of HRD professionals and the barriers to evaluating web-base and classroom-based training programs?

Survey Results

Tables 4.24, 4.25, and 4.26 showed that the type of industry explained 23.5% of the variance in the human factor of evaluation barriers for web-based training programs, 15.4% of the variance in the context factor of evaluation barriers for web-based training programs, and 22.5% of the variance in the evaluation factor of evaluation barriers for web-based training programs. Additionally, the organization’s years of conducting training programs explained 34.2% of the variance in the human factor of evaluation barriers for web-based training programs, whereas it explained few variances in the context and evaluation factors of evaluation barriers for web-based training programs.

Tables 4.27, 4.28, and 4.29 showed that the type of industry explained 19.1% of the variance in the human factor of evaluation barriers for classroom-based training programs, 21.5% of the variance in the context factor of evaluation barriers for classroom-based training programs, and 15.7% of the variance in the evaluation factor of evaluation barriers for classroom-based training programs. Additionally, the organization’s years of conducting training programs explained 12.9% of the variance in the human factor of evaluation barriers for classroom-based training programs, whereas it
accounted for few variances in the context and evaluation factors of evaluation barriers for classroom-based training programs.
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<td>.493</td>
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<td>-.046</td>
<td>.589</td>
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Table 4.24: Squared Multiple Correlations between Demographic Variables of HRD Professionals and Human Factor of Evaluation Barriers for Web-based Training Programs

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<td>.023</td>
<td>.700</td>
</tr>
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<td>.742</td>
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<td>-.021</td>
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<td>% of Evaluation</td>
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<td>.735</td>
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Table 4.25: Squared Multiple Correlations between Demographic Variables of HRD Professionals and Context Factor of Evaluation Barriers for Web-based Training Programs

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Table 4.26: Squared Multiple Correlations between Demographic Variables of HRD Professionals and Evaluation Factor of Evaluation Barriers for Web-based Training Programs
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Table 4.27: Squared Multiple Correlations between Demographic Variables of HRD Professionals and Human Factor of Evaluation Barriers for Classroom-based Training Programs

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<td>Type of Industry</td>
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<tr>
<td>% of Evaluation</td>
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<td>-.022</td>
<td>.735</td>
</tr>
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</table>

Table 4.28: Squared Multiple Correlations between Demographic Variables of HRD Professionals and Context Factor of Evaluation Barriers for Classroom-based Training Programs

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<td>Number of Employee</td>
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<td>Year of Training</td>
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<td>Job Level</td>
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<td>.706</td>
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<td>-.015</td>
<td>.711</td>
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<tr>
<td>% of Evaluation</td>
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<td>.023</td>
<td>.698</td>
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</table>

Table 4.29: Squared Multiple Correlations between Demographic Variables of HRD Professionals and Evaluation Factor of Evaluation Barriers for Classroom-based Training Programs
Interview Results

As shown in tables 4.30 and 4.31, the relationship between the demographic characteristics of different companies’ web-based and classroom-based training programs and the evaluation barriers was fairly consistent. However, investment companies particularly perceived barriers to evaluating their web-based and classroom-based training programs due to their organizational characteristics and circumstances, such as unexpectedly changing stock value and clients. John said,

We are very sensitive to stock market conditions. For example, our previous stock value is 300 points, but it is dropped today to 100 points. This will influence training satisfaction. No matter how satisfied trainees are with their training programs, their satisfaction rate will be very low… Additionally, although the satisfaction rates of trainees are high, stock points can drop.

In fact, John more often talked about barriers within the three factors than the other four HRD directors, whereas Shawn rarely mentioned about the barriers. In particular, John talked about the performance evaluation a lot. He said,

Investment companies have too many unexpected variables to evaluate. It is not possible to include all variables because stock market condition is very frequently and suddenly changed based on our clients’ circumstances. Besides, performance evaluation is very expensive. It is not within our budget.

Generally, the results showed that the lack of senior management support was the most frequently perceived barrier to evaluation in the five companies and the lack of evaluation methods and tools were the next most frequently perceived barrier. In addition, most interviewees pointed out the lack of credibility and responsibility of given to
external evaluators or vendors, especially for evaluating their web-based training programs (see details in the results of research question 5).

On the other hand, the lack of HRD professionals’ knowledge and skills were the least frequently perceived barrier among HR/HRD directors at the different companies, although most HR/HRD directors stated that their HRD professionals did not have knowledge and skills in performing higher-level training evaluation. When comparing evaluation barriers between web-based and classroom-based training among five companies, interviewees perceived slightly more often barriers to evaluating web-based training programs than evaluating classroom-based training programs. The main reason for this was attributed to the unique structure of web-based courses and the fact that the evaluation was sometimes conducted by an external evaluator.
<table>
<thead>
<tr>
<th>Web-based training</th>
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<th>Jim</th>
<th>Mike</th>
<th>Sam</th>
<th>Shawn</th>
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<td>Lack of credibility &amp; responsibility of an external evaluator or vendors</td>
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<td>Lack of stakeholders’ commitment to evaluation</td>
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<td>Lack of management’s interest in evaluation</td>
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<tr>
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<td>The unique structure of web-based training</td>
<td>The unique structure of web-based training</td>
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<td>Sensitive to stock market conditions, regional differences, clients, etc.</td>
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<td>Sensitive to stock market conditions, regional differences, clients, etc.</td>
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</table>

Table 4.30: The Relationship between Three Factors of Evaluation Barriers and Demographic Information of Five HR/HRD Directors for Web-based Training Programs
<table>
<thead>
<tr>
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<th>John</th>
<th>Jim</th>
<th>Mike</th>
<th>Sam</th>
<th>Shawn</th>
</tr>
</thead>
<tbody>
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Table 4.31: The Relationship between Three Factors of Evaluation Barriers and Demographic Information of Five HRD Directors for Classroom-based Training Programs
In summary, both results of the survey and interview showed that the demographic characteristics of HRD professionals were not meaningfully related to the barriers to evaluating web-base and classroom-based training programs.

Research 7: What are the key decision factors for determining how HRD professionals evaluate their web-based and classroom-based training programs?

Interview Results

This last part of the interview dealt with the decision factors that HRD professionals used to determine how to evaluate web-based and classroom-based training programs within the five companies. At the end of the interview process, the researcher asked all interviewees about what kind of information they looked for from evaluation, how they used the results of the evaluation, and finally their overall feelings, thoughts, and concerns about the evaluation of web-based/classroom-based training programs in their organizations. The researcher reread all statements and made additional calls to interviewees when she found further answers needed for this question. After interviewing five HR/HRD directors, the primary decision factors determining evaluation for web-based and classroom-based training programs were identified as follows: senior management’s need, development of current and new training programs, type of training program, political issues for online courses, personnel benefits, and budget for training programs (See table 4.32).

Senior Management’s Needs

The first decision factor determining evaluation was the needs or requests of senior management for the evaluation of web-based and classroom-based training programs. All interviewees said that this factor was the most powerful factor in how
HRD professionals evaluated their web-based and classroom-based training programs. The senior management mostly asked HRD professionals to use surveys to measure trainees’ satisfaction with training and their participation rates in classes. In most cases, the management did not ask for more information than trainees’ satisfaction with training. Sam said,

My senior management does not want to evaluate more than level 1 and 2…

Some HRD professionals make the effort to have a higher level of evaluation for training programs, but they do not know whether the results of the evaluation will be used. They often consider the completion rates of trainees rather than trainees’ job resultant performance. They believe that the training itself necessarily has its own effectiveness. They are more interested in how to strategically train employees, how to get funds or budgets for training from government, or how to purchase appropriate content for reasonable prices.

However, sometimes, members of senior management asked HRD professionals to evaluate trainees’ knowledge and skills, especially when trainees needed to acquire certifications (See details in the results of “Output Evaluation” for research question 1 and “Type of Training Program” for research question 7). In addition, senior management occasionally requested information on trainees’ job performance as a result of training, although they understood that it was difficult to isolate the main effects of training from other extraneous variables.

*Development of Current or New Training Programs*  
The second decision factor determining decisions about training evaluation was deciding whether to develop new training programs or improve current training programs. Companies interviewed mostly evaluated trainees’ satisfaction with their training.
programs in order to develop additional training content or to examine whether the
training was aligned with the needs of trainees. The result of this evaluation, usually
c Conducted by survey, was used for designing, developing and operating training
programs Shawn said,

We used to conduct focus group or individual interviews to evaluate our training
programs for the purpose of developing new training programs or improving
current programs. However, we spent too much of our budget on this, and thus are
not doing it any more. Instead, we currently focus on surveys.

Shawn also said,

Our HRD staff’s opinions are very important for developing training programs or
evaluating external instructors. Their opinions mainly reflect on ways to revise
current training programs, especially when the same training programs they
provided are offered going to be offered again.

Most companies being studied here also identified and analyzed problems with
current training programs, based on satisfaction rates of trainees, in order to revise them.
If the training satisfaction was low, then they revised current training programs. Sam said,

We adjust frequency and time of training, revise curriculum, or replace instructors
based on what our trainees say.

Especially, they revised training programs for particular internal use as technical training
programs. Mike said,

We interview trainees and use their opinions in the process of revising training as part
of our internal training programs.

In case of using external training programs or instructors, companies also reviewed
trainees’ satisfaction rates for current training programs and instructors. Mike said,
If the survey results produce low satisfaction rates of trainees, especially for online courses, we ask the vendor to change the curriculum or to customize it. If the training satisfaction is low because of the quality of the external instructors, then we request a change in instructors.

Finally, Mike said,

No matter what we evaluate, all evaluation remains at level 1, “SATISFACTION”.

Type of Training Program

The third decision factor for training evaluation depended on what type of training program was offered. The companies being studied here mostly provided classroom-based training as mandatory courses. Based on the interviews, classroom-based training was generally used for awareness training that dealt with emotional and mental issues or involved group training, on topics such as leadership, culture, co-value of team building, and teamwork. In addition, this structure was used for technical training that required professional knowledge and skills.

On the contrary, they mostly provided web-based training in a self-study format. Web-based training was generally used for training that did not require interpersonal skills such as languages, time management, and self-leadership. It was also used for technical training that involved step-by-step procedures. Generally, web-based training for awareness or managerial training was mostly purchased from vendors, whereas classroom-based training was mostly provided from within the organization for the purpose of technical training.

All the interviewees said that they generally evaluated knowledge tests, supervisor’s observations, and trainees’ satisfaction, and checked attendance rates of trainees for technical training programs. On the other hand, they generally provided self-
assessment or evaluated trainees’ satisfaction for awareness and managerial training programs. Mike said,

For our technical training, our HRD staff who implement and evaluate training programs meet every year and review which curriculum has low satisfaction rates.

Sam said,

Especially for certificate training programs, we evaluate how many trainees acquired certifications after training by checking their pass rate.

John also said,

Technical training programs that grant national and international certificates or involve projects important to achieving our company’s goals mostly require evaluating through both administering a knowledge test and checking attendance rates and class attitudes of trainees. To evaluate awareness and managerial training, we rarely ask to Subject Matter Experts (SME) since it is mostly self-study. We usually conduct surveys of trainees’ satisfaction or self-assessment.

Lastly, Shawn provided the following:

For a certificate training program, we can measure pass or fail output. However, a time management training program is unable to evaluate trainees’ performance after completed training. In this case, we usually use self-assessment.

**Political Issues for Online Courses**

All interviewees talked about political issues related to their online courses. The politics related to online courses were mainly determined by the relationships between Korean government and organizations, between organizations and their HRD professionals, and between HRD professionals and professional vendors.
First, interviewees talked about the relationship between the government and their organizations. The Korean government has encouraged companies to provide their employees with web-based training programs, reimbursing companies for training costs. Since companies can save a huge amount on training through going online, they endeavor to meet the government’s evaluation criteria for web-based training by reporting, for example, the completion rates and satisfaction rates of trainees. Sam said,

Online training will get a reimbursement of approximately 80-90% of training fees from the Korean government. Thus, my company is more interested in how many peoples are trained, how many hours trained, and how much total refund is received from the government. Essentially, my company promotes web-based training programs mainly because of our government’s support.

Second, the relationship between an organization and its HRD professionals worked to accomplish the intended goals of HRD professionals. Jim stated that HRD professionals sometimes needed to purchase new equipment to enable the delivery of multimedia course content, such as streaming video, animation, or flash files or new online courses. Sometimes, they needed to replace old equipment or learning management systems, or upgrade their online servers to new ones. Then, when they evaluated trainees’ satisfaction with current online courses, they included evaluation of infrastructure, online servers, and others equipment that they needed to buy or replace, and reported the results to their management to achieve their goal of delivering effective and efficient training.

Lastly, there was often a personal relationship between HRD professionals and the professional vendors from whom they purchased online courses. HRD professionals made an effort to buy many online courses as cheaply as possible from professional
vendors, because increasing online courses was directly related to their job promotion. Meanwhile, professional vendors also attempted to sell as many courses with high prices as possible to companies, while competing with other vendors. Thus, HRD professionals continuously compared and negotiated prices and numbers of online courses among vendors to increase the number of training courses with reasonable prices that they could obtain from vendors. This relationship led to a negative result; companies concentrated more on increasing the quantity of online courses they offered rather than on increasing the quality of those courses. Mike said,

Although we evaluate trainees’ satisfaction with our online courses to help us search for good quality content among vendors, we are more interested in how to increase the quantity of our online content.

**Personnel Benefits**

The fifth decision factor involved how to evaluate employees’ performance related to training. Three of the interviewees stated that they evaluated their employees’ performance to measure personnel benefits. This factor was divided into two issues: one was to evaluate the job performance of HRD professionals themselves and the other was to evaluate trainees for their job promotion. First, three interviewees stated that they evaluated HRD professionals regarding how they provided their employees with training programs and whether they increased the purchase of online courses from outsourcing companies within their organization’s budgets. Sam said,

We need to monitor whether our HRD teams are working hard and working appropriately. How do we evaluate their performance? We can do it through survey rating or performance record. We can look at our trainees’ satisfaction rates for the training programs provided by our HRD professionals. In addition,
we can see performance records of our HRD professionals about how they contract for online courses with vendors. In other words, we evaluate how often our HRD professionals get discounts for online courses per trainee. This will be directly recorded as part of their job performance.

Jim also said,

We evaluate our HRD professionals to make sure whether training is appropriately and effectively provided to trainees.

Second, three interviewees also mentioned that they evaluated trainees regarding what training programs they selected, how they took their training programs, and whether they completed their required training hours for their job promotion. As stated previously, Shawn said,

Our employees have to complete a required number of training hours to have opportunities for job promotions. The training hours reflect on their job promotions. Thus, they take responsibility for their training.

Mike also said,

[O]ur HRD staff who implement and evaluate training programs meet every year and review which curriculum has a low satisfaction rate and make decisions about trainees’ job promotion.

Budget for Training Programs

The last decision factor for training evaluation involved setting up the budget for implementing future training programs. Two interviewees said that they conducted surveys to set up budgets for upcoming web-based and classroom-based training programs. Mike said that his company conducted a workshop with HRD staff who previously conducted training programs to set up a budget for implementing future
training programs. John also said that HRD professionals distributed survey forms to trainees to help set a budget for coming training programs.
### Table 4.32: Key Decision Factors Determining Evaluations for Web-based and Classroom-based Training Programs

In summary, the key decision factors for determining how HRD professionals evaluate their web-based and classroom-based training program were identified as follows: senior management’s needs, development of current and new training programs,

<table>
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<tr>
<th>Categories</th>
<th>Frequency</th>
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<tbody>
<tr>
<td>Web-based</td>
<td>Classroom-based</td>
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<tr>
<td>Senior management’s needs</td>
<td></td>
</tr>
<tr>
<td>1 Trainees’ satisfaction for training</td>
<td>11</td>
</tr>
<tr>
<td>2 Knowledge tests</td>
<td>5</td>
</tr>
<tr>
<td>3 Trainees’ job performance</td>
<td>3</td>
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<tr>
<td>Development of current or new training programs</td>
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<tr>
<td>1 Design and develop new training programs</td>
<td>8</td>
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<tr>
<td>2 Revise/change current training programs</td>
<td>5</td>
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<tr>
<td>Types of training program</td>
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<tr>
<td>1 Technical training</td>
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<td>2 Managerial training</td>
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<td>3 Awareness training</td>
<td>5</td>
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<tr>
<td>Political issues for online courses</td>
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<tr>
<td>1 Relationship between government and organizations</td>
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<td>2 Relationship between organizations and their HRD professionals</td>
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<tr>
<td>3 Relationship between HRD professionals and vendors</td>
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<td>Personnel benefits</td>
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<tr>
<td>1 Job performance for HRD professionals</td>
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<td>2 Job promotion for trainees</td>
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<td>Budget for training</td>
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type of training programs, political issues related to online courses, personnel benefits, and budget for training programs.
CHAPTER 5

SUMMARY, DISCUSSION, AND IMPLICATIONS

This chapter consists of three sections. The first section summarizes the results of the data analysis. The second section discusses the results of the study. The last section addresses the implications of the study for HRD researchers and practitioners.

Summary of Results

The following bullet points summarize the results of the study:

• Web-based and classroom-based training programs were most frequently evaluated for the process evaluation component, followed by the input evaluation component. On the other hand, web-based and classroom-based training programs were least frequently evaluated for the organizational context evaluation component, followed by the output evaluation component.

• Web-based and classroom-based training programs were meaningfully different on the process evaluation component. However, web-based and classroom-based training programs were not meaningfully different on the input, output, and organizational contexts components of evaluation.

• The demographic characteristics of HRD professionals were not meaningfully related to the practices used to evaluate web-based and classroom-based training programs for each evaluation component.

• The context and evaluation factors were the primary barriers preventing HRD
professionals from evaluating web-based and classroom-based training programs. The interview results showed that the barriers preventing HRD professionals from evaluating web-based and classroom-based training programs were identified as follows: human factors of evaluation barriers were lack of HRD professionals’ knowledge and skills, lack of credibility and responsibility in external evaluators or vendors, lack of HRD professionals’ commitment to evaluation, and lack of stakeholders’ commitment to evaluation. Context factors included the lack of management interest, limited organizational time and budget for evaluation, the unique structure of web-based training programs, and organizational characteristics and circumstances. Evaluation factors included outdated unreliable survey tools and lack of evaluation methods and tools for higher levels of evaluation.

• Web-based and classroom-based training programs were not meaningfully different on the three factors of evaluation barriers.

• The demographic characteristics of HRD professionals were not meaningfully related to the barriers of evaluating web-base and classroom-based training programs.

• The key decision factors for determining how HRD professionals evaluate their web-based and classroom-based training program were identified as follows: senior management’s needs, development of current and new training programs, type of training programs, political issues related to online courses, personnel benefits, and budget for training programs.
Discussion

This section discusses the results as well as some possible interpretations of the relationship between the results and the conceptual framework of the study. The premise of the study was that the evaluation of different training approaches, such as classroom-based and web-based training, should be planned and performed differently because the learning environments differed from each other (Curnow & Archambault, 2005; Jung & Rha, 2003; Rodgers, 2006; Rumble, 2001; Whalen & Wright, 1999). In general, the results of the study did not support the premise except for the process component of evaluation. The results did show some differences between web-based and classroom-based training programs in evaluation practices, but they were not judged to be meaningfully different.

*The Process Component of Evaluation*

The results of the study supported the premise for the process component of evaluation. Both of the survey and interview results showed that web-based and classroom-based training programs were most frequently evaluated for the process evaluation component, and web-based and classroom-based training programs were meaningfully different on this component. The interview results further explained that the HRD professionals in the study evaluated their web-based and classroom-based training programs using pre-existing evaluation tools, which were mostly surveys. However, they included different questions on the survey questionnaire for web-based and classroom-based training evaluation, since the elements that it is necessary to evaluate are different for web-based and classroom-based training programs. They also used different evaluation methods and tools for web-based and classroom-based training programs to
evaluate trainees’ participation and learning progress for training. These results might be explained with the following possible reasons.

Senior Management’s Needs

All five interviewees being studied here said that, when giving instructions for evaluation of web-based and classroom-based training programs, senior management at their companies was most interested in trainees’ satisfaction with training and their participation rates in classes, areas categorized as the process evaluation component in this study. They acted according to the assumption that training has its own effectiveness and thus, the most important goal of training is to have employees take classes. They also appeared to believe that trainees’ satisfaction equaled successful training. Thus, they perceived that evaluating trainees’ satisfaction was important. As a result, they asked HRD professionals to focus on the process evaluation component when evaluating their web-based and classroom-based training programs and thus the differences between these training approaches may be clearly revealed in the process evaluation component, an area of evaluation performed directly to satisfy their senior management’s goals.

Workforce Development Policy

Another possible explanation for these results involves the Korean government’s reimbursement of organizations’ costs for web-based training programs. The interviewees stated that, in order to receive this funding, their organizations must conduct evaluation of web-based training programs according to evaluation criteria set by the government and report the results. The required criteria for evaluating web-based training programs include primarily completion rates and satisfaction rates of trainees. Thus, to receive government support, organizations might request their HRD professionals to frequently evaluating their web-based training programs for the process evaluation
component. Accordingly, HRD professionals may be most familiar with how to appropriately evaluating the training approaches for this component than for the other three components and thus they might differently evaluate web-based and classroom-based training programs for this component.

*The Input Evaluation Component as a Part of the Process Evaluation Component*

The results of both the survey and the interview showed that web-based and classroom-based training programs were more frequently evaluated for the input evaluation component than for the output and organizational context components of evaluation. The interview results further explained that different questions were included on evaluation questionnaires for web-based and classroom-based training programs in this area. However, it can hardly be concluded that the input component was frequently evaluated by HRD professionals. The reason for the observed frequency in conducting input evaluation, based on the interview results, is that the input evaluation component was often considered to be a part of the process evaluation component, which means that it involved evaluating trainees’ satisfaction with training rather than intentionally conducting separate input evaluation. Thus, the results suggest that web-based and classroom-based training programs were basically evaluated for the process component and that there are some differences between these training approaches in this component.

*No Meaningful Differences between Web-based and Classroom-based Training in Evaluation Practices*

As stated previously, the two sources of data did not entirely support the original premise that the evaluation of different training approaches was performed differently in practice. The survey and interview results offer several possible reasons for this lack of support for the premise.
Lack of Support from Senior Management and Workforce Development Policy Makers for Training Evaluation

Both the survey and interview results showed that web-based and classroom-based training programs were less frequently evaluated for the output and organizational context components of evaluation than the input and process components of evaluation and these training approaches were not meaningfully different on the output and organizational contexts components of evaluation. The reasons can be explained as follows:

Lack of senior management’s support. The possible reason for these results, based on the interview results, is that senior managers were not often greatly interested in or committed to training evaluation. They were satisfied with their current evaluation tools and with how they currently evaluated their training programs, which mostly involved the evaluation of trainees’ satisfaction through survey. The interview results also suggest that organizations do not provide HRD professionals with any formal training for the evaluation of training programs. In addition, they did not want to either invest extra money in training evaluation or provide their HRD professionals with sufficient time to evaluate these training programs thoroughly. This lack of focus on evaluation is reflected by the survey data that over 90% of HRD professionals had less than 25% of their job tasks related to training evaluation.

In a word, senior management may not recognize the importance of training evaluation or consider training evaluation as an important factor for their business. Accordingly, the lack of management support may be reflected in the interview results that HRD professionals rarely evaluated their web-based and classroom-based training programs for the output and organizational context components of evaluation. As a result,
they may not perceive the differences necessitated by the task of evaluating their web-based and classroom-based training programs for the output and organizational context components of evaluation.

*Lack of support from workforce development policy makers.* Another possible reason for these results is that national evaluation policy makers in Korea also may not be aware of the importance of training evaluation or have enough of a budget to support the evaluation of diverse training approaches. Perhaps they lack knowledge and expertise in training evaluation, but they currently do not provide organizations with any effective, specific guidance or standards to conduct appropriate evaluation for web-based and classroom-based training programs. Accordingly, due to lack of any government evaluation standard or criteria, HRD professionals in Korea may struggle to appropriately evaluate these training approaches for the output and organizational context components of evaluation.

*Lack of HRD professionals’ Knowledge and Skills in Training Evaluation*

Second, the results of both the survey and the interview showed that the human factor was not the primary barrier preventing HRD professionals from evaluating web-based and classroom-based training programs, and web-based and classroom-based training programs were not meaningfully different on the human factor of evaluation barriers.

The reason for these results can be explained by the survey and interview results. The survey results showed that approximately 50% of organizations had been conducting their training programs over 7 years, whether evaluating web-based or classroom-based training programs. The interview results further explained that just as organizations have been conducting training programs for a long time, they also have been developed and
revised their survey templates continuously for as long as 20 to 30 years to fit with their organization’s characteristics and circumstances. Since HRD professionals mostly used these pre-existing survey forms to evaluate their training programs, which were not difficult to use, they may not be aware of their own lack of knowledge and expertise in the evaluation of both web-based and classroom-based training programs. Thus, they may not perceive any differences between web-based and classroom-based training programs in the human factor of evaluation barriers.

**Lack of Appropriate Theoretical Foundation for Training Evaluation**

Third, the results of both the survey and the interview showed that the evaluation factor was the primary barrier preventing HRD professionals from evaluating web-based and classroom-based training programs. The interview results further explained that the lack of evaluation methods and tools was perceived by the five interviewees, for evaluating both web-based and classroom-based training programs, mainly due to the difficulty of evaluating transfer of training and organizational results using current methods and tools. Both results showed that web-based and classroom-based training programs were not meaningfully different on this barrier.

A possible reason for these results comes from a lack of appropriate theoretical foundation for training evaluation in the HRD field, in terms of the dearth of effective or reliable evaluation methods and tools. Wang et al. (2002) state that existing evaluation tools and methods are inadequate to meet the needs of HRD practitioners, who need to make decisions about trainees’ performance after training and the impact of training on final business results in their own organizations, a task that is rendered particularly challenging because these decisions are affected by many intervening factors such as organizational culture and market condition. Other researchers (Curtain, 2002; Jung,
2003; Jung & Rha, 2000; Odden et al, 2002; Rumble, 2001; Wentling & Park, 2002; Whalen & Wright, 1999) also point out a current lack of comprehensive, tested, effective evaluation frameworks available, especially for comparison of different training approaches for practitioners, and most studies have shown difficulties in developing such evaluation frameworks.

As a result, current HRD professionals can have difficulty performing higher-level evaluation, and thus those in the study may rarely conduct this kind of evaluation for either training approach. Accordingly, they may not be able to recognize any differences between web-based and classroom-based training programs for this barrier.

**Weak Survey Instrument**

Fourth, the survey results showed that the context factor in evaluation barriers produced lower mean score for evaluating classroom-based training than web-based training programs. This means that the respondents who had experience in evaluating classroom-based training programs perceived more often barriers in the context factor than those who evaluated web-based training programs. However, the mean scores between two training approaches were rarely different.

On the other hand, the interview results showed different results from the survey. That is, the HRD professionals who had experience in evaluating web-based training programs perceived more often barriers in the context factor than those who evaluated classroom-based training programs, due to the unique structure of web-based training programs. The results suggest that web-based and classroom-based training programs were not meaningfully different on the context factor of evaluation barriers.

A possible explanation for these results is that the survey instrument in this study did not include questions related to the evaluation barriers for the unique structure of
web-based training programs on the survey questionnaire, thus generating different results in the survey and the interviews. Olson and Wisher (2002) point out that there is little consensus regarding what variables should be examined or what measures of learning are most appropriate, thus making it difficult to compare the evaluation of different training approaches. For this reason, the instrument design in this study might be flawed, producing the misleading result that web-based and classroom-based training programs were not meaningfully different on the context factor of evaluation barriers.

*Not Strong Premise*

Finally, the original premise -- that the evaluation of different training approaches should be performed differently -- might be not as strong as initially assumed. Many researchers (Jung & Rha, 2003; Rumble, 2001; Strother, 2002; Trentin, 2000; Whalen & Wright, 1999) stress that different training approaches should be evaluated differently, and, following this premise, that the evaluation of web-based and classroom-based training should be conducted differently. However, other researchers (Clark, 1994 & 2000; Garrison & Vayghan, 2008; Welsh et al., 2003) argue that the differences between training approaches such as web-based and classroom-based training might be due to quality of course design, quality of the instructor, or potential individual differences among instructors rather than the delivery modes themselves. Garrison and Vayghan (2008) stated that sound learning theories such as constructivism and social cognition for learning may be more important than delivery modes for ensuring effective learning. Thus, they suggest that effective teaching and learning principles and elements should be more considered than the unique elements of delivery mode, when comparing the evaluation of different training approaches.
Implications

Employing a methodology that combines quantitative and qualitative elements, this study contributes to empirical research that has been conducted only rarely in the HRD field. The study provides deeper understanding of how organizations actually evaluate their web-based and classroom-based training programs and whether there are differences between web-based and classroom-based training programs in their evaluation practices.

In answering these questions, this study found that most organizations focused on the process evaluation component to evaluate trainees’ satisfaction with training through surveys. In addition, this study found that web-based and classroom-based training programs were meaningfully different on the process evaluation component, while these training approaches were not meaningfully different on the input, output, and organizational context components of evaluation. It was also found that these training approaches were not meaningfully different on the three factors of evaluation barriers. Also, the results of this study suggest that the demographic characteristics of HRD professionals were not meaningfully related to the evaluation practices for web-based and classroom-based training programs.

Meanwhile, this study helps us understand in more depth the relationship between training evaluation and multiple stakeholders. That is, this study identified those who determined how to evaluate web-based and classroom-based training programs, and examined primary decision factors and their influences on determining how to evaluate these training approaches among these various stakeholders. Based on the results from the data analysis, discussion, and literature review, a revised conceptual framework is presented in figure 5.1.
Figure 5.1: The Revised Conceptual Framework

- **Type of Training Approach**
  - Web-based training
  - Classroom-based training

- **Evaluation Practices**
  - Process component of evaluation
  - Decision factors of evaluation
Implications for HRD Researchers

While the study offers a newly comprehensive view of HRD and training evaluation in multiple contexts, it leaves many areas of further research for future HRD researchers that are related mainly to four issues. First, the most urgent area for research involves how to develop effective and reliable evaluation methods and tools, especially for higher-level evaluation such as transfer of training or the financial benefits of training programs.

This study found that one of the primary barriers to evaluating training programs, whether it was web-based or classroom-based, was the unreliable, outdated evaluation methods and tools available to HRD practitioners. All companies being studied here perceived barriers in their ability to isolate training effectiveness from other intervening variables, such as clients’ characteristics or stock market circumstances, in order to evaluate trainees’ job performance or the financial benefits of training programs.

In fact, the interview results suggest that this was one of the most prevalent reasons why organizations were not committed to evaluating their training programs and avoided the higher level of training evaluation. Consequently, more active research on the evaluation methods and tools are needed. More specifically, this research should focus on how to develop and utilize effective evaluation methods and tools that are easy to use for practitioners and guide them to use these tools for evaluating different training approaches in appropriate ways.

Second, unlike evidence from existing literature, this study showed that web-based training programs were more frequently evaluated than classroom-based training programs for the organizational context component of evaluation due to the Korean
government’s support for online learning. In addition, the interview results showed that there were some differences in evaluation practices based on types of industries. For example, investment companies more often perceived barriers to evaluating their web-based and classroom-based training programs than other companies due to their unexpectedly changing stock market circumstances. Thus, further investigation is needed into to what degree a particular country or organization’s characteristics, culture, and circumstances influence training evaluation.

Since this study is limited to examining seven companies in one country, Korea, more comparison studies among various countries as well as companies would help to establish how countries and companies respond differently to training evaluation and to identify important factors that influence training evaluation in order to discover more about how to evaluate different training approaches in appropriate ways.

Third, the study points to the need for better, more accurate instruments for measuring the various factors surrounding training evaluation. As stated previously in the discussion section, the instrument used in this study had some weaknesses. For example, the survey instrument did not include questions related to the evaluation barriers for the unique structure of web-based training programs on the survey questionnaire, and thus it might produce the different results between survey and interview results.

The survey instrument used in the study followed Alkin’s evaluation framework for investigating the three factors of evaluation barriers. Although program characteristics were identified as part of barriers in the context factor in his framework, the unique structure of a certain type of training program, for example, web-based training as a self-study format, was not integrated as a context factor. Accordingly, it would be beneficial
for future research to add an element that considers the unique structure of a training program, such as whether it is web-based or classroom-based, as part of the context factor.

Lastly, further studies should be cautious when attempting to replicate this study about confirming the number of participants in the population and their responses on the study accurately. The population of this study was not all HRD professionals who worked in the department of HRD or training center in seven companies being studied, but only those who had experience in the evaluation of web-based and/or classroom-based training programs in their companies.

The limitation of this study was that the researcher was not able to directly contact all participants in the population. The reason was that some HRD representatives or directors were reluctant to provide the contact information for their HRD professionals to directly the researcher due to their organizational rules and policy, characteristics, or culture. Thus, instead of the researcher, some HRD representatives or directors directly informed the HRD professionals involved in the evaluation of web-based and classroom-based training programs in their organizations about this study and asked them to complete the web-based survey.

The large-sized companies selected in this study had multiple different HRD branch offices, and the HRD professionals in these branch offices individually had different work experiences related to training and training evaluations in their offices, so it may have been difficult for some HRD representatives or directors to identify accurate numbers of their HRD professionals who were actually relevant to this study in their remote branch offices. Accordingly, further research should be deliberate and careful about confirming information about the participants in the study.
Implications for HRD Practitioners

The study includes several implications for HRD practitioners to improve current training evaluation in their organizations. First, this study found that the primary barrier was the context factor due to lack of interest in and commitment to training evaluation on the part of senior management. Thus, senior management must be aware of the importance of training evaluation and must deliberate thoughtfully on how to manage and maintain current training evaluation effectively. The following are the suggestions based on the results of this study to improve current training evaluation in practice:

1. Senior management and supervisors should show their interest in and commitment to training evaluation and encourage their HRD professionals to evaluate web-based and classroom-based training programs in appropriate ways, providing sufficient resources and staff support for them to do so effectively.

2. Senior management need to improve the quality of their current training evaluation systems, which are heavily reliant on measuring trainees’ satisfaction and use existing survey forms for both web-based and classroom-based training programs.

3. Senior management may need to revise current personnel policy and benefits related to training evaluation, focusing on the ways of improving the quality of training programs rather than increasing the quantity of training programs. For example, since organizations evaluate their HRD professionals’ performance based on the number of purchase of online courses from vendors with the cheapest prices, HRD professionals concentrate more on increasing the quantity of courses rather than on
increasing the quality of those courses. This structure can be hardly
guaranteed to deliver good quality of training courses to their employees.

4. Senior management should encourage stakeholders to participate in the
process of training evaluation and communicate collaboratively so that the
stakeholders meet their needs and goals for the evaluation results.

Second, this study found that most participants unaware of evaluation barriers that
came from the lack of HRD professional’s knowledge and skills in training evaluation,
since they mostly used and reused existing survey templates to evaluate trainees’
satisfaction for both web-based and classroom-based training programs. Eseryel (2002)
points out that a lack of in-depth professional knowledge in training evaluation is one of
main reasons that evaluation activities are limited to reaction sheets or learning tests.
Especially, Steward-Rattray, Morgan and Shueler (2001) point out that HRD
professionals have a significant lack of understanding of what information is necessary to
evaluate web-based training programs. Accordingly, professional development of training
evaluation is a very important factor to improve current training evaluation in the
workplace.

Third, this study also found that the most frequently perceived human factor of
evaluation barriers was lack of credibility for external evaluators or vendors. Most
organizations being studied here were reluctant to hire an external evaluator to evaluate
training programs, because they did not believe that he or she knew their organization’s
characteristics and circumstance better than their staff, and thus did not trust the
evaluation results provided by an external evaluator. Especially, most organizations
perceived barriers to evaluating web-based training programs because of the training
evaluation tools used by outsourcing companies and their lack of responsibility for
evaluation after training. Thus, it is necessary for external evaluators and professional
vendors to build a trust relationship with organizations, developing and delivering high
quality training evaluation.

Finally, national evaluation policy makers in Korea should provide organizations
with effective, specific guidance or standards to conduct appropriate evaluation for web-
based and classroom-based training programs. Especially, they should be aware of the
negative results related to their support for online courses. They should accurately
investigate actual prices of online courses in the market and reestablish current evaluation
criteria in the ways of reducing the negative practice of focusing on the quantity of online
courses with cheapest prices rather than quality of the courses. They should emphasize
the importance of evaluation in this process, requesting diverse evaluation reports that go
beyond trainees’ satisfaction with training from organizations in order to improve the
quality of evaluation and, overall, the quality of training.
REFERENCES


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APPENDIX A

SURVEY QUESTIONNAIRE TO HRD PROFESSIONERS (ENGLISH VERSION)
Dear participants,

We are pleased that you will respond to this anonymous web-based survey conducted by Ohio State University, Columbus, Ohio, U.S.A. The purpose of this study is to compare the practices used by human resource development professionals to evaluate web-based and classroom-based training programs. We will use this survey to make sure the evaluations for these training approaches are conducted in the most appropriate and effective way.

It will take about 15-25 minutes to respond the questionnaire. All responses to this questionnaire will be kept confidential. Only aggregate data will be reported in the study results. Your participation is voluntary and you can skip any questions that you do not wish to answer.

Although every effort to protect confidentiality will be made, no guarantee of internet survey security can be given, as, although unlikely, transmissions can be intercepted and IP addresses can be identified.

Please complete the survey and submit it by January 18, 2009.

If you have any questions or concerns about completing the questionnaire or about being in this study, please contact Eunsook Joo, Walker hill hotel, via email esjooods@walkerhill.co.kr or phone 02-450-6322.

Thank you so much for sharing your time and expertise in advance.

Ronald Jacobs, Ph.D.                                                Younghee Kong.
Ohio State University                                                Ohio State University
1-614-292-0581                                                       1-614-596-1663
Jacobs.3@osu.edu                                                     kong.40@osu.edu
Part I. Please check (✓) the appropriate response. If you have experience in the evaluation of both training approaches, then answer YES for both. If you have NO experience in the evaluation of these training approaches, please ignore this questionnaire.

**Classroom-based training refers to the instructor-led training in which content is delivered face-to-face via the instructor.**

**Web-based training refers to the media-led training in which content is delivered via the internet or intranet using a computer.**

1. Do you have experience in evaluating **classroom-based training programs**?
   - Yes (Please continue to answer the section “A” in Part II)
   - No

2. Do you have experience in evaluating **web-based training programs**?
   - Yes (Please continue to answer the section “B” in Part II)
   - No

If you check YES for both training approaches, please answer for both sections of “A” and “B” in Part II.
**Part II.** Please check (√) the appropriate response regarding the four components of evaluation for web-based and/or classroom-based training programs. After completing this section, please continue to answer Part III.

The four components of evaluation: Input, Process, Output, and Organizational Context Components of Evaluation.

**A. The four components of evaluation for Classroom-based Training.**

<table>
<thead>
<tr>
<th>Input Component</th>
<th>Never</th>
<th>Sometimes</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>I evaluate whether <strong>the trainees</strong> had the learning style suitable for classroom-based training.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I evaluate whether <strong>the trainee</strong> had prerequisites for classroom-based training.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I evaluate whether <strong>the trainer</strong> had appropriate competence to deliver classroom-based training.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I evaluate whether the necessary learning materials were available.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I evaluate whether the communications technology were suitable for classroom-based training.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I evaluate whether the instructional design were appropriate.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I evaluate whether the content was accurate.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I evaluate whether the content was complete.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I evaluate whether there was adequate funding for training.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I evaluate whether the rewards for training were available.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Process Component</td>
<td>Please rate the extent to which you include the following evaluations during the training.</td>
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<tr>
<td></td>
<td>Never</td>
<td>Sometimes</td>
<td>Always</td>
</tr>
<tr>
<td>1. I evaluate how much time it took to conduct the training.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. I evaluate whether the training location was adequate.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. I evaluate whether the training resources needed for training were available for use during training.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. I evaluate whether the communications technology such as email were used appropriately.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. I evaluate whether the trainer delivered the content as intended.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. I evaluate whether the trainer completed all ratings as intended.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. I evaluate whether the trainer completed all personnel forms as intended.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8. I evaluate whether the trainee followed the instruction as intended.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9. I evaluate whether the trainee attended to the training.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10. I evaluate whether the trainee was satisfied with the training content.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>11. I evaluate whether the trainee was satisfied with the type of training used.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>12. I evaluate whether the trainee was satisfied with the learning resources used including technology.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>Output Component</strong></td>
<td>Please rate the extent to which you include the following evaluations <strong>after classroom-based training has been completed.</strong></td>
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<tr>
<td></td>
<td><strong>Never</strong></td>
<td><strong>Sometimes</strong></td>
<td><strong>Always</strong></td>
</tr>
<tr>
<td>1. I evaluate whether the training objectives were achieved.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. I evaluate whether there were any unanticipated effects.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. I evaluate whether the training outcomes were consistent with the trainees’ development needs.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. I evaluate whether the trainee acquired his/her knowledge, skills and attitudes due to training.</td>
<td>1</td>
<td>2</td>
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<tr>
<td>5. I evaluate whether the trainee has transferred knowledge, skills, and attitudes to his/her jobs.</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>6. I evaluate whether the trainee improved his/her job performance as a result of training.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. I evaluate the financial benefits of the training.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Organizational Context Component</strong></th>
<th>Please rate the extent to which you include the following statements to evaluate your organizational context that classroom-based training exists.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Never</strong></td>
</tr>
<tr>
<td>1. I evaluate whether my organization provided sufficient resources to conduct classroom-based training.</td>
<td>1</td>
</tr>
<tr>
<td>2. I evaluate whether my organization provided sufficient staffing to conduct classroom-based training.</td>
<td>1</td>
</tr>
<tr>
<td>3. I evaluate whether the trainee received support from their supervisors on the transfer of training.</td>
<td>1</td>
</tr>
</tbody>
</table>
4. I evaluate whether my organization’s rules and regulations had an influence on classroom-based training. 1 2 3 4 5

5. I evaluate whether government supported the use of classroom-based training. 1 2 3 4 5

6. I evaluate whether classroom-based training fit with my organization’s size. 1 2 3 4 5

B. The four components of evaluation for Web-based Training.

<table>
<thead>
<tr>
<th>Input Component</th>
<th>Please rate the extent to which you include the following evaluations <strong>before conducting the training.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
</tr>
<tr>
<td>1. I evaluate whether the trainees had the learning style suitable for web-based training.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>2. I evaluate whether the trainee had prerequisites for web-based training.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>3. I evaluate whether the trainer had appropriate competence to deliver web-based training.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>4. I evaluate whether online experts were available to support web-based training.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>5. I evaluate whether technicians were available to support web-based training</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>6. I evaluate whether administrative staffs were available to support web-based training.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>7. I evaluate whether the necessary online learning materials were available.</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>
8. I evaluate whether the necessary hardware were available.  

9. I evaluate whether the network service were available.  

10. I evaluate whether the e-learning management system was suitable for web-based training.  

11. I evaluate whether the online communications tools suitable for web-based training.  

12. I evaluate whether the instructional design was appropriate.  

13. I evaluate whether the online content was accurate.  

14. I evaluate whether the online content was complete.  

15. I evaluate whether there was adequate funding for training.  

16. I evaluate whether the rewards for training were available.  

<table>
<thead>
<tr>
<th>Process Component</th>
<th>Please rate the extent to which you include the following evaluations during the training.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I evaluate how much time it took to conduct the training.</td>
</tr>
<tr>
<td>2.</td>
<td>I evaluate whether the training location was adequate.</td>
</tr>
<tr>
<td>3.</td>
<td>I evaluate whether technical experts were fully engaged to help technical problems during the training.</td>
</tr>
<tr>
<td>4.</td>
<td>I evaluate whether the training resources needed for the training were available for use during the training.</td>
</tr>
<tr>
<td>5.</td>
<td>I evaluate whether the online communication tools were suitable.</td>
</tr>
<tr>
<td>6.</td>
<td>I evaluate whether the online content was used as intended.</td>
</tr>
<tr>
<td>7.</td>
<td>I evaluate whether the trainer provided the trainee with immediate feedback.</td>
</tr>
<tr>
<td>8.</td>
<td>I evaluate whether the trainer actively involved the trainee</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Never</th>
<th>Sometimes</th>
<th>Always</th>
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<tr>
<td>1</td>
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</tr>
</tbody>
</table>
in group discussion. 1 2 3 4 5

9. I evaluate whether the trainer completed all ratings as intended. 1 2 3 4 5

10. I evaluate whether the trainer completed all personal forms as intended. 1 2 3 4 5

11. I evaluate whether the trainee followed the instruction as intended. 1 2 3 4 5

12. I evaluate whether the trainee attended the training. 1 2 3 4 5

13. I evaluate whether the trainee was satisfied with the training content. 1 2 3 4 5

14. I evaluate whether the trainee was satisfied with the type of training used. 1 2 3 4 5

15. I evaluate whether the trainee was satisfied with the online learning resources used. 1 2 3 4 5

16. I evaluate whether the trainee was satisfied with the technology communication tools used. 1 2 3 4 5

<table>
<thead>
<tr>
<th>Output Component</th>
<th>Please rate the extent to which you include the following evaluations after web-based training has been completed.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
</tr>
<tr>
<td>1. I evaluate whether the training objectives were achieved.</td>
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<td>7. I evaluate the financial benefits of the training.</td>
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<td>Organizational Context Component</td>
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</tr>
<tr>
<td>----------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Never</td>
</tr>
<tr>
<td>1. I evaluate whether my organization provided sufficient resources to conduct web-based training.</td>
<td>1</td>
</tr>
<tr>
<td>2. I evaluate whether my organization provided sufficient staffing to conduct web-based training.</td>
<td>1</td>
</tr>
<tr>
<td>3. I evaluate whether my organization is willing to maintain web-based training.</td>
<td>1</td>
</tr>
<tr>
<td>4. I evaluate whether the trainee received support from their supervisors on the transfer of training.</td>
<td>1</td>
</tr>
<tr>
<td>5. I evaluate whether government supported the use of web-based training.</td>
<td>1</td>
</tr>
<tr>
<td>6. I evaluate whether web-based training fit with my organization’s structure.</td>
<td>1</td>
</tr>
</tbody>
</table>

**Part III.** Please check (√) one rating from strongly disagree to strongly agree to the following statements. After you complete this section, please continue to answer Part IV.

<table>
<thead>
<tr>
<th></th>
<th>Classroom-based Training</th>
<th>Web-based Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>Strongly somewhat agree</td>
<td>Strongly Disagree somewhat agree</td>
</tr>
<tr>
<td>1. I am motivated to conduct evaluations.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>2. I actively get stakeholders to</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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3. I reflect on stakeholders’ comments in making evaluations.
4. I take into account the political context in making evaluations.
5. I have knowledge in making evaluations.

<table>
<thead>
<tr>
<th>Classroom-based Training</th>
<th>Web-based Training</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strongly disagree</strong></td>
<td><strong>Strongly disagree</strong></td>
</tr>
<tr>
<td><strong>somewhat</strong></td>
<td><strong>somewhat</strong></td>
</tr>
<tr>
<td><strong>agree</strong></td>
<td><strong>agree</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1. I can identify the range of potential stakeholders.</th>
<th>1. I can identify the range of potential stakeholders.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. I can identify all stakeholders’ expectations in evaluations.</th>
<th>2. I can identify all stakeholders’ expectations in evaluations.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. I can identify stakeholders’ preferences in conducting evaluations.</th>
<th>3. I can identify stakeholders’ preferences in conducting evaluations.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. I agree that stakeholders are motivated to use the evaluation results.</th>
<th>4. I agree that stakeholders are motivated to use the evaluation results.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1. I am willing to take the risk of having negative evaluation results of training.</th>
<th>1. I am willing to take the risk of having negative evaluation results of training.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. I have plenty of funding for evaluations.</th>
<th>2. I have plenty of funding for evaluations.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>
3. I have plenty of time for evaluations.  
4. I am satisfied with criteria for the evaluation set by my organization.  
5. My supervisor is supportive of my efforts to evaluate training programs.  
6. My organization heavily relies on the evaluation rather than other sources of information.  
7. My organization promotes evaluations to accomplish the needs of training.

<table>
<thead>
<tr>
<th>Classroom-based Training</th>
<th>Web-based Training</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strongly disagree</strong></td>
<td><strong>Strongly disagree</strong></td>
</tr>
<tr>
<td><strong>somewhat disagree</strong></td>
<td><strong>somewhat disagree</strong></td>
</tr>
<tr>
<td><strong>agree</strong></td>
<td><strong>agree</strong></td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>Classroom-based Training</th>
<th></th>
<th></th>
<th>Web-based Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I can appropriately choose the evaluation methods to evaluate a given training program.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>I can accurately evaluate the training program with the existing evaluation tools.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
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</tr>
<tr>
<td>3.</td>
<td>I can satisfy all the needs of stakeholders.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>I can use various evaluation models.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
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<tr>
<td>5.</td>
<td>I believe that progress reports provided in my organization is timely.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td></td>
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<tr>
<td>6.</td>
<td>I believe that progress reports provided in my organization is well-focused</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>I believe that final reports provided in my organization are accurate.</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
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</tbody>
</table>
8. I believe that evaluation results provided in my organization are useful to all stakeholders.

<table>
<thead>
<tr>
<th>1</th>
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<th>4</th>
<th>5</th>
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</tr>
</tbody>
</table>

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**Part IV.** Please complete the following items by filling in or checking (√) the appropriate blank.

1. What is the type of your organization?
   - Public
   - Private

   If you check “Private”, please choose your organization in the following industries.
   - Financial services
   - Automobile companies
   - Food
   - Educational services
   - IT services
   - Chemical manufacturing
   - Others

2. How many employees does your organization have?
   - Less than 500
   - 501-1,000
   - 1,001-3,000
   - 3,001-5,000
   - Over 5,001

3. How many years has your organization been conducting web-based and/or classroom-based training programs?
   - Less than 1 year
   - 1-3 years
   - 4-6 years
   - 7-10 years
   - More than 11 years

4. What is the level of your job?
   - Frontline employee
   - Assistant manager
   - Manager
   - Director

5. What is your highest level of formal education?
   - High school
   - College
   - Graduate school

6. What percentage of your work is related to training evaluation?
   - Less than 25%
   - 26-50%
   - 51-75%
   - More than 76%

   **Thank you so much!!!!!!!!!!!!!!**
APPENDIX B

INTERVIEW WITH HR/HRD DIRECTORS
(ENGLISH VERSION)
Dear HR or HRD directors,

We are pleased that you will respond to this interview conducted by Ohio State University, Columbus, Ohio, U.S.A. The purpose of this study is to compare the practices used by human resource development professionals to evaluate web-based and classroom-based training programs.

In spite of calls to evaluate web-based training programs differently from classroom-based training programs, there is limited information on whether organizations have actually responded to this recommendation. Therefore, your participation is extremely important. We will use this interview to make sure the evaluations for these training approaches are conducted in the most appropriate and effective way.

It will take about 45-60 minutes to respond the questions. You will be asked to share your opinions, thoughts, and feelings about the evaluation of web-based and classroom-based training programs in your organizations. All responses to this interview will be kept confidential. Your participation is voluntary and you can skip any questions that you do not wish to answer.

Although every effort to protect confidentiality will be made, telephone interview at your office may be not secure. I recommend you to have interview at home or any private and comfortable place.

This interview will start from January, XX, 2009.

If you have any questions or concerns about completing the interview questions or about being in this study, please contact Eunsook Joo, Walker hill hotel, via email esjoodfs@walkerhill.co.kr or phone 02-450-6322.

Thank you so much for sharing your time and expertise in advance.

Ronald Jacobs, Ph.D.  
Ohio State University  
1-614-292-0581  
Jacobs.3@osu.edu

Youngehee Kong.  
Ohio State University  
1-614-596-1663  
kong.40@osu.edu
Part I. Please tell me about your background.

- What type of industry do you work in?
- How long have you been working as an HR or HRD director in your organization?
- How long have you received evaluation reports for web-based and classroom-based training programs from your subordinates?
- Please tell me about your HRD systems related to training evaluation.

Part II. Please tell me about how your organization evaluates web-based and/or classroom-based training programs.

In the web-based/classroom-based training context,

- Can trainees choose the appropriate learning materials and activities based on their own preferences? If so, please explain how.
- Can trainees control the instruction to their own learning style? If so, please explain how.
- Is trainees’ cultural diversity an issue in class? If so, please explain how you deal with it.
- Does an instructor provide ice-breaker activities in the early stage of instruction? If so, explain what activities he/she provides.
- How does an instructor help trainees use instructional materials effectively?
- How does he/she get trainees to participate in learning in both formal and informal ways?
- How does an instructor identify the needs/interests/concerns of trainees?
- What are the communication tools between an instructor and trainees?
- Is trust-building between an instructor and trainees important in class? If so, explain how they establish trust.
• How do trainees collaborate and share information with their instructor and peers?

• In what ways do trainees reflect on what they learned?

• Can trainees apply what they learn to unfamiliar situations in their jobs? If so, how does the training guide them to do this?

• How does the instructor provide feedback to trainees?

• How does your organization monitor and track trainees’ learning progress?

• How does your organization assess trainees’ performance as a result of training?

• What assessment tools and techniques does your organization use?

• How does assessment impact instructor/staff workload?

• How does web-based/classroom-based training motivate trainees to continue with further learning?

Part III. What are the barriers preventing your staff from evaluating web-based and classroom-based training programs?

Part IV. How do your staff learn how to evaluate web-based/classroom-based training programs?

Part V. What kind of information are you looking for from evaluation?

Part VI. How do you use the results of evaluation?

Part VII. Please tell me about your overall feelings, thoughts, and concerns about the evaluation of web-based/classroom-based training programs in your organization.
인력자원개발 담당자 여러분들께,

오하이오주립대학교에서 실시하고 있는 본 설문에 참여해주신 여러분께 깊은 감사를드립니다. 본 설문조사의 목적인 사내 온라인 교육(online) 프로그램의 평가와 집합교육(classroom) 프로그램의 평가가 현장에서 어떻게 실행되고 있는지 비교분석하는 것입니다. 여러분의 설문참여는 가장 효과적이고 효율적으로 교육프로그램을 평가하는 방법을 찾는 중요한 자료가 될 것입니다.

설문지 작성은 약 15-25분 소요될 것입니다. 여러분의 모든 응답은 비밀이 보장되며, 연구 결과는 전체 자료만 보고 될 것입니다. 여러분의 연구 참여는 자발적이고 응답하고 싶지 않은 질문은 하지 않을 수 있습니다.

온라인 설문 작성시, 아주 이례적인 예지만, 정보 전송에 방해 받을 수 있으며, 여러분의 IP 주소가 노출될 우려가 있습니다. 설문 조사를 마친 후, 윈도우 창을 닫아 주십시오.

이 설문지를 2009년 1월 18일까지 작성해주시면 감사하겠습니다.

설문조사와 관련된 질문이 있으며, 워커힐 주 은숙 팀장에게 이메일 esjoodfs@walkerhill.co.kr 이나 전화 02-450-6322로 연락주시길 바랍니다. 여러분의 참여에 다시 한번 깊은 감사를드립니다.

Ronald Jacobs, Ph.D.  Younghee Kong, M.A.
오하이오 주립대학교  오하이오 주립 대학교
1-614-292-0581 1-614-596-1663
Jacobs.3@osu.edu kong.40@osu.edu
Part I. 아래 각 문항마다 귀하의 의견과 일치하는 곳에 √표를 해주십시오.
귀하가 온라인 교육프로그램 평가와 집합교육 프로그램 평가에 둘 다 경험있으면 각 문항에 “예” 를 체크하시면 됩니다. 만약 위의 업무 모두에 관한 경험이 전혀 없으면, 이 질문을 중단하여주시기 바랍니다.

* 집합교육 (classroom-based training): 한정된 시간과 지정된 공간에서 강사와 교육생들이 그룹형식으로 직접 만나서 교육하는 프로그램. (예: 강의실, 실험실에서 교육)

* 온라인 교육 (online training): 강사와 교육생의 집적적 접촉없이 인터넷상으로 교육하는 것. 보통 교육생이 시간과 장소에 구애받지 않고 개인 컴퓨터를 통해 교육 받을 수 있는 프로그램.

3. 귀하는 집합교육 프로그램을 평가 (evaluation) 해본 경험이 있거나 현재 하고 계십니까?
   _____ 예 (Part II에 있는 Section A에 대해 응답해주십시오.)
   _____ 아니오

4. 귀하는 온라인 교육 프로그램을 평가 (evaluation)해본 경험이 있거나 현재 하고 계십니까?
   _____ 예 (Part II에 있는 Section B에 응답해주십시오.)
   _____ 아니오

두 교육 프로그램 모두 평가해 본 경험이 있거나 현재 평가를 실행하고 있는 분들은 Section A 와 B 모두 응답해주십시오.
Part II. 다음은 온라인 교육과 집합 교육 프로그램을 평가하기 위한 4 가지 평가요소들입니다. 아래 각 문항에 알맞는 만에 체크(✓) 해주십시오. 이 문항들을 모두 응답하신 후, Part III 을 응답해주십시오.

* 4 가지 평가 요소: 1) 교육 실시전 평가 (Input Evaluation Component), 2) 교육진행과정 평가 (Process Evaluation Component), 3) 교육후 결과 평가 (Output Evaluation Component), 4) 교육 환경 평가 (Organizational context Evaluation Component).

C. 집합교육 (Classroom training) 프로그램 평가 (Evaluation)

<table>
<thead>
<tr>
<th>교육전 평가 (Input Component)</th>
<th>교육 프로그램 시작하기 전 필요한 요소들을 평가하기 위해, 어느정도로 다음과 같은 평가활동을 하십니까?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>전히 하지 않는다</td>
</tr>
<tr>
<td>1. 나는 교육생의 학습 유형이 집합교육에 적합했는지 평가한다.</td>
<td>1</td>
</tr>
<tr>
<td>2. 나는 교육생이 교육에 필요한 선수지식 (prerequisite)을 가졌는지 평가한다.</td>
<td>1</td>
</tr>
<tr>
<td>3. 나는 강사가 집합교육을 통해 해당 프로그램을 가르칠 수 있는 적합한 능력을 가졌는지 평가한다.</td>
<td>1</td>
</tr>
<tr>
<td>4. 나는 교육 프로그램에 필요한 자료들이 모두 준비되었는지 평가한다.</td>
<td>1</td>
</tr>
<tr>
<td>5. 나는 강사와 교육생간에 교육 기간중 사용할 커뮤니케이션 수단 (예: 이메일)이 준비되었는지 평가한다.</td>
<td>1</td>
</tr>
<tr>
<td>6. 나는 교육 프로그램이 알맞게 설계되었는지 평가한다.</td>
<td>1</td>
</tr>
<tr>
<td>7. 나는 교육생들이 형식화 되었다는지를 평가한다.</td>
<td>1</td>
</tr>
<tr>
<td>8. 나는 교육 프로그램에 필요한 예산이 충분히 있었는지 평가한다.</td>
<td>1</td>
</tr>
<tr>
<td>9. 나는 교육을 위한 보상제도 (예: 상여금, 승진 혜택)가 있었는지 평가한다.</td>
<td>1</td>
</tr>
</tbody>
</table>

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교육 과정 평가
(Process Component)

교육 프로그램 진행 과정을 평가하기 위해, 어느 정도로 다음과 같은 평가 활동을 하십니까?

<table>
<thead>
<tr>
<th>행</th>
<th>설명</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>나는 교육 시간이 적당했는지 평가한다.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>나는 교육 장소가 적당했는지 평가한다.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>나는 교육중 필요한 교보및 교보재들을 모두 제공되었는지 평가한다.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>나는 교육 기간중 강사와 교육생 간에 사용한 커뮤니케이션 수단 (예: 이메일)이 적당했는지 평가한다.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>나는 강사가 교육 내용을 계획했던대로 전달했는지 평가한다.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>나는 강사가 교육생 평가를 계획했던대로 했는지 평가한다.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>나는 강사가 행정업무에 필요한 서류 작성을 했는지 평가한다.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>나는 교육생이 해당 교육 프로그램을 통해 의도했던 교육 내용을 받았는지 평가한다.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>나는 교육생의 교육 참석률을 평가한다.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>나는 교육생이 교육 내용에 만족했는지 평가한다.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>나는 교육생이 집합교육형식에 만족했는지 평가한다.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>나는 교육생이 교재및 교보재들에 만족했는지 평가한다.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
결과평가
(Output Component)

집합교육이 끝난 후 프로그램의 결과를 평가하기 위해, 어느 정도로 다음과 같은 평가활동을 하십니까?

<table>
<thead>
<tr>
<th></th>
<th>전혀 하지 않는다</th>
<th>가끔 한다</th>
<th>항상 한다</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 나는 해당 (교육) 프로그램이 교육목적을 달성했는지 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. 나는 해당 프로그램의 시행으로 예상치 못했던 결과가 있었는지 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. 나는 교육이 교육생의 요구와 일치했는지 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. 나는 교육생이 교육을 통해 관련 지식이나 기술을 습득했는지 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. 나는 교육생이 배운 지식이나 기술을 본인의 업무에 응용했는지를 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. 나는 집합 교육의 결과로 교육생의 업무 수행 능력이 향상됐는지 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. 나는 집합 교육 후 경제적 손익 분석 평가 (예:ROI)를 한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

(조직 환경 평가)
Organizational Context Component

집합 교육 프로그램을 실행하는데 영향을 끼치는 조직 환경을 평가하기 위해, 어느정도로 다음과 같은 평가활동을 하십니까?

<table>
<thead>
<tr>
<th></th>
<th>전혀 하지 않는다</th>
<th>가끔 한다</th>
<th>항상 한다</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 나는 우리 회사가 집합 교육을하기 위해 충분한 물적 자원을 제공했는지 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. 나는 우리 회사가 집합 교육을 하기 위해 충분한 인적자원을 제공했는지 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
3. 나는 교육생이 교육 내용을 그들의 업무에 응용할 수 있도록 상사들이 협조했는지를 평가한다. 1 2 3 4 5
4. 나는 우리의 사규가 집합 교육에 영향을 미쳤는지를 평가한다. 1 2 3 4 5
5. 나는 정부에서 우리의 집합 교육을 지원했는지 평가한다. 1 2 3 4 5
6. 나는 집합 교육이 우리 회사의 조직 특성에 적합했는지를 평가한다. 1 2 3 4 5

D. 온라인 교육 (Online training) 프로그램 평가 (Evaluation)

<table>
<thead>
<tr>
<th>교육전 평가 (Input Component)</th>
<th>온라인 교육 프로그램 시작하기 전 필요한 요소들을 평가하기 위해, 어느정도 다음과 같은 평가 활동을 하신가요?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>전체 하지 않는다</td>
</tr>
<tr>
<td>1. 나는 교육생의 학습 유형이 온라인 교육에 적합했는지를 평가한다.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>2. 나는 교육생이 온라인 교육에 필요한 선수지식 (prerequisite)를 가졌는지 평가한다.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>3. 나는 강사가 온라인 교육을 통해 해당 프로그램을 가르칠 수 있는 적합한 능력을 가졌는지 평가한다.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>4. 나는 온라인 교육에 필요한 내용 전문가가 온라인상에 준비하고 있었는지를 평가한다.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>5. 나는 온라인 교육의 기술적인 문제를 지원하기 위해 기술자가 온라인상에 준비하고 있었는지 평가한다.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>6. 나는 온라인 교육에 필요한 행정 업무 담당자들이 준비되었는지를 평가한다.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>7. 나는 온라인 교육에 필요한 자료들이 모두 준비되었는지를 평가한다.</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>
8. 나는 온라인 교육에 필요한 하드웨어 (예: 컴퓨터)가 준비되었는지 평가한다.
   1  2  3  4  5

9. 나는 온라인 교육에 필요한 기반시설 (예: 네트워크 서비스)이 준비되었는지 평가한다.
   1  2  3  4  5

10. 나는 온라인 교육 프로그램을 위한 학습관리시스템 (예: LMS)이 준비되었는지 평가한다.
    1  2  3  4  5

11. 나는 온라인 교육 중 사용할 온라인 커뮤니케이션 수단 (예: 이메일, 채팅등)이 적합 했는지 평가한다.
    1  2  3  4  5

12. 나는 교육 프로그램이 알맞게 설계되었는지 평가한다.
    1  2  3  4  5

13. 나는 교육할 업무내용이 정확히 분석되었는지를 평가한다.
    1  2  3  4  5

14. 나는 교육할 내용이 모두 포함되었는지 평가한다.
    1  2  3  4  5

15. 나는 교육 프로그램에 필요한 예산이 충분히 있었는지 평가한다.
    1  2  3  4  5

16. 나는 교육을 위한 보상제도 (예: 상여금, 승진 혜택)가 있었는지 평가한다.
    1  2  3  4  5

| 교육 과정 평가 (Process Component) | 교육 프로그램 진행 과정을 평가하기 위해, 어느 정도로 다음과 같은 평가 활동을 하십니까? |
|----------------------------------|---------------------------------------------------------------------------------
|                                  | 전혀 하지 않는다 | 가끔 한다 | 항상 한다 |

1. 나는 교육 시간이 적당했는지 평가한다.
   1  2  3  4  5

2. 나는 교육 장소 (예: 장소, 집)가 적당했는지 평가한다.
   1  2  3  4  5

3. 나는 교육 중 발생한 기술적 문제가 모두 해결되었는지 평가한다.
   1  2  3  4  5

4. 나는 교육 중 필요했던 교보 및 교보재들이 모두 제공되었는지 평가한다.
   1  2  3  4  5

5. 나는 교육 중 강사와 교육생간에 사용한 온라인 커뮤니케이션
<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6. 나는 교육 내용이 계획했던대로 전달했는지 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. 나는 온라인 강사(튜터)가 교육생에게 즉시 피드백을 주었는지 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. 나는 온라인 강사가 교육생을 적극적으로 수업에 참여시켰는지 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. 나는 온라인 강사가 교육생 평가를 계획했던대로 했는지 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. 나는 온라인 교육 담당자가 행정에 필요한 서류작성을 끝냈는지 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. 나는 교육생이 해당 교육 프로그램을 통해 의도했던 교육 내용을 받았는지 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12. 나는 교육생의 교육 참석률을 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. 나는 교육생이 교육 내용에 만족했는지 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. 나는 교육생이 온라인 교육형식에 만족했는지 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. 나는 교육생이 온라인 교육에 쓰였던 교재 및 교보재들에 만족했는지 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. 나는 교육생이 교육중 사용했던 온라인 커뮤니케이션 수단(예: 이메일, 게시판)들에 만족했는지 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

결과평가 (Output Component)

온라인 교육이 끝난 후 프로그램의 결과를 평가하기 위해, 어느 정도로 다음과 같은 평가 활동을 하신가요?

<table>
<thead>
<tr>
<th></th>
<th>전혀 하지 않았다</th>
<th>가끔 한다</th>
<th>항상 한다</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 나는 해당 (교육) 프로그램이 교육목적을 달성했는지 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. 나는 해당 프로그램의 시행으로 예상치 못했던 결과가 있었는지 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>3. 나는 교육이 교육생의 요구와 일치했는지 평가한다.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. 나는 교육생이 교육을 통해 관련 지식이나 기술을 습득했는지 평가한다.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. 나는 교육생이 배운 지식이나 기술을 본인의 업무에 응용했는지를 평가한다.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. 나는 온라인 교육의 결과로 교육생의 업무 수행 능력이 향상됐는지를 평가한다.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. 나는 온라인 교육 후 경제적 손익 분석 평가 (예: ROI)를 한다.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(조직 환경 평가)</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational Context Component</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>온라인 교육 프로그램 실행하는데 영향을 끼치는 조직 환경을 평가하기 위해, 어느정도 다음과 같은 평가 활동을 하십니까?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>전혀 하지 않는다</th>
<th>가끔 한다</th>
<th>항상 한다</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 나는 우리 회사가 온라인 교육을하기 위해 충분한 물적 자원을 제공했는지를 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. 나는 우리 회사가 온라인 교육을 하기 위해 충분한 인적자원을 제공했는지를 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. 나는 교육생이 교육 내용을 그들의 업무에 응용할 수 있도록, 상사들이 협조했는지를 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. 나는 우리 회사의 사규가 온라인 교육에 영향을 미쳤는지를 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. 나는 정부에서 우리의 온라인 교육을 지원했는지를 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. 나는 온라인 교육이 우리 회사의 조직 특성에 적합했는지를 평가한다.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Part III. 아래 각 문항마다 귀하의 의견과 일치하는 곳에 √표를 해주십시오.
집합교육 프로그램 평가만 경험이 있는 경우, 집합교육 컬럼만 응답하십시오.
온라인 교육 프로그램 평가만 경험있는 경우, 온라인 교육 컬럼만 응답하십시오.
온라인 교육프로그램 평가와 집합교육 프로그램 평가에 모두 경험있으면 모두 응답하십시오.
작성 후, Part IV의 각 문항에 응답하십시오.

* 이해관계자: 교육 프로그램 평가에 영향을 미치거나 영향을 받는 모든 사람들 (예: 교육생, 강사, 관련 행정업무 담당자들, 경영진, 정부, 교육 프로그램을 지원하는 외부기관등)

<table>
<thead>
<tr>
<th></th>
<th>집합 교육</th>
<th>온라인 교육</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>전혀</td>
<td>약간</td>
</tr>
<tr>
<td></td>
<td>아니다</td>
<td>그렇다</td>
</tr>
</tbody>
</table>

1. 나는 집합/온라인 교육 프로그램을 평가하는 일에 의욕을 갖고 있다.
   1 2 3 4 5 1 2 3 4 5

2. 나는 이해관계자들을 프로그램 평가과정에 적극적으로 참여시킨다.
   1 2 3 4 5 1 2 3 4 5

3. 나는 이해관계자들의 의견을 프로그램을 평가할 때 반영한다.
   1 2 3 4 5 1 2 3 4 5

4. 나는 프로그램 평가할때 정치적 맥락 (political context)을 고려한다.
   1 2 3 4 5 1 2 3 4 5

5. 나는 집합교육/온라인 교육 프로그램 평가에 대한 지식이 있다.
   1 2 3 4 5 1 2 3 4 5
<table>
<thead>
<tr>
<th></th>
<th>집합 교육</th>
<th></th>
<th>온라인 교육</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>전혀</td>
<td>약간</td>
<td>확실히</td>
<td>전혀</td>
</tr>
<tr>
<td></td>
<td>아니다</td>
<td>그렇다</td>
<td>그렇다</td>
<td>아니다</td>
</tr>
</tbody>
</table>

1. 나는 해당 교육과 관련된 이해관계자가 누구인지 모두 알고 있다.
   | 1 | 2 | 3 | 4 | 5 |
   | 1 | 2 | 3 | 4 | 5 |
2. 나는 이해관계자들의 평가에 대한 기대치를 파악하고 있다.
   | 1 | 2 | 3 | 4 | 5 |
   | 1 | 2 | 3 | 4 | 5 |
3. 나는 이해관계자들이 선호하는 평가방식이 무엇인지 파악할 수 있다.
   | 1 | 2 | 3 | 4 | 5 |
   | 1 | 2 | 3 | 4 | 5 |
4. 나는 이해관계자들이 평가 결과를 활용하고자 한다고 생각한다.
   | 1 | 2 | 3 | 4 | 5 |
   | 1 | 2 | 3 | 4 | 5 |

<table>
<thead>
<tr>
<th></th>
<th>집합 교육</th>
<th></th>
<th>온라인 교육</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>전혀</td>
<td>약간</td>
<td>확실히</td>
<td>전혀</td>
</tr>
<tr>
<td></td>
<td>아니다</td>
<td>그렇다</td>
<td>그렇다</td>
<td>아니다</td>
</tr>
</tbody>
</table>

1. 나는 프로그램의 평가 결과가 부정적일 수 있다는 위험성을 기꺼이 받아들인다.
   | 1 | 2 | 3 | 4 | 5 |
   | 1 | 2 | 3 | 4 | 5 |
2. 나는 프로그램 평가하는데 충분한 예산을 갖고있다.
   | 1 | 2 | 3 | 4 | 5 |
   | 1 | 2 | 3 | 4 | 5 |
3. 나는 프로그램 평가하는데 충분한 시간을 갖고있다.
   | 1 | 2 | 3 | 4 | 5 |
   | 1 | 2 | 3 | 4 | 5 |
4. 나는 우리 회사가 정한 평가 기준에 만족한다.
   | 1 | 2 | 3 | 4 | 5 |
   | 1 | 2 | 3 | 4 | 5 |
5. 나의 상사는 나의 교육 프로그램 평가 업무를 지원해준다.
6. 우리 회사는 사내에서 작성된 평가 자료를 신뢰한다.
7. 우리 회사는 보다나은 교육 프로그램을 만들기 위해 적극적으로 평가를 한다.

<table>
<thead>
<tr>
<th>접합교육</th>
<th>온라인 교육</th>
</tr>
</thead>
<tbody>
<tr>
<td>전혀</td>
<td>약간</td>
</tr>
<tr>
<td>아니다</td>
<td>그렇다</td>
</tr>
<tr>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>

1. 나는 주어진 교육 프로그램에 알맞은 평가방법 (예: 인터뷰, 설문조사)을 선택할 수 있다.
2. 나는 기존의 평가방법과 도구를 사용해 교육 프로그램을 정확히 평가할 수 있다.
3. 나는 평가를 통하여 이해관계자들의 요구를 만족시킬 수 있다.
4. 나는 다양한 평가 모델들을 사용할 수 있다.
5. 나는 우리회사가 평가 중간 보고서를 적절한 시기에 제출한다고 믿는다.
6. 나는 우리 회사가 제출한 평가 중간 보고서가 정확하다고 믿는다.
7. 나는 우리회사가 제출한 최종 평가 결과 보고서가 정확하다고 믿는다.
8. 나는 우리회사에서 제출한 평가 결과 보고서들이 모든 이해관계자들에게 유익하다고 믿는다.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Part IV. 아래 각 문항마다 귀하의 의견과 일치하는 곳에 √표를 해주십시오.

1. 귀사는 다음 중 어디에 해당합니까?
   □ 공기업  
   □ 사기업

사기업에 체크하셨다면, 귀사는 다음의 업종 중 어디에 해당합니까?
   □ 생활관련제조업(식품, 제약, 섬유, 의류)  
   □ 가공조립형제조업(석유, 기계, 통신, 자동차)
   □ 기초소재형제조업(목재, 종이, 화학, 금속)  
   □ 금융보험업(은행, 보험, 증권)
   □ 건설/전기/가스/수도업  
   □ 정보통신, 컴퓨터 관련 산업
   □ 도소매업/음식/숙박업/유통무역업  
   □ 기타 서비스업(언론, 출판, 문화, 교육, 의료)

2. 귀사의 직원수는 몇 입니까?
   □ 500 명 미만  
   □ 501 명과 1000 명 사이
   □ 1,001 명과 3,000 명 사이
   □ 3,001 명과 5,000 명 사이
   □ 5,001 명 이상

3. 귀사는 온라인 교육이나 집합 교육을 얼마나 오랫동안 실행해 왔습니까?
   □ 1 년 미만  
   □ 1 년과 3 년 사이
   □ 4 년과 6 년 사이
   □ 7 년과 10 년 사이
   □ 11 년 이상

4. 귀하의 직위는 무엇입니까?
   □ 사원   □ 대리   □ 과장   □ 부서장(부장, 차장)  □ 임원

5. 귀하의 교육은 수준은 어느 정도입니까?
   □ 고등학교 졸업
   □ 대학졸업
   □ 대학원 졸업

6. 귀하는 전체 업무에서 교육 평가 업무가 차지하는 비중이 얼마나 됩니까?
   □ 25% 미만  
   □ 26%에서 50% 사이
   □ 51%에서 75% 사이
   □ 76%이상

대단히 감사합니다.
APPENDIX D

INTERVIEW QUESTIONS TO HR/HRD DIRECTORS
(KOREAN VERSION)
인력자원개발팀 디렉터분들께,

오하이오주립대학교에서 실시하고있는 본 설문에 참여해주신 여러분께 깊은 감사를드립니다. 본 설문조사의 목적은 사내 온라인 교육(online) 프로그램의 평가와 집합교육(classroom) 프로그램의 평가가 현장에서 어떻게 실행되고 있는지 비교분석하는 것입니다.

온라인 교육 평가는 집합 교육 평가와는 다르게 실시되어야 하지만, 실제로 사내에서 올바르게 교육 평가가 이뤄지고 있는지에 대한 정보는 거의 없습니다. 따라서, 여러분의 연구 참여는 가장 효과적이고 효율적으로 교육프로그램을 평가하는 방법을 찾는 중요한 자료가 될 것입니다.

인터뷰 소요시간은 약 45-60 분이며, 사내 온라인 교육과 집합 교육 프로그램 평가에 대한 여러분의 견해에 대한 인터뷰입니다. 여러분의 모든 인터뷰 내용은 비밀이 보장되며, 여러분의 연구 참여는 자발적이고, 응답하고 싶지 않은 질문은 하지 않을 수 있습니다.

비밀 보장을 위해 최선의 노력을 다할 지라도, 여러분의 각정에서의 인터뷰는 안전이 보장되지 않습니다. 여러분의 집이나 사적이고 편안한 장소에서 인터뷰를 응하시기를 권합니다.

인터뷰는 2009년 1월 XX일 실시될 예정입니다.

인터넷에 관련된 질문이 있으면, 위커힐 주 은수 맨저에게 이메일 esjoodfs@walkerhill.co.kr이나 전화 02-450-6322 로 연락 주시길 바랍니다. 여러분의 참여에 다시 한번 깊은 감사를드립니다.

Ronald Jacobs, Ph.D.  
오하이오 주립 대학교  
1-614-292-0581  
Jacobs.3@osu.edu

Younghhee Kong, M.A.  
오하이오 주립 대학교  
1-614-596-1663  
kong.40@osu.edu
Part I. 귀하의 업무 배경에 대해 말씀해 주십시오.

• 어떤 업종에서 일하고 계십니까?
• 귀하의 조직에서 얼마 동안 디렉터로서 일하고 계십니까?
• 귀하는 부하직원으로부터 얼마 동안 온라인과 집합 교육에 대한 평가 보고서를 받고 있습니까?
• 귀하의 조직내 교육 평가 시스템에 대해서 말씀해 주십시오.

Part II. 귀하의 조직은 온라인 교육과 집합 교육을 어떻게 평가하고 있는지에 대해, 말씀해주십시오.

온라인 교육과 집합 교육 실행시,

• 교육생들은 본인들의 기호에 따라, 교재 및 교육 활동을 선택할 수 있습니까? 그렇다면, 어떻게 하고 있는지 설명해 주십시오.
• 교육생들은 본인들의 학습 유형에 따라, 강의 내용을 컨트롤 할 수 있습니까? 그렇다면, 어떻게 하고 있는지 설명해 주십시오.
• 수업 중, 교육생들의 다양성이 문제가 되니까? 그렇다면, 귀하의 조직은 어떻게 다루고 있는지 설명해 주십시오.
• 강사는 강의 초에, ice-breaker 활동을 하고 있습니까? 그렇다면, 무슨 활동을 하는지 설명하여 주십시오.
• 강사는 어떻게 교육생들이 효과적으로 강의 자료들을 쓸 수 있게끔 도와주니까?
• 강사는 어떻게 교육생들이 정식적으로나 사적으로 교육에 참여하게끔 합니까?
• 강사는 어떻게 교육생들의 필요성/관심/우려등을 파악합니까?
• 강사와 교육생들 간의 커뮤니케이션 수단은 무엇입니까?
• 강사와 교육생들간의 신임 (Trust)가 중요합니까? 그렇다면, 어떻게 서로간에 신임을 쌓는지 설명해 주십시오.
• 교육생들은 어떻게 그들의 강사와 교육생들간에 정보를 공유하고 협조합니까?
• 교육생들은 어떻게 본인들이 배운 지식을 숙지할까요?
• 교육생들은 본인들이 배운것을 그들의 현 업무의 낮은 상황에 적용할 수 있을까요? 그렇다면, 교육이 어떻게 그들을 그렇게 할 수 있도록 가이드했을까요?
강사는 어떻게 교육생들에게 피드백을 줍니까?
귀하는 어떻게 교육생들의 교육 발달 진행을 모니터링합니까?
귀하는 교육의 결과로서, 교육생들의 업무가 항상 있는지를 어떻게 평가합니까?
귀하의 조직은 어떤 평가도구와 평가 기술을 사용합니까?
교육 평가하는 일이 강사나 직원의 일에 어느 정도 영향을 가짐니까?
온라인 교육/집합 교육이 어떻게 미래 교육을 계속하도록 동기 부여합니까?

Part III. 무엇이 온라인 교육/집합 교육 평가를 방해합니까?

Part IV. 귀하의 직원들은 어떻게 온라인 교육/집합 교육 평가하는 법을 배울니까?

Part V. 귀하는 교육 평가로부터 어떤 정보를 얻길 원합니까?

Part VI. 귀하는 평가 보고서들을 어떻게 사용합니까?

Part VII. 마지막으로, 온라인 교육/집합 교육 평가에 관련하여, 귀하의 생각, 걱정, 의견들을 말씀해 주십시오.