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Huang, Po-Ying. ***Needs Assessment for Inspectors of Certification Company***

Abstract

Although the use of needs assessment has been often applied in the training field, the concept of instructional design process is not widely used in the transportation and logistic service industry in Northeast Asia. It appears that the inspectors in this field rely on their hands-on experiences or regular training courses chosen by company management. Thus, this study aims to conduct needs assessment to explore the competence gap of inspectors between "what is" and "what should be" as the first step of training. This study started with management interviews to collect the information of the case organization and create a pilot survey. An inspector needs assessment survey was created after refining questions from the pilot survey. Descriptive statistics and multivariate analysis of variance were analyzed. The major findings indicated that inspectors had strong training needs, preferred workshops and two-hour training approximately every week. The top three needed training courses are advanced certification knowledge, foreign languages, and communication skill. Communication skill is the priority of soft skill while advanced certification knowledge is the leading technical skill. The study results may provide the necessary tools in sensitizing management level to understand emerging issues that inspectors have faced in their workplace and benefit both organizations and employees.

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Chapter I: Introduction

Changes in transportation have been one of the largest influences on human history. As technology has advanced, from horses to trains, trucks, and airplanes, improvement has centered on finding more convenient and economic solutions to facilitating the movement of people and trade. Marine transit is no exception. Since a refitted oil tanker carried fifty-eight shipping containers from Newark to Houston in April 1956, the container shipping industry has helped launch a boom in modern global trade (Levinson, 2006, p.1). The value of this transformation lies not only in what a container is, but also in how it is used. It presents an automated system for moving goods from one place to another with a minimum of cost and in doing so reshapes the world economy. It is marvelous that globalization and technology convergence have flattened the world. Even companies are now becoming multinational and multicultural organizations within the labor market, as they realize that standardization of products and services is one of the essential methods to remaining competitive in a global supply chain for services and manufacturing.

Since the economic reform of China in 1978, many Chinese products and services have failed to meet Western quality assurance standards in the rapidly expanding global market. Successful adoption of worldwide quality recognition means that a firm's products and services are certified under global normalization which is essential when customers are not familiar with the firm on the other side of the world. Therefore, an international independent certification company could provide the necessary conformity assessment and accreditations.

In this paper, the researcher examines a particular certification company, the XYZ Certification Company. Here, XYZ is a pseudonym designed to protect company confidentiality. The XYZ Certification Company is a subdivision of XYZ Group, which was established in the late nineteenth century. XYZ Group has consistently built a full range of

certification and training services by helping clients comply with international standards, industry initiatives and customer requirements relating to quality, environment, safety, and social responsibility. It manages over 52,000 employees in 940 offices and laboratories worldwide within eight dedicated businesses: (1) marine, (2) inspection and in-service verification, (3) construction, (4) consumer products, (5) industry, (6) health, safety, and environment, (7) certification, and (8) government services and international trade (XYZ Group, n.d.). For instance, XYZ Group managed ten pavilions of the 2010 Shanghai Expo for their building and facilities standard services. The subsidiary XYZ Certification Company issues direct accreditation from the world's leading accreditation bodies, such as the International Organization for Standardization (ISO) systems, Occupational Health and Safety Assessment Series (OHSAS) standards, and Container Safety Convention (CSC) requirements, all with excellent reputations. It entered the Asian market with its Northeast Asia Branch in Shanghai, China in 1993. Now it is the market leader of product conformity assessment and inspection in many industries such as pressure vessel and container classification in China (XYZ Group, n.d.). Among the considerable business of XYZ Certification Company, this research targeted the Transportation and Logistic Service (TLS) Department within the Northeast Asia Branch of XYZ Group. The TLS Department provides inspection and certification services for containers, reefers, ships, factories, and so on for both owners and customers in the transportation and logistic service industry. This research presents an exploratory study designed to investigate the Northeast Asia inspectors of the TLS industry. It is not the intent of this research to conduct a comprehensive study to cover varied kinds of inspectors all over the world; instead, several characteristics of this region, such as cultural differences, age, and gender are examined.

The Transportation and Logistic Service (TLS) Department by nature is a globally oriented organization. Employees must be adequately prepared to maintain a competitive edge

in their career development. Representative inspectors especially need to expand their expertise to proactively adapt their business to meet industry demands. One of the methods to achieve this goal is continuing education. Management believes further training must be customized and focused on the growing needs and deficiencies that exist within employees in each department to keep up with constantly changing business circumstances. This is a systems approach of planning instruction. In this research, a system is defined as comprising inputs, processes, outputs, and feedback (Lee & Nelson, 2006, p.8). Needs assessment is the first step in the instructional design process (Rossett, 1987) because the result of needs assessment quantifies the workers' needs as inputs for the subsequent instructional systems design. The key to developing effective training courses and curricula is valid content and needs assessment that provides a rationale for the training course (Lee & Nelson, 2006, p.2).

By conducting a needs assessment, this study aims to identify and prioritize the needs of inspectors in order to design future continuing education curricula. In the next chapter, a review of the training and development literature will uncover needs assessment methods in detail.

Statement of the Problem

The manager of TLS Department believes that training deficiencies exist from employee performance problems within the department. Through needs assessment, the manager could identify the existence of performance problems and select appropriate training which fits the needs of employees. Synthesizing organizational needs and employee perceptions of needs through needs assessment may lead to better employee satisfaction, less turnover, and superior customer service, which may affect profitability.

Purpose of the Study

The purpose of this study is to understand the needs of inspectors in the Transportation and Logistic Service Department in the Northeast Asia Branch of XYZ Certification Company.

This research identifies whether training deficiencies indeed exist and, if so, defines the inspectors' training needs for future continuing education curriculum.

Assumptions of the Study

First, this study assumes that inspectors need to learn and use different knowledge, skills, and methods to satisfy industry demands. The skills they own are inadequate for meeting all potential problems in their daily work.

In order to determine an appropriate performance solution that will make a difference, the following is also assumed within this study.

(1) The department manager and human resources (HR) manager are available for interviews.

(2) The inspectors are interested in performance improvement and the opportunities to provide opinions to the organization.

(3) Respondents will be truthful when responding to questions on the survey and interviews, and will complete them.

(4) The researcher will be able to objectively analyze the information received and produce meaningful findings.

(5) The results, conclusions and recommendations of this research will have a positive impact in designing future continuing education programs.

Definition of Terms

Certification. A standard requires that a firm set up an internal quality assurance system. This system is subject to audit by a third party prior to certification (Label and Priester, 1996).

Competency or competence. These terms are used interchangeably in this study. Competency is knowledge, skills, attitudes, or behaviors that enable one to perform the activities of a given occupation or function to the standards expected in employment (Gupta, 2007, p.135).

KSA. KSA stands for knowledge, skills, abilities, and other characteristics. Knowledge is what the employee knows (McArdle, 1989, p. 34), a skill is an observable competence to perform a learned psychomotor act, and ability is competence to perform an observable behavior (Wikipedia, 2012).

Soft skills. Soft skills are the cluster of personality traits, social graces, language skills, friendliness, and optimism that mark each of us to varying degrees (Anonymous, 2003; Litecky, Arnett, & Prabhakar, 2004).

Technical skills. In contrast to soft skills, technical skills are specific technical abilities such as math or writing abilities. These are acquired through training and education in order to serve a particular job (Anonymous, 2003 cited in Litecky, Arnett, and Prabhakar, 2004).

Need assessment. The process for identifying and prioritizing performance needs (Kaufman, 1994; Rothwell & Kazanas, 2004; Messner, 2009).

Limitations of the Study

The primary limitation of this study is its small sample size. Only the inspectors of the TLS Department in the Northeast Asia Branch of XYZ Certification Company are examined, due to limited time and resources. In the future, this sample could be expanded to other departments or other branches for general employee needs assessment under the rules and regulations of the Human Resources Department.

Additionally, the determined inspectors' needs may be subject to a range of political influences within the organization (Clarke, 2003). Cultural differences in the Northeast Asia must also be considered.

Methodology

This study collected and analyzed data regarding the training needs within XYZ Certification Company at two levels: (1) management (TLS department manager and HR manager) and (2) inspectors. This study started with an open search of interviews at the first level to collect organization's vision, in order to understand the management level and to create a pilot survey. The pilot survey was then conducted with the department manager and senior inspectors, so as to refine the questions on the needs assessment survey for the other levels of inspectors.

At the second level, a two-page survey was created after collecting possible training objectives from the pilot survey. A cover letter along with this survey was delivered to all 56 inspectors of TLS Department via mail with a self-addressed envelope. The target inspectors are located in various locations in Northeast Asia, such as China, Taiwan, Hong Kong, and South Korea but were anonymous to each other.

The survey was designed to provide answers based on a Likert scale and open-ended style. Participants could return their responses either via mail or facsimile. One week from the estimated time of receipt, a follow-up letter along with the same questionnaire was sent as a reminder if the subjects did not yet reply. Adequate time and confidentiality were given to protect subjects. The data was analyzed using the SPSS statistical software package, and results are displayed in charts, figures, and tables.

Chapter II: Literature Review

The true purposes of the continuing education design is problem solving. The framework for analyzing a training problem, defining the intended outcomes, determining how to present the content to learners so that they may achieve those outcomes, developing the training course according to the designs, implementing the course, and evaluating its effectiveness is called the instructional design process (Carliner, 2003, p.2). The use of the instructional design process by this research is described in the following sections.

Instructional Design Models

A model is simply a plan or an organized way of thinking. Gagne, Briggs, and Wager stressed that instructional systems design is the systematic process of planning instruction. In terms of using instructional design as a systematic solution of performance problems, one notable approach is the ADDIE model. Along with earlier models, such as the Three-Stage Systems model by Bartel and a nine-stage model by Dick and Carey, the ADDIE model often serves as a base for many present-day research studies. Outlined in Figure 1, ADDIE is an acronym referring to five phases: analysis, design, development, implementation, and evaluation. For this study, the ADDIE model contains several advantages. First, it is simple, while still including all the components found in other instructional design models (McGriff, 2005 cited in Lee & Nelson, 2006). Moreover, ADDIE model also utilizes features from both the behavioral and cognitive approaches (Lee & Nelson, 2006, p.216). As a result, it is well-suited for this study.

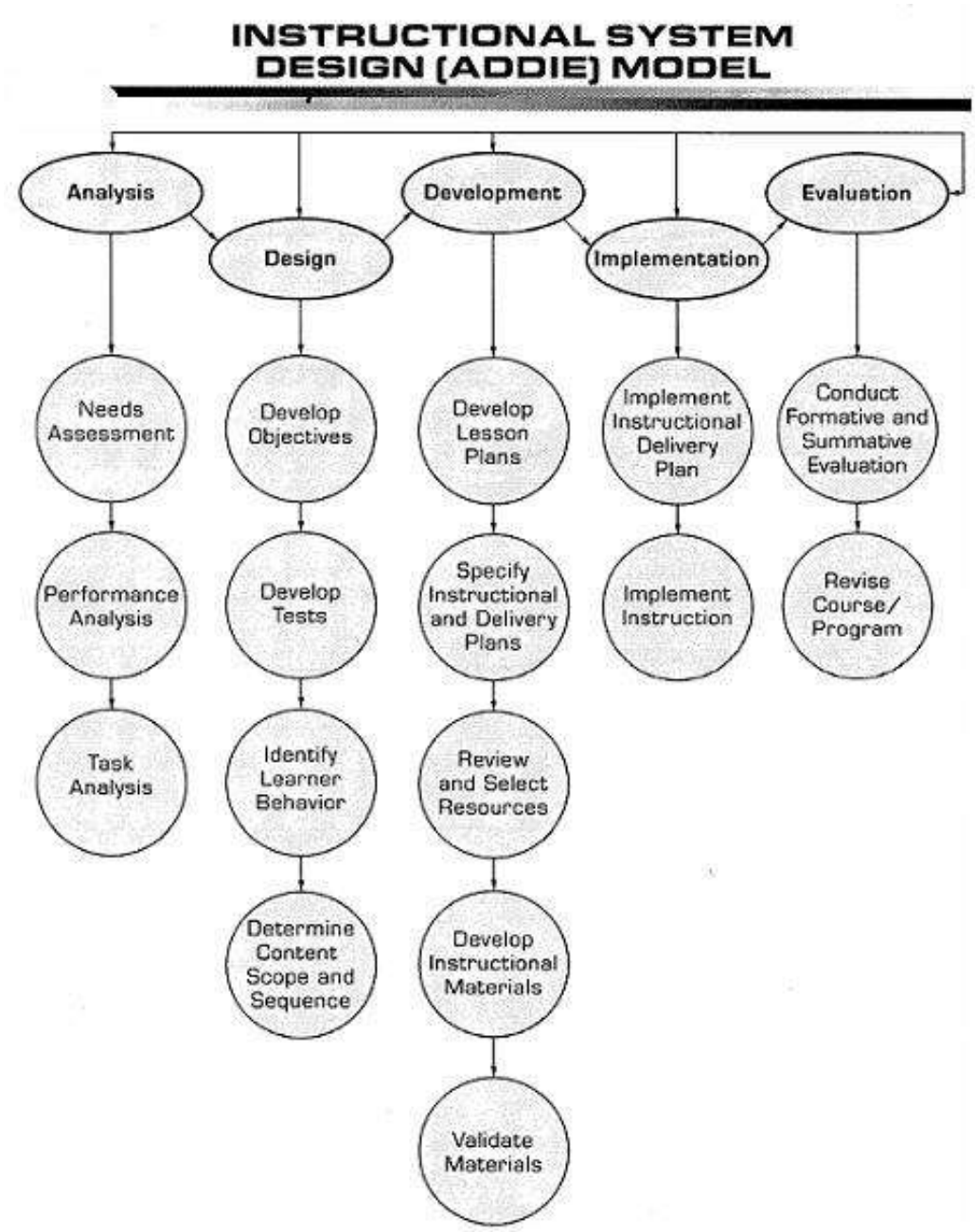

Figure 1. Instructional system design (ADDIE) model. From Lee, H. D., and Nelson, O. W. (2006). *Instructional Analysis and Course Development.*

Needs Assessment

The phases of the ADDIE model are both sequential and iterative. The first phase, Analysis, identifies and defines the problem that the research study addresses. In this phase, Needs Assessment is often regarded as the first component, because it deals with the gap

between "what is" and "what should be." Most experts agree that human learning, training, and performance-improvement initiatives should begin with a needs assessment (Gupta, 2007, p.13), which helps generate data that can assist in determining the root cause of the problem (Lee & Nelson, 2006, p.220). This ensures that solutions match problem properly.

While needs assessment is a critical step for performance improvement solutions (Rossett, 1997; Fulop et al., 1997), Lee & Nelson (2006) addressed that a valid content of training is the key to its effectiveness. The content decision must be based on data from real jobs that actual workers perform or what they will need as technology changes. This is exactly what researchers who help inspectors conquer their work are interested in. Conducting a needs assessment is thus a direct method for achieving this goal.

In addition, Lee and Nelson also suggested that when making choices involving training content one should consider not only the needs in the present work setting, but also emerging trends, technology, and competencies. In most cases, decisions to offer a course or training are made by fulfilling a management request. This research was supported by the management of the case company partly because management wanted to understand if there were particular training needs of TLS inspectors beyond the regular company training courses. Management interviews and their support provided general ideas on emerging trends, technology, and expected competencies, which this research used to enhance the training topics in the needs assessment survey.

Emerging Issues

Carliner (2003) indicated that not all performance problems can be solved through training in practice. Sometimes workers have the needed knowledge and skills to handle a task, but still do not perform the task effectively. Thus, some interactions also need to be considered in designing continuing education in the workplace. Gupta (2007) mentioned practitioners

should carefully consider the focus for a needs assessment before starting any project. Specifically, three kinds of needs that practitioners are likely to see in practice and that warrant a needs assessment are as follows:

1. Strategic or operational business needs.
2. Individual performance needs.
3. Learning needs.

Strategic or operational business needs, such as the values or visions of organizations are always settled by companies. Nevertheless, individual performance and learning needs vary per the psychological or affective characteristics of workers. For example, a lack of motivation can affect performance (Carliner, 2003, p.4). Abraham Maslow assumed that employees in different motivational levels sought different fulfillment and would move to another level after achieving the needs in the previous level in his Hierarchy of Needs theory (Pulasinghage, 2010). In organizational psychology, present studies have examined the impact of personal and organizational values on organizational commitment (Finegan, 2000). Many attitudes and behaviors such as person-organization fit (Erdogan & Bauer, 2005), absenteeism (Gellatly, 1995), turnover intentions (Meyer, Allen, & Smith, 1993), actual turnover (Whitener & Walz, 1993), and job satisfaction (Hackett, Bycio, & Hausdorf (1994) have been investigated in the employee performance field. In keeping with these previous studies, this research also considers the importance of the needs of inspectors in the TLS industry, their competency, and job requirements.

Competency and Job Skills

The modern competitive job market compels workers to have not only strong basic and technical skills, but also good soft skills. In "Career Directions (2003)," the author makes clear definitions of basic skills, technical skills, and soft skills. Basic skills, such as reading, are

learned through school and life experiences and can be used in any work situation. Technical skills are specific to each work setting and are acquired through training and education or are learned from a job. These skills require a certain amount of practice in order to succeed. Soft skills or interpersonal skills are defined as the cluster of personality traits, social graces, language skills, friendliness, and optimism that mark each of us to varying degrees. A Stanford Research Institute and Carnegie Melon Foundation study found that 75 percent of long-term job success depends on soft skills and only 25 percent on technical knowledge (Litecky, Arnett, and Prabhakar, 2004). Increasingly, people are ranked by their ability to deal with others effectively (Anonymous, 2003). In other words, basic and technical skills are no longer the primary skills to determine success in a long-term job.

Soft and technical skills training are not only applicable to the field of human resources, but also in other areas. For instance, Blanthorne, Bhamornsiri, and Guinn (2005) have for decades promoted increasing attention from technical skills to nontechnical, or "soft," skills in the accounting profession. After the 1989 Big Eight white paper "Perspectives on Education: Capabilities for Success in the Accounting Profession," first emphasized the need for general skills, including communication, intellectual, and interpersonal skills, many accounting programs in colleges and organizations responded by incorporating into their curriculum group work, essay exams, and oral presentations.

However, the results of the other survey in which that they attempted to identify skills necessary for promotion and success in the public accounting environment indicated that despite soft skills becoming increasingly important at higher management levels, accountants also must possess a high level of technical competence throughout the promotional process. Both technical and soft skills are weighted equally important in the consideration of partnerships in the accounting field.

In "The 'Soft' Skills of Success," a presentation delivered to the Arizona Career and Technical Education Conference in 2005, James Wellington noted that individuals who were promoted and successful in different management positions had both excellent technical skills and soft skills, especially the ability to work positively with everyone. He suggested that his audiences help their students recognize early on the importance of soft skills, because well-grounded skills will provide them with an edge in their business career and life (Wellington, 2005).

In the Information Technology/ Information Systems (IT/IS) field, Litecky et al. (2004) drew a two-stage model to reconcile the paradox of technical skills or soft skills adoption in the hiring process. They believed technical or soft skills play an important role in different stages during the decision making process of recruitment. The technical skills that candidates possessed for a particular job primarily help them pass the filtration stage, the first stage of the hiring process. Next, the soft skills of candidates are assessed through methods such as interviews, which take place in the second stage-the choice stage-where a candidate's soft skills are matched with those required by the job. The model provides a framework for IS recruiting as well as other analogous technological industries. Moreover, this research implies a need for balancing technical and soft skills in the workplace. HR executives may be misled if they only address one skill during the hiring process. The importance and reconciliation of both technical and soft skills relies on the insight of recruiters, trainers, and employers.

Most researchers agree that technical skills simply approximate professional specialties, which are required based on varied job specifications, but the contents of soft skills are not specific and unified in their studies. Wellington (2005) proposed that soft skills should cover six aspects:

1. Human relations, including (a) personality traits, (b) social graces, (c) language proficiency, (d) personal habits, (e) friendliness, (f) optimism, and (g) attitude.
2. Communication skills: writing, speaking, and listening.
3. Organization culture: a series of habits, values, and beliefs that guide employees as to what patterns of behavior will or will not be accepted within the organization.
4. Organization politics: both positive and negative politics within organizations.
5. Career management: employees are responsible for managing their careers. The organization cannot assure lifetime employment. Employees need to learn how to adapt to changes, prepare themselves and stay positive.
6. A life philosophy: attitude is the key to survive in a hard or unfair situation.

Given these areas, this study develops a customized needs assessment survey for the inspectors of XYZ Certification Company with an appropriate integration of technical and soft-skill competences. For this reason, the eight soft-skill subjects were chosen from the perspectives of scholars above to fit the current situation in XYZ Certification Company. The eight subjects are (1) communication skills, (2) language proficiency, (3) organization culture and politics, (4) leadership, (5) career management, (6) teamwork, (7) human relations, and (8) problem-solving. In addition, technical skills were determined from the major KSA (Knowledge, Skills, and Abilities) of inspectors listed on the O*NET (Occupational Information Network). These include (1) job related knowledge, (2) computer skill, and (3) languages. After conducting the pilot survey with the department manager and senior inspectors, the soft-skill competences were refined as (1) communication skill, (2) pressure and emotion adjustment, and (3) organization policy and procedure while the technical skill were reduced to (1) advanced certification knowledge, (2) computer skills, and (3) foreign languages, given cultural differences between the target inspector and the organization.

Chapter III: Methodology

This chapter will describe the conducting of inspector needs assessment while giving a description of the steps in such a needs assessment. The objectives were to determine whether there is a need for developing a training program, what topics are needed in the program, how long the program is desired to be delivered, and how the program is preferred to be presented. This study primarily involved a survey, consisting of one questionnaire concerning training needs, training issues, delivery methods, and background information of TLS inspectors. The questionnaire topics were refined from a pilot survey which was created after interviewing with management level and analyzing previous training documents. The data was collected and analyzed as a report with conclusions and recommendations. Discussed in this chapter is a detailed outline of subject selection, instrumentation, data collection procedure, data analysis, and limitations.

Subject Selection and Description

This study collected and analyzed data regarding the training needs within XYZ Certification Company at two levels: management and inspection. At the first level, one TLS department manager and one HR manager were involved with an open search of interviews to collect the organization's information in order to create a pilot survey.

Based on the interviews with the management level, the participants for this research were selected from the population list of inspectors of the TLS Department in the Northeast Asia Branch of XYZ Certification Company. The population is comparatively small with a total of 56 subjects. Considering the data analysis, an intact target of 56 inspectors was surveyed without sampling. It should be noted that the participation for this survey was entirely anonymous and voluntary. The survey was sent from the researcher not XYZ Certification Company. The receivers could choose not to participate without fear of punishment. Volunteer confidentiality

was protected while the research procedure and survey were reviewed by the Intuitional Review Board for the Protection of Human Subjects (IRB) as required by the Code of Federal Regulations Title 45 Part 46. The needs assessment survey of the TLS inspectors was conducted in July of 2011. Most participants worked in China (87.5%) and the remaining participants were distributed across South Korea (5.36%), Taiwan (5.36%), and Hong Kong (1.79%).

Instrumentation

The method chosen to carry out this needs assessment included (1) phone interview with the TLS department manager and the HR manager and (2) a questionnaire mailed to each inspector of the TLS Department in the Northeast Asia Branch of XYZ Certification Company. At the management level, the interview method was selected because the researcher could interact with the managers in the organization directly in order to better understand the targeted workers, the organization, and the industry. A pilot survey was created based on the result of interviews and then conducted with the TLS department manager and senior inspectors, so as to refine the questions on the needs assessment survey for the other levels of inspectors. A two-page survey was developed after collecting possible training objectives for the pilot survey with Likert scale and open-ended style questions. Questions on the survey were basic and direct covering what (the possible topics), when (the delivery time), and how (the delivery methods) in polling the inspectors regarding their opinions and attitudes toward of future training programs.

Data Collection Procedures

Although the survey was sent to the entire population, the research procedure was conducted confidentially and the participants were expected to respond anonymously. A cover letter along with the needs assessment survey was mailed to all inspectors located in the Northeast Asia area directly from the researcher instead of the XYZ Certification Company (see Appendix A). Participants could return their responses either via mail or facsimile. One week

from the estimated time of receipt, a follow-up letter along with the same survey was sent as a reminder if the subjects did not yet reply. Adequate time and confidentiality were given to protect subjects. The researcher was the only person who could access the received data.

Data analysis

The Statistical Program for Social Sciences (SPSS) version 19.0 was used to analyze the data quantitatively. Descriptive statistics including mean, standard deviation, and percentage of the data were calculated. One-way analysis of variance (ANOVA), *t* test, and chi-square tests were conducted in analyzing needs and demographics. The results are displayed in the charts, figures, and tables in the next charter.

Limitations

Since this study involved only inspectors in the Northeast Asia Branch of XYZ Certification Company, the results may be limited to populations with similar nature and cannot be generalized to other groups with different backgrounds. However, it could serve as an exploratory research for the inspectors within this region and this industry. Despite the emphatic interpretation of confidentiality, there was little the researcher could do to assure the response rate which in turn could limit the findings in such a short research time.

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Chapter IV: Results

The purpose of this study was to define the needs of inspectors for future continuing education curriculum in the TLS Department in the Northeast Asia Branch of XYZ Certification Company. Specific research questions to be addressed are as follows:

1. Is there a training need?
2. What are the current needed training topics? What is the most urgent demand among these topics?
3. What kinds of learning methods do the inspectors prefer?
4. What is the desired length of the program?
5. To what extent do inspectors' background variables (e.g. location, seniority, age, and gender) relate to their needs for training?

Fifty-six surveys were sent to inspectors located in China, South Korea, Taiwan, and Hong Kong in July of 2011. Fifty-four surveys were returned. The response rate of 96.43% was respectable.

Item Analysis

Demographics.

Demographic information about location (country), seniority, age, department, and gender was asked in questions six to ten. The respondents were 54 inspectors all from the TLS Department including 49 (90.7%) inspectors located in China, two (3.7%) inspectors located in South Korea, two (3.7%) inspectors located in Taiwan, and one (1.9%) inspector located in Hong Kong. There were 44 (81.5%) male inspectors and 10 (18.5%) female inspectors. The majority of the respondents had been in their position in XYZ Certification Company either less than three years (37.0%) or 4 to 6 years (31.5%). Other respondents had been in XYZ Certification Company for 10 to 12 years (16.7%), 7 to 9 years (7.4%), and 13 to 15 years (7.4%). In order to

simplify the groups, this data was regrouped into “low seniority” as less than three years (37.0%), “medium seniority” for four to six years (31.5%), and “high seniority” for seven years and above (31.5%) as described in Table 1 in the following analysis. Besides, 44.4% of the respondents were 36 to 45 years old, 35.2% of the respondents were 26 to 35 years old, 13.0% of the respondents were 18 to 25 years old, and the remaining respondents were above 46 years old (7.4%). This data was also regrouped into “young” as less than 25 years old (13.0%), “middle” as 26 to 35 years old (35.2%), and “elder” for 36 years old and above (51.9%) as described in Table 2 in the following analysis.

Table 1

Years Employed of Inspectors

Response	Frequency (N=54)	Percentage
Low seniority (less than 3 years)	20	37.0%
Medium seniority (4 to 6 years)	17	31.5%
High seniority (7 years and above)	17	31.5%

Table 2

Ages of Inspectors

Response	Frequency (N=54)	Percentage
Young (less than 25 years old)	7	13.0%
Middle (26 to 35 years old)	19	35.2%
Elder (36 years old and above)	28	51.9%

Training needs.

The result in Table 3 presents that 57.7% of the respondents rated Most Necessary and 42.3% of the respondents rated Necessary when the researcher asked whether an advanced training program is needed. None of the participants chose Most Unnecessary and Unnecessary. Two participants did not provide their opinion on this question. The result of one-sample *t* test also showed a statistical significance that inspectors had a positive expectation and sensed the needs of further training program (M = 3.58, SD = .499), $t(51) = 51.704$, $p < .01$).

Table 3

Training Needs

Response	Frequency (N=52)	Percentage
Most necessary	30	57.7%
Necessary	22	42.3%
Unnecessary	0	0.0%
Most unnecessary	0	0.0%

What to cover in the program.

According to the literature review in chapter two, the eight soft and three technical skills were chosen initially. After conducting the pilot survey with the department manager and senior inspectors, six competencies including (1) communication skill, (2) pressure and emotion adjustment, (3) organization policy and procedure, (4) advanced certification knowledge, (5) computer skills, and (6) foreign languages were refined to customize the characteristics of the targeted inspectors. The first three topics stand for soft-skill competences and the remaining stand for the technical competences, but the order was broken up in the survey to avoid bias. Participants have been asked to value the rate of necessary in each topic; furthermore, they have been asked to choose only one topic as an urgent demand in the next question. The respondents

rated each topic with Most Necessary (MN), Necessary (NE), Unnecessary (UN), or Most Unnecessary (MUN). See Table 4. The top three needed topics among the six competences were advanced certification knowledge, foreign languages, and communication skill with a mean of 3.54, 3.17, and 3.11. In soft competences, communication skill was the most important training topic followed by pressure and emotion adjustment. Advanced certification knowledge was the most important training topic in technical competences and then foreign languages. It seems the need of technical competences was rated higher than soft competences according to the inspectors' consideration. A similar result was also presented when the inspectors were forced to choose only one subject from the six competences as the most urgent needed training program in Figure 2. Advanced certification knowledge was selected by 61.11% of inspectors and the remaining responses were relatively distributed across foreign languages (11.11%), pressure and emotion adjustment (11.11%), communication skill (9.26%), organization policy and procedure (5.56%), and computer skills (1.85%).

Table 4

Importance of Training Topics

Response	MN	NE	UN	MUN	Mean	SD
Soft competences						
Communication skill	24.1%	64.8%	9.3%	1.9%	3.11	.634
Pressure and emotion adjustment	20.8%	60.4%	17.0%	1.9%	3.00	.679
Organization policy and procedure	13.2%	73.6%	11.3%	1.9%	2.98	.571
Technical competences						
Advanced certification knowledge	55.6%	42.6%	0.0%	1.9%	3.54	.539
Foreign languages	29.6%	59.3%	9.3%	1.9%	3.17	.666
Computer skills	3.7%	72.2%	22.2%	1.9%	2.78	.538

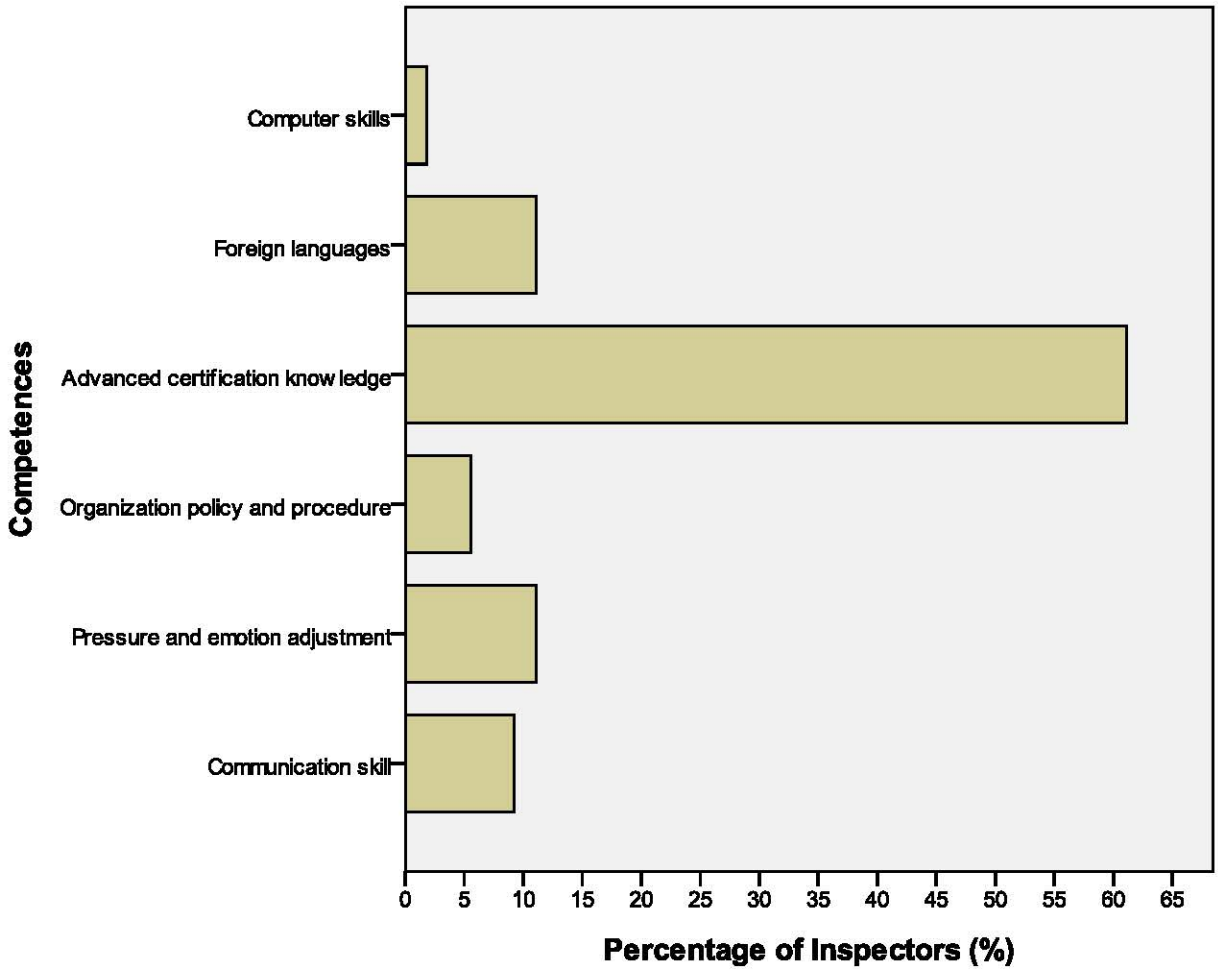

Figure 2. Percentage rates of competences in the most urgent training topic (n = 54).

How to deliver the program.

The respondents rated each learning method with Most Likely (ML), Likely (L), Unlikely (UL), or Most Unlikely (MUL). See Table 5. Among the four learning methods, workshop was the favorite learning method with the highest mean (M = 3.40), whereas other three methods, media instruments, written material, and e-learning, received lower means in decreasing order.

Table 5

Learning Methods of Training Program

Response	ML	L	UL	MUL	Mean	SD
Workshop	46.2%	48.1%	5.8%	0.0%	3.40	.603
Media: Video, tape, or CD	38.5%	46.2%	13.5%	1.9%	3.21	.750
Manual/ written material	13.2%	75.5%	9.4%	1.9%	3.00	.555
E-learning/ computer-based	11.8%	72.5%	13.7%	2.0%	2.94	.580

Time for delivering the program.

The participants responded how much time of training program they prefer to spend on the training program every week with Most Likely (ML), Likely (L), Unlikely (UL), or Most Unlikely (MUL). The data in Table 6 presented a period of two hours or more than 3 hours a week was the major selected length of training program with a mean of 2.96 and 2.89.

Table 6

Delivery Time of Training Program

Response	ML	L	UL	MUL	Mean	SD
Less than 30 minutes	6.8%	20.5%	43.2%	29.5%	2.05	.888
Less than 1 hour	12.8%	38.3%	27.7%	21.3%	2.43	.972
Less than 2 hours	22.2%	55.6%	17.8%	4.4%	2.96	.767
More than 3 hours	34.0%	34.0%	19.1%	12.8%	2.89	1.026

In order to answer questions concerning whether the demographic variables of inspectors' background influence their needs about training, multivariate analysis was done in the following sections.

Analysis of urgent training needs by demographic variables.

To address this issue, analysis of variance (ANOVA) was conducted between the most urgent need and the demographic variables including location, seniority, age, and gender. Only the result in seniority groups revealed that there were group differences ($\chi^2(10, N = 54) = 18.607, p = <.046$) in Table 7. The major difference was from low seniority (less than 3 years) who rated each training topics higher than medium seniority (4 to 6 years) and high seniority (7 years and above). This seems to contradict that the new employees enjoyed to learn and needed advanced job skills in the workplace. However, in the absence of statistically significant results, no definite conclusion can be drawn on the differences in gender (male or female inspectors), location (China, Taiwan, South Korea, or Hong Kong), and age (young, middle, or elder).

Table 7

ANOVA Results of Different Training Needs in Location, Seniority, Age, and Gender

Response	χ^2 value	*df*	Asymptotic significance value
Location	21.231	15	.130
Seniority	18.607	10	.046*
Age	16.548	10	.085
Gender	7.991	5	.157

Analysis of delivery methods by demographic variables.

In seniority, the preference of workshop in medium seniority (M = 3.71) was statistically significantly higher than in high seniority (M = 3.13) in Table 8. In age, the preference of workshop in medium-age inspectors (M = 3.68) was statistically significantly higher than in young inspectors (M = 3.00) as described in Table 9. The results of the posttest showed that regardless of middle age or medium seniority, the main force of organizations strongly prefer training workshops.

Results indicated that gender and location have no significant group difference in delivery methods. Actually, the imbalanced population in location, especially the few inspectors of TLS located outside of China, affected the representation in analyzing. In this research, it is ineluctable that these are the characteristics of the population. Stretching locations could be considered in further researches.

Table 8

Opinions of Different Seniority about Conducting Workshops

Response group I	Response group II	Difference of mean (I-II)	SD	Asymptotic significance value
Low seniority	Medium seniority	-.337	.189	.213
(M = 3.37)	High seniority	.243	.192	.454
Medium seniority	Low seniority	.337	.189	.213
(M= 3.71)	High seniority	.581*	.197	.018
High seniority	Low seniority	-.243	.192	.454
(M=3.13)	Medium seniority	-.581*	.197	.018

Table 9

Opinions of Different Age about Conducting Workshops

Response group I	Response group II	Difference of mean (I-II)	SD	Asymptotic significance value
Young inspectors	Medium inspectors	-.684*	.265	.044
(M = 3.00)	Elder inspectors	-.296	.256	.516
Medium inspectors	Young inspectors	.684*	.265	.044
(M=3.68)	Elder inspectors	.388	.170	.084

Elder inspectors	Young inspectors	.296	.256	.516
(M=3.30)	Medium inspectors	-.388	.170	.084

Analysis of delivery time by demographic variables.

Female employees preferred one-hour and two-hour courses significantly higher than male employees. However, male employees preferred three-hour courses higher than female employees as shown in Table 10. In the category of age, younger inspectors preferred one-hour courses more than elder inspectors did in Table 11. There was no statistically significant group difference in seniority groups. Inspectors employed outside of China were not enough for the post hoc analysis.

Results indicated that different genders or ages have different preferences in the length of training programs. However, the lengths of training programs were related to the content and the delivery methods. But the statistic results provided useful information for designing programs in the future.

Table 10

Opinions of Different Gender about Delivery Time per Week

Response group I	Response group II	Mean	SD	t-value	df	Asymp. Sig. value
Less than 30 minutes	Male	1.97	.885	-1.363	42	.180
	Female	2.50	.837			
Less than one hour	Male	2.25	.927	-3.252	45	.002*
	Female	3.43	.535			
Less than two hours	Male	2.84	.718	-2.437	43	.019*
	Female	3.57	.787			

More than three	Male	3.05	.962	3.283	45	.002*
hours	Female	1.60	.548	.197		.018

Table 11

Opinions of Different Age about One Hour Training Course per Week

Response group I	Response group II	Difference of mean (I-II)	SD	Asymptotic significance value
Young inspectors	Medium inspectors	.958	.443	.108
(M = 3.33)	Elder inspectors	1.093*	.420	.043
Medium inspectors	Young inspectors	-.958	.443	.108
(M=2.38)	Elder inspectors	.135	.296	.902
Elder inspectors	Young inspectors	-1.093*	.420	.043
(M=2.24)	Medium inspectors	-.135	.296	.902

Qualitative Data.

When asked to comment on the topics in this needs assessment survey, the responses were generally positive. Some training topics were provided by the participants in the open-style questions such as personal career development, finical knowledge, and so on. Additionally, some inspectors mentioned field training, tutorial, and face-to-face training as extra options of learning methods. Irregular workshops were also suggested when questioned about how much time inspectors prefer to spend per week. Although the qualitative data received from the open-style questions were relatively few, the researcher listed them here for further reference.

Summary

The following findings are worth summarizing:

1. Significant training needs of inspectors were found in this study.
2. The top three needed training competences were advanced certification knowledge, foreign languages, and communication skill. Advanced certification knowledge is the priority demand of technical skill and communication skill is the leading demand of soft skill.
3. The TLS inspectors preferred workshops.
4. The TLS inspectors preferred a course no longer than two hours per week.
5. Inspectors were different seniority have different training needs.
6. The TLS inspectors have different preferences of delivery methods especially in different seniority and age, but workshop is their favorite methods above all.
7. Female inspectors prefer shorter courses while male inspectors prefer longer, but delivery length should not be considered solitary in designing training.

Chapter V: Discussion

The focus of this study was conducting a needs assessment of the inspectors of the Transportation and Logistic Service (TLS) Department in the Northeast Asia Branch of XYZ Certification Company. The study followed the principles of instructional systems design and tried to covered the interests of the researcher in emerging trends, technology, and competencies within the industry. Objectives were formulated and a survey instrument was designed after interviewing with management level and analyzing previous training documents. A two-page survey was created and sent to the entire population of qualified inspectors. Fifty-four of 56 surveys were returned with a reliable response rate of 96.43%. The analyzed results of this study reflected on whether there is a need for developing a training program, what topics should be covered in the program, how long the program is desired to be delivered, and how the program is preferred to be presented. Demographic characteristics of inspectors such as location, age, seniority, and gender were discussed as well.

Limitations

The primary limitation of this study was its small sample size. Only the inspectors of the TLS Department in the Northeast Asia Branch of XYZ Certification Company were examined. This methodological problem in the research design limited the result interpretations. Take location as example, even though the participants were from four different countries within Northeast Asia, most of the location analyses were not statistically significant in this research due to the small amount of participants in some of these countries. Time and resources were also limited in protecting organization confidentiality to secure the support of management level. In the future, this sample could be expanded to other departments or other branches for general employee needs assessment under the rules and regulations of the Human Resources Department.

Political influences within the organization and cultural differences in the Northeast Asia region could arise, exposing flaws in this research. Despite the emphatic interpretation of confidentiality, the participants could feel uncomfortable in sharing true opinions with others even though the response rate was high.

Conclusions

Needs assessment is the process of identifying how training can help the organization reach its business and performance goals (Tobey, 2005, p.155). In this paper, the researcher presented the result of needs assessment of the TLS inspectors in the Northeast Asia Branch of XYZ Certification Company. Several research interests were addressed in this study, and the principal findings suggested that (1) most participants agreed there is a need for customized training programs; (2) inspectors rated the top three needed training programs are advanced certification knowledge, foreign languages, and communication skill; (3) the majority of inspectors agreed advanced certification knowledge is the priority training program if there is only one option; (4) the majority of inspectors preferred workshops in delivery training program; and (5) the majority of inspectors preferred to take training programs no longer than two hours per week. The researcher also speculated that (6) inspectors with different seniority have different training needs; (7) inspectors of different age and seniority have different preferences in delivery methods, but workshop is their favorite method above all; and (8) female inspectors prefer shorter courses while male inspectors most likely prefer longer. However, the purpose of training is to help make workers measurably more effective in their work (Carliner, 2003, p.3). The four essentials, who (target), what (subject), how (delivery method), and when (delivery time), should not never be considered separately in further training designing.

Recommendations

Although training is still a major focus in needs assessment literatures, there is a move toward analysis of performance and all the possible variables for improvement. Most needs assessment and analysis methods do not analyze organizational culture or environment factors that may lead to solutions other than training (Messner, 2009). There are several emerging orientations such as organizational political influences, cultural differences, or employee motivations that could be undertaken for further exploration.

From this study, management level may gain insights into the thoughts of current employees and also the inspector level may feel an awareness from the management level. It may make a difference from the inspectors' view that only the department manager or HR Department can decide which training programs will be conducted in the XYZ Certification Company. It is in the interest of empowerment instead of the feeling of commanding and controlling. Marshall Goldsmith (2010) indicated leaders must manage their human assets with the same vigor that they devote to financial assets nowadays. Developing people can add value to both the employees and the bottom line of the organization. Providing employees with an extensive opportunity to become aware of trends in the business world will empower them with KSA (Fulford and Enz, 1995). Although, this research is presented as an exploratory study for the inspectors of the TLS industry in the Northeast Asia, it might be beneficial to both TLS inspectors and the XYZ Certification Company.

References

Anonymous. (2003). Career directions. *Tech Directions, 62*(10), 22-23.

Blanthorne, C., Bhamornsiri, S., & Guinn, R. E. (2005). Are technical skills still important? *The CPA Journal, 75*(3), 64-65.

Carliner, S. (2003). *Training design basics.* Alexandria, VA: American Society for Training and Development.

Clarke, N. (2003). The politics of training needs analysis. *Journal of Workplace Learning, 15*(4), 141-153. Retrieved April 11, 2012, from http://search.proquest.com/docview/198423524?accountid=9255.

Erdogan, B., & Bauer, T. N. (2005). Enhancing career benefits of employee proactive personality: The role of fit with jobs and organizations. *Personal Psychology, 58,* 859-891.

Finegan, J. E. (2000). The impact of person and organizational values on organizational commitment. *Journal of Occupational and Organizational Psychology, 73,* 149-169.

Fulford, M. D., & Enz, C. A. (1995). The impact of empowerment on service employees. *Journal of Managerial Issues, 7*(2), 161-175.

Fulop, M. P., Loop-Bartick, K., & Rossett, A. (1997). Using the world wide web to conduct a needs assessment. *Performance Improvement, 36*(6), 22-27. Retrieved April 30, 2012, from http://www3.interscience.wiley.com/journal/117888262/abstract/ doi: 10.1002/pfi.4140360606

Gagne, R. M., Briggs, L. J., & Wager. W. W. (1992). *Principles of instructional design* (4th ed.). Forth Worth, TX: Harcourt Brace College Publishers.

Gellatly, I. R. (1995). Individual and group determinants of employee absenteeism: Test of a causal model. *Journal of Organizational Behavior, 16*(5), 469-485.

Goldsmith, M. (2010). How to keep good employees in a bad economy? [Electronic version]. *Harvard Business Review*. Retrieved May 1, 2012, from http://blogs.hbr.org/goldsmith/2010/02/how_to_keep_good_employees_in.html.

Gupta, K. (updated and expanded by Sleezer, C. M. & Russ-Eft, D. F.). (2007). *A practical guide to needs assessment* (2nd ed.). San Francisco, CA: Pfeiffer.

Kaufman, R. A. (1994). A needs assessment audit. *Performance and Instruction, 33*(2), 14-16. Retrieved November 17, 2008, from http://www3.interscience.wiley.com/journal/114120569/abstract doi: 10.1002/pfi.4160330205

Label and Priester (1996). Expanding your role in ISO 9000. *CPA Journal, 66*(6), 40-45. Retrieved April 30, 2012, from EBSCO Host database http://ezproxy.lib.uwstout.edu.

Lee, H. D., & Nelson, O. W. (2006). *Instructional analysis and course development.* Homewood, IL: American Technical Publishers, INC.

Levinson, M. (2006). *The box: How the shipping container made the world smaller and the world economy bigger.* Princeton, NJ: Princeton University Press.

Litecky, C. R., Arnett, K. P., & Prabhakar, B. (2004). The paradox of soft skills versus technical skills in IS hiring. *The Journal of Computer Information Systems, 45*(1), 69-76.

McArdle, G. (1989). What is training? *Performance and Instruction, 28*(6), 34-35.

McGriff, S. J. (2005). *ISD Knowledge Base/ Instructional Design & Development/ Instructional Systems Design Models.* Retrieved May 20, 2011, from http://www.personal.psu.edu/faculty/s/j/sjm256/portfolio/kbase/IDD/ISDModels.html#addie.

Messner, A. (2009). *Needs assessment and analysis methods.* (Unpublished master's thesis). University of Wisconsin-Stout.

Meyer, J. P., Allen, N. J., & Smith, C. A. (1993). Commitment to organizations and occupations: Extension and test of a three-component conceptualization. *Journal of Applied Psychology, 78*(4), 538-551.

Pulasinghage, C. (2010). Employee motivation: What factors motivate employees to work in nongovernmental organizations (NGO) in Sri Lanka: A study according to Maslow's hierarchy of needs model. *The International Journal of Interdisciplinary Social Sciences, 5*(4), 197-211.

Rossett, A. (1997). Have we overcome obstacles to needs assessment? *Performance Improvement, 36*(3), 30-35. Retrieved November 17, 2008, from hrrp://www3.interscience.wiley.com/journal/117888249/abstract

Rothwell, W. J., & Kazanas, H. C. (2004). *Mastering the instructional design process: A systematic approach* (3rd ed.). San Francisco, CA: Jossey-Bass Publishers.

Tobey, D. (2005). *Needs assessment basics.* Alexandria, VA: American Society for Training and Development.

U.S. Department of Labor, Employment and Training Administration (2010). *Summary report for licensing examiners and inspectors of the Occupational Information Network (O*NET Online)*. Retrieved May 5, 2012, from http://www.onetonline.org/link/summary/13-1041.02.

Wellington, J. K. (2005). The "soft skills" of success. *Vital Speeches of the Day, 71*(20), 628-634.

Whitener, E. M., & Walz, P. M. (1993). Exchange theory determinants of affective and continuance commitment and turnover. *Journal of Vocational Behavior, 42*(3), 265-281.

Wikipedia (2012). Definition for knowledge, skills, and abilities. Retrieved April 30, 2012 from http:// en.wikipedia.org/wiki/Knowledge,_Skills,_and_Abilities.

XYZ Group (n.d.). About us. Retrieved April 30, 2012, from http://www.bureauveritas.com/wps/wcm/connect/bv_com/group/home/about-us/profile-logo.

Appendix A: Cover Letter.

Dear Respondent,

In an effort to help the inspectors at this XYZ Certification Company have a better, more comfortable, and higher productive work environment, we invite you to participate in a brief ten-question survey. The purpose of this survey is to collect information regarding the importance of needs and trends within inspectors' workplaces in the changing business. Your responses to this survey will help us to determine training objectives for future training programs.

This survey has been reviewed and approved by the Institutional Review Board (IRB) at University of Wisconsin-Stout. IRB has confirmed that this survey meets the requirement for protection of human subjects in research which is required by Federal Law. In this condition, the information you provided is confidential and anonymous; data will be analyzed only in this research.

Your response to the survey should take less than 15 minutes. Please be aware the participation in this survey is voluntary. And if you decide to participate, please fill out the survey within one week after receiving and return to the researcher simply by facsimileing or mailing it back directly. Please contact me at the email address or phone number below if you have any questions about the survey. I would be happy to answer any questions you might have.

Your participation and cooperation will be greatly appreciated.
Thank you.

Sincerely,

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Appendix B: Inspector Needs Assessment Survey

Needs Assessment for Training Program

Introduction: The purpose of the following survey is intended to collect opinions regarding the needs of future training program. Your careful completion will help Bureau Veritas Certification to understand the employees' needs and then to develop effective programs assistant to both personnel and organization.

The survey consists of 10 questions. Please place an X in the box that corresponds to your answer. You may add any items you believe have been omitted on the bottom of each question.

	Please rate each item according to its importance. Place an "X" in the column that best describes the current condition. →	1 Most unnecessary	2 Unnecessary	3 Necessary	4 Most necessary
Q1. Is there a need for an advanced training program?					
Q2. What topics should be covered in the program that may be helpful for your work?					
1. Computer skills					
2. Foreign languages					
3. Communication skill					
4. Pressure and emotion adjustment					
5. Advanced certification knowledge					
6. Organization policy and procedure					
7. Others (please list and rate if applicable):					

Q3. What is the most urgent topic you would like to learn now? (Please only mark one)

- ☐ 1. Computer skills
- ☐ 2. Foreign languages
- ☐ 3. Communication skill
- ☐ 4. Pressure and emotion adjustment
- ☐ 5. Advanced certification knowledge
- ☐ 6. Organization policy and procedure
- ☐ 7. Others (please list and rate if applicable). _____

	Please rate each item according to your preference. Place an "X" in the column that best describes the current condition. →	1 Most unlikely	2 Unlikely	3 Likely	4 Most likely
Q4. What kind of learning methods would you apply in this training program?					
1. E-learning/ computer-based					
2. Manual/written material					
3. Media: Video, tape, or CD					
4. Workshop					
5. Others (please list and rate if applicable):					
Q5. How much time would you like to spend on this training program every week?					
1. < 30 minutes					
2. < 1 hour					
3. < 2 hours					
4. more than 3 hours					
5. Others (please list and rate if applicable):					

(continued)

Demographic Information:

Please mark an X in the box that corresponds to your answer.

Q6. Which branch of Bureau Veritas Certification do you work in?

☐ China ☐ Hong Kong ☐ Japan ☐ Korea ☐ Taiwan ☐ Others

Q7. How many years have you been an inspector in Bureau Veritas Certification?

☐ ≤ 3 ☐ 4-6 ☐ 7-9 ☐ 10-12 ☐ 13-15 ☐ ≥ 16

Q8. What age group do you belong to?

☐ 18-25 ☐ 26-35 ☐ 36-45 ☐ ≥ 46

Q9. Please write down the department that you belong to?

_____

Q10. Gender

☐ Male ☐ Female

Thank you for completing this survey.
Please simply print out or fax back to the deliverer.
All responses will be kept confidential and anonymity is assured.
Your input is essential for the ongoing development of our programs.