Factors Impacting the Selection of Training-Delivery Systems
and Training Methodology of Virginia Training Professionals

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ABSTRACT

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The purpose of this exploratory study was to determine which of the three training-delivery systems is the most frequently selected by training professionals in Virginia and which training methods are selected to support the chosen delivery systems. The study also examined the extent to which internal and external factors contributed to the selection of the delivery systems and the training methods. Qualitative research methodology was employed in analyzing the results of 12 in-depth interviews with purposively selected training professionals in Virginia in order to answer the research questions. This study found that (a) the training professionals chose instructor-led classroom for 46% of their programs, the blended method for 32%, and online for 22%; (b) they used a wide variety of training methods to support the program objectives and meet the audience's needs; and (c) external factors more frequently impacted selection decisions than did internal factors, but one internal factor that impacted selection decisions was the training professionals' understanding of instructional systems design. The external factors that had the greatest impact on the training system chosen were workplace constraints such as immediacy and scalability and the size and geographical dispersion of the audience. That is, for large and/or dispersed audiences coupled with time constraints, the online delivery system was chosen most often. Likewise, mandatory programs were most likely to be offered online. The following conclusions were drawn: (a) a shift is taking place from instructor-led-classroom delivery to blended delivery, (b) instructor-led classroom incorporates methodologies that extend beyond the lecture

format, (c) companies are using emerging technologies in training and development, and

(d) training and development continues to add value to the workforce, which is a

powerful competitive advantage.

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Chapter 1: Introduction

Since 1982, Lakewood Research and most recently Neilson Business Media have conducted research for an annual status report on the training industry, which is published in *Training.* Respected throughout the profession of training and development, this annual report offers "some of the most comprehensive data available on formal employee training in the United States" (Industry Report, 2007, p. 10). Human resources and business management professionals in all industries have come to rely on the report's data on employer-sponsored formal education, using them as a benchmark to assess their organizations' positions within a general overview of the training industry.

A review of *Training'*s annual reports since 1985 indicates that very little change has occurred with regard to the top two methods used to deliver training. Videotapes and instructor-led training were the most commonly used approaches until 1996, when live classroom training moved into first place, ahead of videotapes. Use of online education through the Internet moved into third place in 2001, replacing self-instruction manuals and notebooks, but remained behind live classroom instruction in usage by 60% (Galvin, Industry Report, 2001, p. 56). Interestingly, despite advancements in technology, since 2001, less than 10% of live instruction on average has been delivered to remote classrooms. Four years after online education broke into the ranks of the top three methods, the 2005 survey results showed that 85% of the respondents *often* chose to train using live instructors in the classroom, and 18% *always* used instructor-led-classroom training. The results reported in the 2008 Industry Report are that online delivery had decreased in 2008 by 3% over the previous year. The instructor-led classroom remained steady, with 67% of all training delivered using this format. Thus, instructor-led-

classroom training remained the predominant delivery system used by U.S. business and organization trainers.

The status reports published in *Training* between 1985 and 2001 indicated the actual training methods used in an instructor-led-classroom setting. The status reports published in *Training* between 1985 and 2001 indicated the actual training methods used in an instructor-led-classroom setting (Feuer, Industry Report, 1985; Filipczak, Industry Report, 1992, 1994; Froiland, Industry Report, 1993; Feuer & Lee, Industry Report, 1988; Galvin, Industry Report, 2001, 2002, 2003; Geber, Industry Report, 1989; Gordon, Industry Report, 1990; Gordon & Feuer, Industry Report, 1986; Industry Report, 1986, 1987, 1994, 1995, 1996a, 1996b, 1997, 1998a, 1998b, 1999, 2000a, 2000b, 2000c; Lee, Industry Report, 1987, 1991: Oberle, Industry Report, 1989). In 2002, *Training* began collecting data regarding methods differently. The publication stopped focusing on categories that specifically described or labeled the training methods, for example, lectures, videotapes, simulations, games, and case studies, to focus instead on the following delivery system terms: classroom-led, virtual classroom with instructor, intranet, and Internet (Galvin, Industry Report, 2002a, 2002b, 2002c). This change in reporting means that the reader is not able to ascertain which training methods are actually being used to support training efforts.

The field of training's primary professional organization, the American Society for Training and Development (ASTD), was formed in 1942 as the result of a training committee meeting of the American Petroleum Institute. Along with its monthly publication, *T&D,* ASTD has produced the State of the Industry Report annually since 1999 to share information with professionals regarding how employers are meeting the

challenge of training employees. An area that the report has emphasized is the use of training-delivery methodology. From 1999 to 2006, the training methods were categorized as instructor-led-classroom training, learning technologies (divided in terms of multimedia, computer-based, teleconferencing, CD-ROM, email, local area networks (LAN), Internet, and intranet), other self-paced training, and other (ASTD, 1999). In 2007, the State of the Industry Report began using the following categories: instructor-led real time, instructor-led online, instructor-led remote, self-paced online, self-paced non-networked, self-paced print, non-computer technology (audio/video), and other (ASTD, 2007). The ASTD reports showed a decline in instructor-led delivery until 2003, when there was a rebound (1999, 2000, 2001, 2002, 2003, 2005, 2006). Its 2008 survey (p. 16) reported that a decrease from 65.30% to 61.18% had occurred in instructor-led real-time training since the 2007 report. In 2008, 61.18% of survey participants reported having used an instructor-led-classroom delivery system as their delivery method of choice. Thus, despite the range of training systems currently available, instructor-led-classroom training remains the most common approach to employee training. It should also be noted that the actual training methods used in an instructor-led-classroom setting were not identified.

Training and Development Areas of Interest

Previous research indicates that ongoing employee development is critical to the success of any organization today (Carnevale, 2005; Colvin, 2006; Homer & Griffin, 2006; Knowles, 1990; Peters, 2004; J. J. Phillips, 2003). Noe (2008, p. 3) stated that "training is not a luxury; it is a necessity if companies are to participate in the global and electronic marketplaces by offering high-quality products and services." Most recent

reports indicate that training is a $58 billion business (ASTD, 2008; Industry Report, 2008). If trained people are critical to the success of business, then training professionals should examine the full spectrum of training-delivery systems and methods in order to optimize employee learning, ensuring that it aligns with the changes demanded by the workplace.

Research was conducted in the 1970s with the goal of assisting training professionals in selecting training methods to achieve desired outcomes (Bell, 1977; Carroll, Paine, & Ivancevich, 1972; Tracey, 1971). These findings provided practitioners with new methods through which to meet the needs of their audiences as well as the needs of their organizations. However, judging from the articles published in practitioner journals, the focus shifted from the methods for how training was being delivered to the topics being delivered. An ERIC search that spanned the next 30 years identified 1,034 research studies within specialty areas, such as education, nursing, engineering, accounting, information technology, management, management science, communications, and other business-related fields, that compared training methods and end results.

Most recently, Noe (2008) devoted two chapters of his textbook, *Employee Training and Development,* to discussing methods available to training professionals; yet he allocated fewer than two pages to the method selection process. The focus of those two pages was on outcomes, objectives, transfer of learning, and costs and they highlighted, however briefly, the importance of effectively pairing a method to a desired outcome.

The training method selection strategy is part of the systematic process of instructional design, sometimes referred to as instructional design system (IDS). This is the field of "analyzing human performance problems systematically, identifying the root causes of those problems, considering various solutions to address the root causes, and implementing the solution in ways designed to minimize the unintended consequences of corrective action" (Rothwell & Kazanas, 1998, p. 3). Richey, an instructional designer, author, and professor, defined instructional design as "the science of creating detailed specifications for the development, evaluation and maintenance of situations which facilitate the learning of both large and small units of subject matter" (Richey, 1986, p. 9).

As noted previously, instructor-led-classroom training has traditionally been and continues to be the dominant delivery system for U.S. business trainers (ASTD, 2008;Industry Report, 2008). The current professional reports provide a tremendous service to their readers in terms of compiling data on the training trends, but they do not tell readers what is taking place in the instructor-led-classroom environment.

American trainers today come from varied academic backgrounds, with varied kinds and amounts of training experience, and, as a result, have varied exposure to the many training methods available. The variety in training methods and trainers' backgrounds suggests that a variety of methods are used in all training-delivery settings. Therefore, it is interesting to read professional data that tell us most trainers rely on the instructor-led classroom as the preferred method of delivery.

Professional reports from both ASTD and *Training* reveal the instructor-led classroom to be easily the most commonly used training-delivery system in use today. It

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would, therefore, be pertinent to know how this delivery system is being used in the corporate classroom, what methods are being used to support it, why professionals select these methods, and their efficacy.

In summary, the instructor-led-classroom delivery system accounted for more than half the training being delivered as currently reported in the training profession. It is not known whether the backgrounds of trainers account for the choice to continue using traditional instructor-led-classroom training. Perhaps, trainers are using the instructor-led-classroom training system supported by a variety of other methods, such as case studies and simulations. Trainers may assess each situation and make decisions based on all the data available to them.

The Problem Statement

In the most diverse and technology-rich work environment in U.S. history, we continue to see traditional instructor-led-classroom training feature as the delivery system selected on a national basis more than 61% of the time according to ASTD's 2008 report and 67% of the time according to *Training*'s report of the same year. It should be noted that many technology-based training materials are available, that the challenges of creating a workforce capable of doing increasingly complex work are daunting, and that the time and money invested in training is significant. That training and development professionals, therefore, continue to offer training in the classroom rather than through other more modern means is a matter of some interest—it seems counterintuitive. Certainly, it is a matter that should be investigated: Why is this choice being made? And, what methods are being called on to support it?

Purpose of the Study

The purpose of this exploratory study wass to determine which of the three training-delivery systems is the most frequently selected by training professionals in Virginia, and which training methods are being used to support the chosen delivery systems. This study also examined the extent to which the trainers' academic background and knowledge of instructor-led-classroom, blended, and online delivery systems contribute to the selection and use of those systems. In addition, the study examined the experience level of the training professionals in an effort to determine if this influences the selection of the delivery system. Further, the study explored the question of which methods are being used to support the training-delivery systems. Finally, the researcher sought to identify the extent to which trainers' workplace constraints and requirements and their backgrounds determined the frequency with which the instructor-led-classroom, blended, and online training systems are selected.

This study is guided by the following questions:

1. To what extent are instructor-led-classroom, blended, and online training systems being used by trainers in Virginia?

2. Which training methods are being used to support the training-delivery systems?

3. To what extent is the selection of the instructor-led-classroom training-delivery system explained by trainers' "internal factors" (i.e., academic background; knowledge of instructor-led-classroom, blended, and online delivery systems; knowledge of instructional design systems; knowledge of various training methods; and amount of training experience)?

4. To what extent is the selection of the instructor-led-classroom training-delivery system explained by trainers' "external factors" (i.e., workplace constraints and requirements, such as time pressure, participants' needs, availability of facilities and equipment, variety of program offerings, number of times a program is to be offered, and program size)?

Limitations of the Study

The sample population wass small and reflected only a portion of the membership of ASTD in the Commonwealth of Virginia. In addition, it consisted entirely of ASTD members selected by the vice presidents of the chapters who had agreed to participate in the study. Although candidates for inclusion in the study were sought from all four of ASTD's Commonwealth of Virginia chapters, the final sample may not accurately reflect the overall membership of ASTD.

Assumptions

This study was carried out under the assumption that all respondents would interpret the survey questions the same way given that the researcher was on site to interpret and provide guidance. The questionnaire was pilot tested, which should have ensured comprehension on the part of the respondents, thereby alleviating any concern regarding misinterpretation.

For the purpose of this study, the author recognized that the sample may not be representative of the entire body of professional trainers in the US; however, she considered that many of the challenges faced throughout the profession are similar and that results are likely to have applications beyond the particular environment of Virginia. Sampling from a set of trainers who maintain membership in order to remain current in their field is a sound indicator that the survey was administered to people most likely to be active in the profession. It was also assumed that the respondents answered the survey questions truthfully. The questions were designed to illicit honest thoughts and feelings regarding current practices.

Importance of the Study

Previous studies have not identified the specific factors associated with the tendency of training professionals to rely heavily on the instructor-led-classroom training-delivery system. The present study examined which instructional methods are being used to support training-delivery systems in order to achieve desired training outcomes. Through an examination of the selection of various delivery systems, the extent to which trainers' backgrounds influence their choices of training-delivery systems was determined; likewise, insights to help employers' structure workplace requirements conducive to using a variety of training-delivery systems were gained. Additionally, the study determined the selection process for training methods being used in the delivery systems. The findings from this study may encourage discussion that can lead to improvements within the field of training and development and within Virginia's business environment. Information of this kind will contribute to the goal of continuously improving training processes, both as pursued by individual trainers and by the profession as a whole.

Definitions of Terms

The following terms are defined to provide a clear understanding of their usage in this study:

Action learning: "An opportunity for teams or work groups to collaborate on an actual problem by determining a solution and committing to an action plan. The instructor then guides the learning process" (Noe, 2008, p. 256).

Active learning: "Methods used to engage the learner in the learning process" (Silberman, 2005, p. 178).

Adventure learning: "The use of structured activities to develop teamwork and leadership skills" (Noe, 2008, p. 252).

Behavioral modeling: "A delivery method that demonstrates the ideal enactment of a desired behavior and allows learners to discover what actions and standards are expected of them" (Laird, 1985, p. 145).

Blended learning: "The combination of different training 'media' (technologies, activities, and types of events) to create an optimum training program for a specific audience. The term 'blended' means that traditional instructor-led training is being supplemented with other electronic formats, possibly complemented with instructor-led training and other live formats" (Bersin, 2004, p. xv).

Business games: "A method similar to simulation that introduces the element of competition, or teams vying to see who makes the most effective decisions" (Laird, 1985, p. 159).

Case study: "A presentation, in narrative form, of an actual event that has occurred inside an organization. Case studies are not prescriptive, nor are they used to prove a point; they are designed to develop critical analysis and decision-making skills. A case study has a specific time frame, specifies a sequence of events, is narrative in structure, and contains a plot structure that deals with an issue (i.e., what should be/have been done?). Cases are frequently used to enable the participants to apply previously learned theories to the circumstances in the case, decide what is pertinent, identify the real issues, decide what should have been done, and develop a plan of action" (Broad, 2005, p. 268).

Demonstration: "A delivery method that allows learners to do something instead of merely observing. The learners have things in their hands and they move those things in purposeful ways; they start doing so at the earliest possible moment. The learners move about, they ask questions, they interact" (Laird, 1985, p. 145).

Discovery learning: "A highly experiential and interactive system of learning within a controlled environment of guided exploration—such as a classroom. It motivates the learner to explore ideas, information and concepts in order to construct new ideas, identify new relationships and create new models of thinking and behaviors. Often used are stories, games, simulations, visual maps and other techniques" (Rezak, 2008, p. 64).

Discussion: "A method which focuses on and may even structure conversations between trainees, aimed at specific learning objectives. Such objectives distinguish the conversations from mere social interactions" (Laird, 1985, p. 141).

Experiential learning activity (ELA): "A facilitator-led intervention that moves participants through the learning cycle from experience to application (also known as a structured experience). ELAs are carefully thought-out designs in which there is a definite learning purpose and intended outcome. Each step— everything that participants do during the activity—facilitates the accomplishment of the stated goal. Each ELA includes complete instructions for facilitating the intervention and a clear statement of goals, suggested group size and timing, materials required, an explanation of the process, and, where appropriate, possible variations to the activity" (Broad, 2005, p. 256).

Formal training: "A training activity that is deliberately planned and structured,

[whereby] people are called away from their desks, their lathes, or their delivery

routes to attend a seminar or to watch a videotape or to sit down with a computer-

based training program" (Industry Report, 1993, p. 29). Formal is a critical term

given that much of the teaching and learning that occurs in workplaces is

informal.

Instructional design (ID): "The science of creating detailed specifications for the

development, evaluation, and maintenance of situations which facilitate the

learning of both large and small units of subject matter" (Richey, 1986, p. 9). In

this paper, instructional design is both a process and a discipline.

Instructional systems design (ISD): "A research-based methodological approach to the

planning of instruction, with attention to the consistency and compatibility of the

technical knowledge at each state of design. This systematic planning of

instruction to achieve learning is characterized by a process of stating goals,

selecting or developing instructional interventions, and using feedback from

learners to improve the instruction" (Gagne, Wagner, Golas, & Keller, 2005, p.

12).

Instructor-led-classroom training: "A delivery model using a teacher, professor, or

subject-matter expert to deliver information in a classroom setting" (Bersin, 2004,

p. 2).

Instruments or assessments: "These words refer to a device used to assess, appraise,

evaluate, describe, classify, and summarize various aspects of human behavior.

The term used to describe an instrument depends primarily on its format and

purpose. These terms include survey, questionnaire, inventory, diagnostic

assessment, or poll. This method is frequently used in the area of leadership

development for an individual to focus on his or her own behavior. Instruments

also are used to obtain information" (Broad, 2005, p. 258).

Learning: "Learning is the acquisition of knowledge, skill, or attitude by study,

experience or teaching and that stems from life" (Jarvis, 1987, p. 27).

Lecture: "Words spoken by the instructor or trainer. It is thus a verbal-symbol medium,

offering a relatively passive and unstimulating experience for learners unless the

speaker has unusual vocal and rhetorical talent" (Laird, 1985, p. 133).

Lecturette: "A short talk that provides an explanation of a principle, model, or process

that is pertinent to the participant's current learning needs. A lecturette is intended

to establish a common language bond between the trainer and the participants by

providing a mutual frame of reference" (Broad, 2005, p. 258).

Non-traditional methods: "Instructional methods that utilize technology such as

electronic learning via web based training site, mobile technology such as i-pods,

and simulations in the delivery of instruction" (Noe, 2008, p. 267).

Online or web-based training: "Uses HTML and browser-based technologies like Flash.

It usually runs within a portal or an online learning environment. On-line or web-

based training leverages the power of search and linking modes, which is unique

to the Internet" (Bersin, 2004. p. 12) and this increases the power of the users as

they access knowledge.

Role play: "A method to enable participants to practice new skills in a safe environment."

It is usually incorporated in those subject areas in which participants will assume

a role in a situation/scenario, such as a police chief presenting to town council or a town manager. The role play is often repeated using a different approach and/or incorporating changes made based on feedback received. In other words, the training method of "role playing is a spontaneous interaction involving realistic behavior" (Broad, 2005, p. 258), which can be demonstrated by the participants.

Simulation: "A method that enables the learner to understand the interrelationships among components of a system or process by providing a reproduction of that system or process" (Tracey, 1971, p. 207). "Simulations differ from games in that simulations test or use a model that depicts or mirrors some aspect of reality in form, if not necessarily in content. Learning occurs by studying the effects of change on one or more factors of the model. Simulations are commonly used to test hypotheses about what happens in a system—often referred to as 'what if?' analysis—or to examine best-case/worst-case scenarios" (Broad, 2005, p. 258).

Traditional methods: "Instructional methods that do not involve electronic technology to deliver lessons" (Noe, 2008, p. 234).

Trainer: "One within the organization, who accurately assesses the needs of the organization and then prepares and implements a plan of action to address adequately those identified needs" (Craig, 1987, p. 12).

Trainer discretion: "The level of freedom, flexibility, or discretion a training professional has in selecting training methodology or media" (Noe, 2008, p. 153).

Training: "Planned effort by a company to facilitate employees' learning of job-related competencies. These competencies include knowledge, skills, and behaviors that are critical for successful job performance. The goal of training is for employees

to master the knowledge, skill, and behaviors emphasized in training programs

and to apply them to their day-to-day activities" (Noe, 2008, p. 32).

Training and development (T&D): "A subgroup of a human resources department. This

subgroup acquaints the people with material and technology that will be useful in

improving work performance. It helps them learn how to use the material in an

approved fashion that allows the organization to reach its desired output" (Laird,

1985, p. 6).

Summary and Dissertation Structure

This dissertation comprises five chapters. This first chapter has provided the reader with an overview of the current training and development environment as well as the problem statement and the direction of this research study. Chapter 2 presents the literature review, emphasizing the historical background of the training profession and the theoretical basis for instructional design. Instructional methods and objectives are discussed in Chapter 2 as they relate to instructional design theory. The rationale for examining trainers' background characteristics is also addressed in Chapter 2. Chapter 3 explains the study's research methodology. The results of the study are presented in Chapter 4. Chapter 5 offers a discussion of the study's results, including implications and recommendations for future research and applications for practitioners.

Chapter 2: Review of the Literature

This chapter presents a review of literature relevant to the connections between training and development practices and instructional systems design (ISD), including training-delivery systems and related training methods. Opening with a brief overview of training and development, the chapter next touches on the history of ISD, details its principles and components, and refers to the key studies and reports from which this study draws for its theoretical framework and data, respectively. The focus then turns to current training and development research and practices. The final section discusses the key points of the literature review and summarizes the main points of this chapter.

Training and Development

Training and development refers to an organization's planned efforts to facilitate the learning of job-related competencies on the part of its employees (Noe, 2008; O'Toole & Lawler, 2006). These competencies include knowledge, skills, and behaviors that are critical for successful job performance. The goal of training is for employees to master the knowledge, skill, or behavior emphasized in any given training program and to apply it to their day-to-day work performance. Significant amounts of company funds are spent on training and development, with more than $56 billion (Industry Report, 2008, p. 22) invested in the development of employees in 2007. This figure does not include the salaries of employees in the training departments, the inclusion of which could produce an annual figure of as much as $139 billion (ASTD, 2008, p. 6).

For a company to gain a competitive advantage, the training it delivers to its employees has to involve more than just basic skill development (Broad, 2005; Noe, 2008; O'Toole & Lawler, 2006). In other words, a company should take a broad perspective regarding training, viewing it as a way to create and develop intellectual

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capital. Training that creates intellectual capital includes attention to both basic and advanced skills. Basic skills are defined as those skills needed to perform a particular job; advanced skills involve using technology to share information with other employees and/or customers, understanding the customer or manufacturing system, and developing self-motivated creativity (Laird, 1985; Noe, 2008; O'Toole & Lawler, 2006; J. J. Phillips, 2005). According to some researchers up to 85% of jobs in the US will require extensive use of knowledge in the future (Noe, 2008; J. J. Phillips, 2005). Employees will be required not only to understand the service or product development system, but they will also be required to share knowledge and to use it for such purposes as modifying a product or better serving the customer.

Many companies have adopted this broader perspective according to which both a business and its employees benefit from training that goes beyond emphasis on a particular skill. Such a perspective fosters the development and provision of what is known as high-leverage training. Explicitly connected to strategic business goals and objectives and sometimes referred to as strategic drivers, high-leverage training uses instructional design processes that include benchmarking against other organizations' training programs (Fitz-enz, 2000; J. J. Phillips, 2005). High-leverage training practices are also defined by their emphasis on creating working conditions that encourage continuous learning, which, in turn, require employees to gain a comprehensive understanding of their organizations' systems, including the relationships among their respective positions, work units, and the structure of the company (Fitz-enz, 2000; Sessa & Condan, 2006).

The emphasis on high-leverage training has been accompanied by a movement to connect training to performance improvement (Broad, 2005). Companies lose money on training because it is poorly designed, not linked to a performance problem or business strategy, or its outcomes are not appropriately evaluated (Broad, 2005; J. J. Phillips, 2005). Noe (2008) went so far as to state that "companies have been investing money into training simply because of beliefs that it is a good thing to do" (p. 4). However, the practice of providing a training program without a compelling business reason for doing so is being abandoned (Broad, 2005; Noe, 2008; J. J. Phillips, 2003). Companies have begun evaluating training departments not on the basis of the number of programs they offer, but on how their training addresses business needs related to learning, behavioral change, and performance improvement (Broad, 2005; Noe, 2008; J. J. Phillips, 2003). This shift from an activity-based process to a results-based process that connects to business outcomes can give an organization a competitive advantage within its industry. Certainly, many executives realize the importance of high-leverage training and its impact on human capital; they recognize the fact that other sources of capital in the organization, such as finance, resources, technology, and access to markets, are basically the same for all organizations. This means that the success of most organizations rests on human capital, that is, employees; therefore, employees are logically cast as "the last source of competitive advantage" (J. J. Phillips, 2003, p. 5).

Given measurements that show poor performance of training and development programs, organizations need help improving them in order to ensure that they yield the desired results. Specifically, measurements of performance following many training programs have shown little payoff, with only 10–30% return in improved performance

levels of trainees (Baldwin & Ford, 1988; Broad, 2005; Noe, 2008; J. J. Phillips, 2005).

The transfer of training or learning refers to employees' ability to effectively and

continually apply what they have learned in training (knowledge, skills, and behaviors) to

their jobs (Broad, 2005; Broad & Newstrom, 1992). A number of researchers have

examined various approaches to training in an effort to measure the transfer of training

(Baldwin & Ford, 1988; Fleishman, Harris, & Burtt, 1955; Kotter, 1988; Mosel, 1957;

Newstrom, 1975, 1980; Stolovitch, 2000; Tannenbaum & Yukl, 1992). Among the most

referenced and influential studies is that of Baldwin and Ford—a study that emphasized a

"growing recognition of a transfer problem in organizational training" (p. 63). Baldwin

and Ford went on to say that "it is estimated that while American industries annually

spend up to $100 billion on training and development, not more that 10 percent of these

expenditures actually result in transfer to the job" (p. 63). The lack of transfer of training

or learning continues to be of concern: some researchers have tried to prove that training

is not the answer to all performance problems; some have focused on proving the

importance of providing training and development programs using instructional systems

design; and still others have considered ways to improve the measures used to capture the

value added by training and development programs (Cennamo & Kalk, 2004; Fitz-enz,

2002; J. J. Phillips, 1997, 2005; P. P. Phillips, 2002; Robinson, 1998; Rummler, 2000;

Stolovitch & Keeps, 1995).

Grounded Theoretical Framework: Instructional Systems Design

Instructional systems design (ISD) grew out of the systems approach to training

and development used by the military during World War II. Its roots are in general

systems theory (GST) (Bertalanffy, 1968; Briggs, Gustafson, & Tillman, 1991; Rothwell

& Kazanas, 1998; Seels & Glasgow, 1992; Tracey, 1971), an interdisciplinary field of science and the study of complex systems in nature, society, and science. More specifically, it is a framework through which any group of objects that work in concert to produce some result can be analyzed and described (Bertalanffy, 1968). As it applies to training and development, GST is based on the premise that learning should not occur in a haphazard manner; instead, learning should take place in accordance with orderly processes, and its outcomes should be measurable.

ISD is also said to be based on open systems theory, which is a derivative of GST. An open system is one that continuously interacts with its environment; it "receives inputs from the environment, transforms them through operations within the system, submits outputs to the environment, and receives feedback indicating how well these functions are carried out" (Rothwell & Kazanas, 1998, p. 10). Open systems theory is important to training and development for two reasons. First, it enables training and development professionals to recognize the critical importance of adapting to changes in the environment and even anticipating them; after all, organizational and individual effectiveness both depend on how well a company's products and/or services match environmental demands. Second, training and development professionals understand that any corrective action used to change any element of a system will affect other elements within that system (Briggs, Gustafson, & Tillman, 1991; Richey, 1992; Seels & Glasgow, 1990; Tracy, 1971).

When instructional design is governed by the systems approach, the premises of the general and open systems theories form the foundation of the objectives, methods, and evaluation measures. Each of these elements must be considered in the design, and

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each must be congruent with the others in order to achieve a design that is coherent. These three elements cannot be considered independently; a change in any one element will affect the other two.

The principles of ISD can be summed up thus: (a) it benefits from the participation of stakeholders; (b) it follows an orderly but flexible sequence in terms of planning; (c) it is based on research; (d) it calls for empirical testing and ongoing improvement. These principles are explored in more detail next.

First, the planning involved in ISD as governed by these two systems theories suggests not only the necessity of a thorough analysis of how the training program components align, but also that if all the stakeholders participate in the planning process, the training design is likely to be effective (Briggs, Gustafson, & Tillman, 1991). Examples of stakeholders would be management representatives, department heads, training professionals (design and/or delivery), members of the training audience, and human resources personnel. Planning would not necessitate a continuous stream of meetings, but rather a process of keeping stakeholders informed of progress and any changes or corrective measures to be taken. Without such a concerted planning effort, a mismatch between the need for the program and its content can occur, resulting, in turn, in lack of training or learning transfer (Briggs, Gustafson, & Tillman, 1991; Noe, 2008).

Second, the open systems approach supports an orderly but flexible sequence in terms of planning. Multiple models of instructional design depict each step in the process. However, training professionals are often cautioned about interpreting these models too literally (Briggs, Gustafson, & Tillman, 1991; Noe, 2008; Piskurich, 2000; Richey, 1992; Seels & Glasgow, 1990) and not adjusting them to better meet specific company and

employee needs. Although each model has a logical progression, the steps of each are usually only accomplished through a significant amount of backtracking and anticipating (Briggs, Gustafson, & Tillman, 1998; Noe, 2008; Seels & Glasgow, 1990). It is often not possible to complete a step before starting the next one due to time constraints and/or other limitations. In addition, it is desirable to return to make corrections to previous steps based on new insights or information gained later in the design process. In short, there is an iterative approach to the instructional design process that the models do not adequately convey (Dick & Carey, 1993; Piskurich, 2000; Ritchey, 1992; Seels & Glasgow, 1990).

Third, instructional design as an open system is research based. It is both "systematic and scientific in that it is documentable, replicable in its general application and leads to predictable outcomes" (Gagne, Wagner, Golas, & Keller, 2005, p. 18). Instructional systems design research, theory, and practices draw on the fields of psychology, communications, education, and computer science (Seels & Glasgow, 1990).

Fourth, instructional design in an open system calls for empirical testing and ongoing improvement of the entire instructional plan. Heavy reliance is placed on pilot testing and revision of the instruction once it has been designed (Briggs, Gustafson, & Tillman, 1991). Related to the requirement of ongoing improvement is that of measuring outcomes and benchmarking. Specifically, instructional systems design requires comparing the final version of the training design with its own original objectives, at a minimum. It is preferable, though, to also compare the design with that of a program with similar objectives. This assessment and/or comparison permits the stakeholders to examine instructional and non-instructional alternatives as they relate to achieving a

training program's goals. In the case of an instructional system, the goal would be the desired level of performance following the participants' completion of the program (Briggs, Gustafson, & Tillman, 1991).

A basic model used in instructional systems design is the ADDIE model. ADDIE is an acronym for analysis, design, development, implementation, and evaluation—the steps in the instructional design process (Cennamo & Kalk, 2005; Gagne, Wager, Golas, & Keller, 2005). Each step is critical to the success of an instructional program in meeting the performance goals of an organization, and each one is connected to the other elements of instructional design. Consequently, each element of the ADDIE model is a progression and regression that ensures the successful design and delivery of a training program. Specifically, models such as ADDIE take the following points into account: (a) creating a successful training program requires careful analysis of the business problem that needs to be addressed; (b) creating a successful training program by focusing on a delivery system requires understanding of the participants and the training methods that would work best for that group; and (c) designing a meaningful evaluation requires a strong understanding of the objectives of the program.

For the purpose of this research study, the design stage is of most interest in determining the emphasis and direction of current practices. The design stage results in a plan for guiding the development of instruction. It is at this stage that the course goals are translated into major course objectives. At this stage, too, the major units of instruction, the major outcomes for each unit, and the time allocations for these units are determined. The units are each divided into lessons with learning activities, sometimes referred to as

learning events, and the specifications for these lesson plans are also developed. Finally, during the design stage the specifications for the assessment are developed.

During the design stage, the learning strategies are developed. Instructional strategies or learning strategies are defined as a set of tools, methods, and content that when combined, create an instructional approach (Salas & Cannon-Bowers, 2001). The most effective strategies achieve the following: (a) they present relevant information or concepts to be learned; (b) they demonstrate the knowledge, skills, and attitudes to be learned; (c) they create opportunities for program participants to demonstrate appropriate use of the knowledge, skills, and attitudes that the training intends to develop; and (d) they provide feedback to participants during and after the training program. Since there is no single best delivery system to reach all training audiences and no single best method for delivering desired content, researchers continue to address how to best present targeted information to specific groups (Bretz & Thompson, 1992; Steel-Johnson & Hyde, 1997).

Research in Training and Development

Practitioners in the fields of training and development may find selecting a training-delivery system and supporting training methods to be challenging, given all the aspects they must consider: budget, development schedule, diverse audiences, distribution of training content, trainer expertise, objectives of training program, and geographic dispersion of participants. The factors most often considered in the decision-making process are the budget, development schedule, and distribution of training content (Noe, 2008). In regard to the selection of training-delivery systems and methods, data reported in the previous chapter indicate that there has been very little change in

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delivery systems used by training professionals (ASTD, 2008: Industry Report, 2008);

what continues to be unknown is which methods are being used to support these training

systems. This chapter examines the use of the three primary delivery systems: instructor-

led-classroom, blended, and online. It also explores which methods are being used to

support these delivery systems.

Delivery Systems

ASTD uses choice of delivery system as an important category in its State of the

Industry Report, and in 2000 *Training* collapsed its methodology choices from a wide

variety of methods to categories that fit a model of three delivery systems. The emphasis

in both professional annual reports is clearly not on instructional methodology, but on

delivery systems.

Noe (2008) reported that "technology is having a major impact on the delivery of

training programs" (p. 268). He further stated that "several surveys of company training

practices suggest that although face-to-face classroom instruction is used by almost all

companies, new technologies are gaining popularity" (p. 269). When the data from the

2008 annual reports of *Training* (referred to as Industry Report) and ASTD were

examined, it could be seen that the use of online as a delivery system had increased

during the last 15 years. The current level of use of online delivery has been reported to

have reached 21.3–24.5% among respondents (ASTD, 2008; Industry Report, 2008).

Despite the increase in online training and the support for more technology in the training

field, the instructor-led classroom continues to be the most frequently used delivery

system. The following sections examine the use of the three delivery systems by training

professionals.

Instructor-led-classroom delivery system. "A model that dates from long before there were formal schools," the classroom delivery system involves an instructor who "delivers a lecture from the front of the room (Cennamo & Kalk, 2005, p. 102). The traditional instructor-led classroom continues to be the most frequently used system for delivering training, as stated in Chapter 1 (ASTD, 2008; Industry Report, 2008). It is usually the best option for teaching basic skills, orienting learners to new content or a new concept, building a team, and teaching communications and social skills (Cennamo & Kalk, 2005). A major advantage of this system is that it is generally possible to design and deliver training using this delivery system relatively quickly. It can also be efficient in terms of cost when a one-time delivery of information at one location is the anticipated forum. Cennamo and Kalk also noted that "if the lecturer is a dynamic speaker with dazzling presence, learners may be sufficiently engaged" (p. 102). They advised that the instructor-led-classroom delivery system be designed to "build in opportunities for learners to actively check their understanding through discussions, worksheets, quizzes, practice and feedback, group projects, and presentations" (p. 102). Bersin (2004) introduced instructor-led training in *The Blended Learning Book* thus: "there will always be a role for the teacher, professor or subject matter expert to teach and entertain us in a classroom" (p. 2). Instructors convey enthusiasm, expert knowledge, experience, and context. They can answer questions and change the pace and direction of a class based on the participants' responses. On the other hand, there are challenges associated with instructor-led-classroom training. The biggest challenge is lack of scale. If a company needs to train thousands of participants, there are limited options: large class sizes, lots of travel, multiple small classes in one location, or a combination of these. Large class sizes

greatly reduce effectiveness; travel is expensive and time-consuming. Tight deadlines present an additional challenge. As most business-critical training problems are time-driven, corresponding training programs must be delivered according to tight deadlines. Moreover, they must accommodate the fact that learners generally have limited time to devote to the training. According to Bersin (2004), "if a program relies on instructor-led training and has a strict deadline time and limits on duration, you have a problem" (p. 3). Noe, an expert and well-known author in the training field, did not even mention the instructor-led-classroom delivery system in his 2008 textbook. Within the literature, semantics can be misleading when it comes to understanding the delivery systems. While Noe did not mention instructor-led-classroom as a delivery system in his work, he did use the term traditional delivery system, which he described as not requiring "new technology for delivery" (p. 234). Further, Noe did support training that does not use of technology when it is used appropriately and when the decision to use it follows instructional design principles.

Online delivery system. Margaret Driscoll (1998), author and researcher, argued that online learning is not the solution to every training problem, but that it is appropriate for teaching certain skills and imparting particular kinds of knowledge, such as software applications, management skills, and business writing. Driscoll also stated that while "technically and theoretically almost anything could be taught on-line, it may not be practical" (p. 2). Since Driscoll's original text was written in 1998, online or e-learning has become an important tool for training a dispersed workforce because of its relatively low cost, variety of content, and accessibility. And certainly some professionals in the field of training and development continue to emphasize the benefits of electronic

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delivery systems. Technology is about speed. Tony O'Driscoll (2008), author and e-learning executive, stated that "the current teacher centric, classroom based model is being challenged by society and technology on all fronts" (p. 13). Online learning can be an effective tool if the lessons are designed according to instructional design principles. Moreover, online is not restricted to a specific time or location. Learners can work on the material any time and anywhere they have an Internet connection. Websites can deliver the primary instructional content or extend or enhance training content (Cennamo & Kalk, 2005). Most online programs require registration, and they are often designed to track learner performance through the use of learning management systems. This can be an effective tool for an organization that is rolling out a company-wide change on a particular date and wants to monitor the impact on trainees. For example, Barnett Bank, a large commercial Florida bank, wanted to implement a new data-entry system by a certain date (Bruce Kerr, personal interview, January 2009). The old data-entry system would no longer be in place on a predetermined date in the near future. The new system was taught via an intranet using a simulation of actual processes and procedures. The training directors were able to monitor the progress of each customer service representative and the types of mistakes being made. New training could be designed to address the kinds of errors being made. Accordingly, when the new system went live, it was with very few problems. Noe (2008) referenced the advantages of online learning as inhering in the ability to "reduce the costs associated to delivering training to employees, increase the effectiveness of the learning environment, and help training contribute to business goals" (p. 270). While one of the advantages of online systems can be the rollout of training to multiple locations around the world, this can also be a disadvantage, if

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instructional design principles are not followed. Many companies have reported failed attempts at training employees in locations outside the US using online training systems. This can be attributed to poor design in "not recognizing the cultural differences and providing the necessary support in the design and development stages of instructional design" (Edmundson, 2009, p. 45). While cultural issues can affect the success of online training systems, issues during the design phase can be equally problematic. Online learning can be ineffective and frustrating, if the content of the training is not properly designed using instructional design principles. It was the fate of many companies, for example, by early 2000 to retreat from the online training systems they had been sold on a few years earlier because they had come to recognize that the programs did not engage their employees and/or did not meet their business needs (Industry Report, 2008). Reports within the field indicate that an increase in the use of online training began in 2004 (ASTD, 2005; Industry Report, 2005). This trend could be attributed to the proliferation of software packages that were easier than previous packages for training professionals to use. Reports from these same sources in 2008, however, indicated a decline in the use of online training. Bersin (2008) speculated that the most recent decline in online training could also be attributed to a maturation of the delivery system. The topics covered currently may be as far as online training "can be taken and perhaps larger companies have produced all the online training possible at this time with the given technology" (Industry Report, 2008). The most significant challenge reported in a 2003 survey was that of "getting learners to take online courses" (Bersin, 2004, p. 16). The most frequently reported reason for the failure of online learning programs was "the paradigm itself" (p. 17). There is no classroom or group of people assembled in a location for training. There

are no face-to-face social interactions through which to transfer learning. "Internet learning can be considered slow, boring, and buggy," according to Bersin (p. 17). The majority of the research related to online delivery supports the value of online delivery because of its ability to deliver instruction to large groups of geographically dispersed employees. One such corporate example can be found in Elgin, Illinois, with Caterpillar, Inc. The training division relies heavily on online training to reach its managers around the world. When interviewed on the value of online training, the chief learning officer of Caterpillar University (CU), Fred Goh, expressed the position that "even when similar programs are compared, e-learning is less expensive to deliver almost regardless of learner population" (Walliker, 2005, p. 1). CU actually constructed a mathematical model to calculate the key cost components, such as course development costs, salaries, time required to prepare for and teach each class, the cost of outside instructional material, travel costs, learner opportunity costs, and the allocated cost of the classroom or conference room. CU also examined instructional efficiency and velocity (how quickly a program can be delivered across their organization), learning efficiency, timeliness, consistency, and ease of updating material. Its data support online delivery systems as "hav[ing] an advantage in nearly every area, including efficiency and velocity" (p. 1).

Perhaps the most useful studies are those dedicated to identifying and empirically validating the best practices of online education. Many of these studies have been conducted in the area of higher education; of these, the preponderance uses education and psychology theories to determine how higher education students learn best in online environments. They provide clear guidance for structuring and developing more effective online courses (Sitzman, Kraiger, Stewart, & Wisher, 2009). Researchers in this

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field assert that traditional training and learning practices may not be suitable online because of vast differences between the environments regarding the ways content is stored, presented, and delivered.

       Blended delivery system. Technology does have limitations, such as "insufficient bandwidth, a lack of high-speed Web connections, or a preference of the trainees for face-to-face contact with instructors, or other learners, or the lack of ability by the trainees to find unscheduled time during their workday to devote to learning from their desktops" (Noe, 2008, p. 288). To obviate some or all of these drawbacks, many companies have sought another delivery-system option known as blended learning. The blended delivery system or blended learning has become something of a buzz word in training and education, taking on many meanings. Bersin's (2004) definition is "that traditional instructor-led training is being supplemented with other electronic formats" (p. 9). Noe suggested that blended learning provides learners with the positive qualities of both traditional instructor-led-classroom and technology-based delivery systems and instructional methods. Blended learning as a delivery system combines in-class time with online work (Cowan, 2002). The concept, as presented by multiple authors (Bersin, 2004; Noe, 2008; Verkroost, Neijerink, Lintsen, & Veen, 2008), emphasizes that the blended learning delivery system allows learners to have more control over their learning. This delivery system provides face-to-face social interaction and ensures that some of the instruction is presented in a dedicated learning environment that enables learners to discuss and share insights, and even collaborate. These face-to-face opportunities are particularly useful in that the learners get to speak with the instructor and ask questions in an environment where they are likely to be addressed efficiently. Moreover, contact with

both the instructor and other learners fosters efforts to connect the concepts being taught

to actual job performance, thus making the training more meaningful. And, from a

training perspective, concepts can be reinforced and exercises not possible in the online

environment can be worked on. According to Cowan's description, blended learning

involves "time in the classroom [that] can be used to set the stage for the online portion

of the training, to organize participants into groups if necessary or to conduct skill-

practice exercises" (p. 9). It is in this environment that the instructor could explain the

blended approach and the aspects of the particular program and the learning tools in place

to assist in the mastery of the concepts. The next phase could include online learning

using an assortment of methods. For example, IBM is currently using a four-tier model in

the training of their managers, whereby an instructor leads an orientation session, live and

face-to-face, on the management development process. The next phase includes online

learning as the delivery system in the first two tiers; blended is again used in the third

tier; and the instructor-led classroom is used in the final tier (Weinstein, 2005). Express

Personnel Services, an employment agency providing staff with technical and office

skills to business and industry, uses the blended delivery system to train its own

managers. In this case, managers become familiar with some basic managerial concepts

online, meeting at a later date in the instructor-led classroom, where the online training is

reinforced and extended (Mulich, 2004). The blended delivery system encourages the use

of learning principles in the instructional design process, as does every other delivery

system. In the design of blended systems, attention is paid to all the learning principles,

but especially in seeing, hearing, watching, and learning by teaching modes (group or

teams working together to solve or discuss problems). In a blended model, the instructor

serves as facilitator and coach. A meta-analysis completed in 2008 revealed that the blended delivery system is likely to be more effective than the instructor-led system for motivating participants to learn and for teaching declarative knowledge and information about ideas or topics (Sitzmann, Kraiger, Stewart, & Wisher, 2009).

Instructional methods. Instructional methods constitute the educational approach for turning knowledge into learning; they are the "how to" (p. 38) of delivering training (Carter, 1994). Tracey (1971) stated that "an instructional method is a basic approach to instruction" (p. 188). Laird (1985) likened the selection of instructional methods to traveling from one destination to another: the prepared traveler will know the starting point and the destination before selecting the highway. This analogy holds true for the selection of instructional methods: if the training professional has followed instructional design principles, the trainees will know where they are, what is expected of them, and where they are going. Using this analogy, the next decision would be determining which method(s) will take the trainees to the desired destination. The choice may be a single method or a combination of several instructional methods. The decision regarding which method(s) to use is made during the design phase of the instructional design process with attention being paid to learning objectives, participants' needs, organizational norms, delivery expectations, and budget (Briggs, Gustafson, & Tillman, 1991; Cennamo & Kalk, 2005; Seels & Glasgow, 1990; Silberman, 2006; Tracey, 1971). Empirical literature pertaining to training methods is somewhat limited as noted by many authors (Arthur et al., 2003, Bretz & Thompsett, 1992; Campbell et al., 1970; Carroll et al., 1972; Goldstein, 1991; Heneman et al., 1989; Lacey et al., 1982; Rees & Earles, 1991).

Tracey's foundational work in 1971 enabled practitioners to understand the systematic process of training design. He also identified methods that could be used in a training setting, defined a range of training methods, and provided insights regarding the advantages and disadvantages of each. Some of the methods described by Tracey bear titles that are now outdated; however, his descriptions are still relevant to the renamed training methods even though some of the concepts inherent in them have evolved over time. An example of such an evolution might be "buzz sessions," which Tracey defined as "huddle groups or Philips 66 groups which are used in conjunction with lecture … a subdivided group of six given six minutes to discuss a case, situation, or application of a concept to the workplace and able to report their conclusions to the total group" (p. 209). Noe (2008) used a similarly timed process, but defined the process as "group building methods" (p. 251). Tracey's definitions were some of the earliest work by researchers to develop a systematic approach to training and development practices. And, as seen through Noe's work, the movement to systematize the process continues. Even though the names of the methods may have changed, the desired outcome through the use of the method has remained the same.

Carroll et al.'s study (1972) on the relative effectiveness of training methods also approached the selection of training methods as a scientific and systematic process that should align with the desired training objectives. In order to determine which training methods were preferred for achieving which specific training objectives, this study included a survey of 200 training directors with the largest number of employees as identified in Fortune 500's list of the largest corporations. A self-report questionnaire was used to collect information about the training methods selected matched against the

desired outcome of the training program. The researchers found that in 1971 training directors reported a dislike for the lecture as a training method despite research that supported the lecture as an effective tool for knowledge acquisition. The findings also reported high positive ratings for the use of programmed instruction, while the empirical research support was less than positive for this method. This study set the stage for additional research in the area of training methodology selection.

Newstrom (1975) followed Carroll et al.'s study to determine the most effective training method for achieving training objectives. Newstrom went so far as to state that "intentional or unintentional failure to identify the most effective training method would result in a grave injustice to the training participant, affect the credibility of the profession, and [indicated a] failure to exercise responsibilities as managers charged with the task of human-resource growth and development" (p. 12). The results of this study indicated the need for careful assessment of desired training outcomes and the alignment of the appropriate training method to these identified outcomes in order to deliver results.

Into the late 1970s, many of the leaders in the training profession reported concern over the choice of instructional methods. One such leader was Chip Bell, a prolific contributor to training journals during this era. Bell's article in *Training* (1977) focused on the rapid adoption of new technologies without careful examination of the instructional design process and the desired training objectives: "Haste and expedience in selection of an instructional strategy (multiple methods) for a learning program can lead to a program that will look real neat, but not do anything about changing behavior" (p. 3). Bell concluded his article by stating that training methods be selected only after the

instructional design process had been followed; thus the possibility of "the method dictating the message" (p. 6) would be avoided.

Reiser and Gagne (1983) agreed with the previously mentioned researchers that the selection of appropriate training methods is important for achieving specific training goals—a consideration that Reiser and Gagne used to design the development of their own instructional media, which supported lecture and other methods of instruction. Their definition incorporated the "physical means by which an instructional message is communicated" (p. 5). This definition incorporates a broad spectrum of methods that includes instructor, printed text, and interactive video presentation. The results of this study supported the notion that training programs be built on a model for instructional methods that is itself predicated on the instructional design process.

Mitchell (1983) suggested that the five Gagne categories of learning capabilities—verbal information, intellectual skills, cognitive strategies, attitudinal change, and motor skills—correlate to the selection of classroom instructional methods. According to Mitchell, each category focuses on a specific kind of learning outcome that should influence the selection of instructional methods. The results of Mitchell's study support the idea that instructional methods should be selected with reference to the desired learning capability category and so align with the desired training outcome. An example of this would be that if the desired outcome were an increase in verbal information, an appropriate method would be the lecture. As an example, at the other end of the spectrum in which performance of a task, such as changing a tire, is desired, the matrix would direct the trainer to video presentation, written steps, practice, and demonstration of the desired skills.

Bellinger (1991) was also interested in the choice of instructional methods as it related to adult-learning principles and the career level of trainees. Bellinger theorized that the training transfer rate would increase if (a) the chosen instructional methods aligned with adult-learning principles and desired training outcomes, and (b) the trainees were allowed to choose the instructional method. The researcher prepared training curricula to prepare managers and supervisors for advanced application of leadership skills. The dual curricula had the same desired outcomes but the training methods used varied from (a) instructor-centered methods, which used lectures and other methods, to (b) learner-centered methods, which permitted more interaction between and engagement of the trainees. The researcher permitted the trainees to choose the program they wished to enroll in for the desired training. The findings of this research study reinforced a preference for the instructor-centered classroom by the training participants. The results showed little difference in the rate of transfer of training to job performance between instructor-centered methods and learner-centered methods. This finding, though, appears to conflict with long-held principles of adult learning that prefer learner-centered methods over instructor-centered methods. Bellinger suggested that more research be conducted to determine the relationship between research study populations and preferred instructional methods and to compare classroom instructional methods and the rate of transfer.

Broad and Newstrom's (1992) work continued the study of the transfer of training to workplace performance. They were interested in the influence of the stakeholders, identified as managers, trainers, and trainees, on training transfer according to the three time frames in which transfer can occur: pre-program, during program, and post-program.

This study also concluded that only 10% of training is transferred back to the workplace in terms of making an impact on workplace behavior. The authors recommended that further research exploring training and learning would benefit from having less of an event orientation and more of an ongoing process approach, whereby the stakeholders would treat the situation as a continuous learning process with no separation after the actual training had been completed.

Carter and Parker (1993) closely replicated Carroll et al.'s study (1971) by identifying the importance of training methods as they relate to the achievement of specific training objectives. Their results showed a similar bias toward the lecture as an ineffective training method with a moderate to low rating. Additionally, methods using newer technology were rated as highly positive. Teleconferencing received a low effectiveness rating, although data show that this method was popular at the time. Carter and Parker concluded that the high positive support for the newer technology methods could be attributed to the notion that "newer is better and therefore more effective" (p. 4). The results of this study are incongruent with the results of the industry study data (Industry Report, 1994) reported during this same time. In 1994, the most frequently selected training methods for use in business and industry were the lecture and videotape. This could be attributed to the study's use of self-reports and the desire of training professionals to be perceived as current in their field.

In 1994, Carter reported an experimental study to determine the impact on the knowledge gain related to two training methods—case study and lecture—found at opposite ends of the training method spectrum. Carter used a control group and a test group to determine whether the knowledge gained in training was dependent on

interactions between training methods, cognitive ability, motivation, and affect. The results of this study supported the use of more interactive method(s) in training and development programs for more diverse populations. The author suggested that the training method be aligned with the desired affect, which relates to some of the earlier work by Tracey. Carter held that this alignment between the "trainee's abilities and [the] training method will lead to greater knowledge gains and greater efficiency of training" (p. 213). Again, this supported the instructional systems design practice of carefully moving through the process in order to understand the desired outcomes and of designing with close attention to the specific audience.

Transfer of Training after 2000

The new millennium shifted the focus in the research field to comparing the efficacy of instructional methods in the transfer of training. The transfer of training continued to be of importance as did an interest in the return on investment of training. Much work was done at this time on the metrics used to measure the success of training programs. The work of Bersin (2004), Fitz-enz (2002), J. J. Phillips (1997, 2005), and P. P. Phillips (2002) introduced the concept of measuring the transfer of learning and calculating the return on the training investment. With the emphasis shifting to return on investment (ROI), much of the research on methodology focused on the use of specific methods for the transfer of training and ROI. Many examples of this research compared online training results to those of traditional classroom methods.

The military has long been a leader in the design and development of training methods. Many of the training methods identified by Tracey (1971), Laird (1998), and Noe (2008) were introduced by the military as techniques to train and train quickly. The

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structured and efficient delivery of effective training programs is important, but for the military, it is critical. "Whichever branch of the military is in harm's way, the lessons learned on each mission have to be brought back and taught to the soldiers who might follow" (Dolezalek, 2008, p. 44). "The instructional methods, including simulations and games, used by the military are technology-driven, and they are used in conjunction with hands-on methods, such as training for operating the M240 machine gun. Moreover, soldiers are trained in both general skills such as how to "detect and respond to potentially aggressive behavior, self-defense," and specific skills, for example, "vehicle or individual searches and the use of roadblocks" (p. 46). Instructional methods developed to train in these areas include simulations and technology-based games complete with the use of avatars. There is also training in non-lethal strategies. The military is now operating in more non-war environments or what they are calling peace-keeping initiatives, and as a result training goals are different than those for warfare situations. Though the goals are different, the training strategies using technology are the same. There is an increased use of simulations and technology-based games to support the training goals (Dolezalek, 2008).

The military faces many of the same challenges as any global organization whose employees are located all over the world. As a result of this global dispersion, distributed learning is becoming more of a priority for all branches of the armed services. The methods supporting this platform include simulations, games, and hands-on training using live materials. Another area of interest is the work being done by the Air Force in the area of customized learning, which aims to take into account the individual's

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preference for learning modes, thus maximizing the effectiveness of training for each learner (p. 46).

In a 2008 interview, Kathy Thomas, vice president of learning and development for Northrop Grumman Corporation (NGC), a defense contractor headquartered in Los Angeles, California, identified a generational training challenge within the NGC. With more than 120,000 employees, finding a training method that would appeal to four generations of workers was a challenge. To meet this challenge, the NGC is currently working to use a blend of training methods including classroom, case study scenarios, simulations, and peer-to-peer coaching to address competencies needed across business divisions (Dolezalek, 2008).

Noe (2008) suggested that training professionals might find the task of choosing a training method or methods to be difficult simply because there are so many available. His work, much like Tracey's (1972), focused on assisting the practitioner by providing a matrix whereby learning outcomes, learning environments, transfer of training, costs, and effectiveness were correlated with 13 training methods and ranked as having high, medium, or low effectiveness. Noe reported that the methods in the matrix could easily be transferred to online learning systems as instructional methods.

Data are available on the historical development and evolution of the variety of training methods available to training professionals. Monthly articles in training journals share topics of interest with readers. Topics covered in copies of *Training* and *T+D* from September 2008 through February 2009 range through mentoring software, blended learning, training in an uncertain economy, working with colleges and universities, trends, managing change, diversity training, corporate social responsibility, learning and

business strategy, immersive learning, implementing e-learning, emotional intelligence in a diverse workplace, tangible ROI, talent management strategies, global-training strategies, games and simulations, coaching, competency models, and self-directed learning.

Certainly, based on the research, practitioners know that numerous training methods are available. Several authors support the notion of developing a training strategy whereby training professionals would use several different methods to capitalize on the different strengths of each method for facilitating learning transfer (Bell, 1977; Broad, 2005; Newstrom, 1980; Noe, 2008). As noted, though, the research currently available in the professional association annual reports no longer informs the professional community as to which instructional methods are being selected to support the delivery of training content. And, the references reported in this section show incongruence between the predominantly used self-report questionnaires and the annual report data from the two leading practitioner training publications. This calls for a closer examination of the choice of training methods used to support training objectives and training-delivery systems to facilitate transfer of learning and maximize return on investment.

<div align="center">

Current Practices in Training and Development

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One thing is for certain: "It is not business as usual" (Industry Report, 2008, p. 16). The current economic situation has had a definite impact on training in the US. Less training is being delivered—and by different methods. The average time devoted to formal training dropped from 25 hours per learner in 2007 to 17 hours in 2008. Total U.S. training industry spending declined from $58.5 billion in 2007 to $56.2 billion in 2008,

according to *Training*'s Industry Report. The rise of online training during the previous four years has "come to a halt" (p. 16), as organizations switch to on-the-job training, and less costly methods such as coaching (Industry Report, 2008). Further, in 2008 instructor-led-classroom training remained steady at 67% of all training hours delivered, and the proportion of online learning fell for the first time since 2001 (Industry Report, 2008). This reduction in online training may be attributable to cuts in budget and staffing that might have been designated for the sole purpose of designing online training. As previously suggested, this phenomenon may also be attributable in part to having reached the optimal level of training that can be delivered using this delivery system (Industry Report, 2008).

ASTD's Report for 2008 estimated that U.S. organizations spent $134.3 billion on employee learning and development. The amount reflects direct learning expenditures, such as the learning function's staff salaries, administrative learning costs, and non-salary delivery costs. Nearly two-thirds ($83.6 billion) was spent on the internal learning function, and the remainder ($50.7 billion) was allocated to external services. The State of the Industry Report for 2008 did not look the same as *Training*'s Industry Report 2008 data in regard to online and other technology-based delivery systems. *Training*'s Industry Report stated that online learning accounts for nearly one-third of all the training content available. Online learning figures in ASTD's 2008 Annual Report as compared to its 2007 data reflected an increase over the previous year's data by roughly 1.2%, thus showing that online delivery increased from 23.3% to 24.5%. The ASTD Report also stated that all technology-based training increased by 2%. The actual percentage of live instructor-led classroom use for 2008 showed a reduction from 65.3% for 2007 to 61.1%

in 2008. What the ASTD and *Training* reports agreed on is that a great deal of money has

been spent annually on training and development. Additionally, they agreed that the

instructor-led classroom remains the leading delivery system:

> The employee development field is open to new tools and new ideas but it doesn't
> change much,. . . one thing that hasn't changed may prove to be the most
> interesting. . . . that good old standby, classroom training. . . . every year our
> industry report documents the practices and expenditures of real training
> organizations, and every year it's the same. As they have done year after year, no
> matter what new software or tool has been popular, organizations in this year's
> report have said that 70 percent of all of their formal training courses are provided
> in classrooms with live instructors. Out of all of the methods of delivery available,
> classroom training with a live instructor was the method that the most
> organizations said they used often. (Dolezalek, 2005, p. 14)

Some training and development professionals might have been surprised to read

this headline on the cover of *Training*: "Ain't Dead Yet: The Classroom is still King"

(December 2005). It is certainly important that 86.7% of training was being conducted in

the classroom in 2005. Even the 2008 Training and ASTD annual reports suggested that

classroom training has continued to lead as the training-delivery system of choice

(Industry Report, 2008); however, it would be interesting to know which training

methods are being used in the classroom.

Qualitative Methodology

Much of the research in the areas of delivery system and instructional method

selection has been in the form of self-report surveys and questionnaires or the comparison

of two systems in the achievement of outcomes. The current practice of reporting in

Training's and ASTD's annual reports is to identify the delivery systems preferred by

organizations. However, these reports do not share information about which methods are

being used to support the delivery systems selected. And, given the numerous models and

matrices available on which to base selection of a training method and the growing

emphasis placed on training outcomes, not knowing what is actually taking place in the

instructor-led classroom constitutes a significant gap in our knowledge. The quantitative

survey method has been used in most of the research supporting this study. This method

can be efficient but effectiveness is also important. As a profession, the concern for depth

in understanding the nature of training-delivery system choices and the methods that are

being chosen is important as well. A different approach to collecting data on what

delivery systems are used by today's training professionals and their selection of training

methods to support the delivery systems could be useful.

Summary

This review focused on research in training and development and the principles of

ISD, with some attention to the selection of training-delivery systems and supporting

training methods. The use of ISD will impact the effectiveness of training delivery and

the transfer of knowledge. Research shows that the delivery systems used have not

changed in recent years.

Training and development is critical to the continued success of business and

industry, and evaluation is beginning to receive more attention, as is the notion of

measurable outcomes. Considerable time is spent on which topics should be covered in

business and industry training, and billions of dollars are spent annually on affecting that

training. This dissertation focuses on training and development and the selection of

training-delivery systems and training methodology used to support those delivery

systems. It is the aim to close some of the knowledge gaps in regard to questions such as

which delivery systems are being used and why, and which methods are used to support

the delivery system selected.

Chapter 3: Methodology

The purpose of this exploratory study was to determine which of the three training-delivery systems is the most frequently selected among training professionals in Virginia, and which training methods are being used to support the chosen delivery system, in particular the instructor-led-classroom and blended delivery systems. The study also examined the extent to which the trainers' academic background and knowledge of the instructor-led-classroom, blended and online delivery systems contribute to the selection and use of those delivery systems. The study further examined the experience level of the training professionals in an effort to determine if this influences the selection of the instructor-led-classroom, blended and online delivery systems. Additionally, the study explored the selection of the methods used to support these delivery systems. This chapter discusses the methodology of the research.

Research Questions

This study is exploratory in nature. The exploratory design is appropriate in this situation because knowledge is limited regarding the training methods that prevail today. This exploratory study was guided by the following questions:

1. To what extent are instructor-led-classroom, blended, and online training systems being used by trainers in Virginia?

2. Which training methods are being used to support these training-delivery systems?

3. To what extent is the selection of classroom training-delivery systems explained by trainers' "internal factors" (i.e., academic background; knowledge of instructor-led-classroom, blended, and online delivery systems;

understanding of instructional design systems; knowledge of various training methods; and level of training experience)?

4. To what extent is the selection of training-delivery systems explained by trainers' "external factors" (i.e., workplace constraints and requirements, such as time pressure, participants' needs, availability of facilities and equipment, variety of program offerings, number of times a program is to be offered, and program size)?

Research Methodology

Qualitative inquiry is particularly oriented toward exploration, discovery, and the use of inductive logic (Merriam, 1998; Patton, 2002). Inductive analysis begins with specific observations and builds toward general patterns. Qualitative research methodology requires relatively lengthy and intensive periods of fieldwork, which in this research study meant direct and personal contact including face-to-face interviews with training professionals to understand the realities of how they design training programs. The face-to-face interview enabled the researcher to "enter into the other person's perspective" (Patton, 2002). The primary advantage of the face-to-face interviews was the chance to probe for clarifying information.

The researcher used the interview guide approach (Patton, 2002) to collect the research data. The interview guide (Appendix A) provided the framework within which the researcher developed and sequenced the questions, and made decisions about which information to pursue in greater depth. The guide listed the questions to be explored in the course of the interview. It, therefore, ensured that the same basic line of inquiry was

pursued with each person interviewed. Additionally, the interview guide ensured that the best use was made of limited time available in the interview situation.

Selection of the Research Participants

"Qualitative inquiry typically focuses in depth on relatively small samples selected purposefully" (Patton, 2002, p. 230). The logic and power of purposeful sampling lie in selecting "information rich cases" (Patton, p. 230) for in-depth study. The population for this study was training professionals who were active members of ASTD chapters in the Commonwealth of Virginia. Criterion sampling was the sampling strategy, the purpose of which was to review and study cases that met some predetermined criteria. In this situation, the criteria for interviewing training professionals was that (a) they were "active members" of one of the four ASTD chapters in Virginia; (b) they had been employed in the training profession for at least two years; and (c) they were currently designing training programs or supervising the design of training programs. Active members were defined as professionals engaged in ASTD activities by way of attending meetings regularly, and perhaps serving on committees.

"Criterion sampling can only be used where the research subjects have willingly provided contact and criterion information" (Patton, 2002, p. 238). The researcher contacted the vice presidents of communications for each of the four Virginia chapters of ASTD by email (Appendix B) with preliminary details of the study and a request to identify and interview research participants from among ASTD's members. After the email contact with the vice presidents, the researcher followed up with telephone calls to the vice presidents. The purpose of the telephone call was to offer more information about the study and to build social capital with the vice presidents. The researcher asked

each vice president to think about his/her members and identify six who met the criteria outlined. The researcher then requested that the vice president of membership provide the names and email addresses of the professionals identified. Next, the researcher contacted the proposed research participants to determine if they indeed met the criteria as well as to determine if they were willing to participate in the study (Appendix C). The researcher made contact with the potential research participants from each chapter until three research participants from each of the chapters who met the criteria had agreed to participate in a 90-minute interview. Once the initial contact had been made and the research participant had agreed to participate in the study, the researcher sent an email message to schedule a phone call and to schedule an interview (Appendix D).

The Human Subjects Review Board at Virginia Tech was contacted for approval of the research study (see Appendix E). Included in the request for approval was the communication (sent by email) to chapter vice presidents requesting assistance with the selection process. The letter described the nature of the study and indicated when the researcher expected to conduct the interview. A copy of the communication sent to each proposed research participant, based on the contact information provided by the chapter vice president, was also provided. The letter to each proposed research participant stated the nature of the study. Also included in the request for approval was a second communication that provided information about a follow-up telephone call planned to schedule the interview. The electronic communication included a space for the training professional to either agree to participate in the study or to decline the opportunity to participate. Prior to making the decision to participate or decline to participate in the study, each potential research participant received a follow-up phone call from the

researcher in order for the researcher to answer questions and establish a rapport. This information on choice of dates, times, and possible locations for the interview was returned to the researcher by email. The researcher also made a telephone call and sent an email to each potential respondent as a reminder of the approaching scheduled interview.

Data Collection Procedures

To support the face-to-face interview, the researcher used audiotaping. The audiotaping allowed the researcher to record as "fully and fairly as possible" (Patton, 2002, p. 382) each research participant's perspective. However, the researcher supported the data collection method with note-taking. The field notes were descriptive. They were dated and recorded such basic information as where the interview took place and who was present. The notes consisted of key phrases, major points, and key terms. The researcher took notes to help formulate new questions as the interview progressed. After each interview was completed, the researcher read over the notes, seeking insights that might be relevant to future interviews, help locate important quotes during transcription, and serve as a back-up in the event of equipment failure. In addition, a transcriptionist was hired to make a written copy of the audiotapes. The written copies were coded in order to protect the privacy of the training professionals who were interviewed. The data from the transcribed tapes were coded and used in the analysis.

Using a questionnaire format as the long interview guide, the researcher determined the participants' characteristics including age, academic training, number of years in the profession, size of the organization for which they work (number of employees), location of employees, and location of training facilities (internal or

external). The questionnaire was validated through a pilot study to test its inclusiveness and clarity. The pilot study was conducted in Roanoke with a member of ASTD who would have qualified as a research participant. This proved to be a valuable experience in how to more effectively order the questions to build rapport and gather the information-rich cases necessary for a qualitative study.

The following rationale explains in more detail why it was necessary to collect demographic information. The geographic location of the participants might have revealed something inherent in the training departments unique to a particular region in Virginia. The ages and educational backgrounds of the participants might have revealed something about their choices of delivery systems and supporting methods. In particular, certain kinds of educational background might have been associated with varying knowledge levels of instructional design systems theory or choices of training delivery and methods. The data were collected using inductive data analysis to present preliminary findings and to provide additional direction for further research. The inductive analysis involved discovering themes or patterns in the data. "The findings emerge out of the data through the researcher's interaction with the data (Patton, 2002, p. 453). Qualitative analysis is typically inductive in the early stages, especially as coding is developed for the data. Grounded theory emphasizes becoming immersed in the data—being grounded—so that embedded meanings and relationships can emerge. "Once patterns, themes, and/or categories have been established through the inductive analysis, the final, confirmatory state of qualitative analysis may be deductive in testing and affirming the authenticity and appropriateness of the inductive content analysis, including carefully examining deviant cases or data that don't fit the categories developed (p. 454). Such an

analysis permits the researcher to hypothesis about the relationships between the concepts.

Role of the Researcher and Researcher Bias

Neuman (1994) proposed that the qualitative researcher acquire an insider's point of view while maintaining the analytic perspective or distance of an outsider. The researcher, therefore, diligently pursued unbiased research for this study. The words of the participants were presented in a true, unscripted format. The researcher interviewed the selected members of ASTD to ascertain their perspectives, whether positive or negative.

"No matter what style of interviewing you use and no matter how carefully you word questions, all come to naught if you fail to capture the actual words of the person being interviewed" (Patton, p. 380). Audiotaping permitted the researcher to give full attention to the training professional being interviewed. The raw data of the interviews provided the actual quotations spoken by those interviewed. Patton's (2002) suggestions related to audiotaping were followed regarding equipment (and testing of equipment), interview location, diction, and internal and external noise issues. These suggestions were helpful in many ways, including enabling the researcher to assist the transcriber.

Reciprocity

The participants volunteered to participate in this study, which required 60 to 90 minutes of their time. The researcher reasoned that as an alternative to cash, service could "instill a deeper sense of reciprocity" (Patton, 2002, p. 368). In their respective studies, Gubrium and Holstein (2003) and Marshall and Rossman (2006) talked about reciprocity, whereby the researcher decides how to compensate participants for their time. In

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exchange for the participants' time, therefore, this researcher offered to present the study's findings at a meeting of each of the four ASTD chapters.

Ethical Guidelines

In this study, the researcher adhered to four ethical guidelines supported by Bogdan and Biklen (1997). First, the participants' identities were protected in both speech and writing (Appendix F). Second, each participant was informed of the parameters of the research study and each gave written consent, indicating that he/she understood and accepted the terms governing involvement. Third, the participants received information regarding how the audiotapes made of their interviews would be treated: how they would be stored and when they would be destroyed. They were also informed that transcripts would, however, be retained for possible further research purposes. Finally, participants were informed that the data from the interviews would be coded without the assignment of names.

Validity and Reliability

The terms validity and reliability have long been common within the quantitative research model. However, qualitative research should consider validity and reliability from a perspective more aligned with the philosophical assumptions underlying the model (Merriam, 1998; Patton, 2002). The terms validity and reliability might best be replaced with trustworthiness and credibility (Lincoln & Guba, 1986; Merriam, 1998; Patton, 2002). Lincoln and Guba stated it succinctly, suggesting "credibility as an analog to internal validity, transferability as an analog to external validity, dependability as an analog to reliability and confirmability as an analog to objectivity" (p. 76). "For better or worse, the trustworthiness of the data is tied directly to the trustworthiness of the person

who collects and analyzes the data—and his or her competence" (Patton, p. 570); therefore, this researcher worked to capture the words and the meanings behind the words that would bring this study to life. To support the credibility of this research wass to emphasize adherence to all procedures that would minimize investigator bias. The researcher emphasized rigorous and systematic data collection procedures, such as cross-checking and continually refining sources, during the interview process.

Data Analysis Strategies

The researcher anticipated that there would be a large amount of data; this material, therefore, was organized on a continuous basis using Merriam's suggestions for organizing and managing data (p. 164). The first interviews took place beginning in September 2009. The first step was to code the data in a way that would make it easy for the researcher to access any information likely to prove relevant to the research purpose. The second step, suggested by Merriam, was to create a folder containing basic information about each participant. Each folder was labeled with a fictitious name and the code identifying the participant. Each contained copies of the transcribed audiotapes, field notes, and any personal journal entries made by the researcher.

Analyzing the data was an ongoing process (Merriam, 1998; Patton, 2002). The most appropriate method of analyzing data in a qualitative study is to do it "simultaneously with the data collection" (Merriam, 1998, p. 162). As patterns and themes emerge, the researcher, therefore, compared them to existing data and then refined the data to uncover hidden knowledge (Bogdan & Biklen, 1997; Patton, 2002). As the patterns that were uncovered could not be known at the outset, the final product was shaped by the data collected over a period of time and analyzed as a whole.

Immediately after an interview took place, its tape was transcribed and made available to the researcher. The transcription was important in helping the researcher prepare to conduct the next interview. By reading and understanding the interview data, including their semantics, the researcher was better able to talk in pertinent terms with the next research participant, but not alter the intentionality of the original questionnaire guideline. The researcher read each transcript after each interview, and later read them together as a complete set. Through this reading, the researcher identified important topics and refined her work by organizing and interpreting the data through the data-analysis process. The data were integrated into categories for coding. Various software packages for organizing and interpreting the data were considered. However, the researcher chose NVIVO based on the support provided by the Virginia Polytechnic Institute and State University. The software did not analyze the data; it served as a vault for the data. The software did help with capturing data for tables and the direct quotes that are used in the following chapter.

Summary

This chapter described the exploratory nature of this qualitative research study, its purpose of better understanding the practices of training professionals who are members of ASTD's Virginia chapters and the methodology the study used to accomplish that. The use of the face-to-face interview strategy enabled the researcher to probe for a deeper understanding of the actual practices of training departments. By using purposeful criterion sampling, the researcher was able to gather information while minimizing bias. The questionnaire guided the researcher in determining the factors most relevant to the research but structured in a way that helped to uncover factors known only to the

practitioner. The use of audiotapes helped ensure the accuracy and credibility of the study

Chapter 4: Research Findings

Research findings based on the data collected through interviewing the selected research participants are presented in this chapter. The chapter is divided into sections about how the data were generated, the research participants' characteristics, and data analysis, respectively. The data from the 12 interviews are examined in terms of the four research questions, which focus on (a) the extent to which these Virginia trainers are using different kinds of delivery systems; (b) the training methods used to support these systems; (c) the influence of the trainers' "internal factors" on their selection of delivery systems; and (d) the influence of the trainers' "external factors" on the same. The chapter concludes with a summary of the findings.

Data Generation

In this section, the researcher discusses how the study data were generated and provides an analysis of those data. The research participants in this study were all required to meet the following criteria: (a) active members of a Virginia chapter of ASTD; (b) responsible for designing training programs (either as the project leader or a team member); and (c) active in the profession for at least two years. As indicated in Chapter 3, the researcher worked in conjunction with ASTD chapter vice presidents in the Commonwealth of Virginia in order to identify potential research participants.

Characteristics of Research Participants

The researcher conducted 12 individual interviews which included three research participants from each of the four Virginia ASTD chapters. The gender distribution of those interviewed was balanced, with six males and six females. The average age of the research participants was 42, with the youngest aged 29 and the oldest aged 54. The

average number of years in the profession was 14.4, with the length of time ranging from 3 to 30 years. The average number of years as an ASTD member was six; the fewest number of years as an ASTD member was two, and the greatest number was 15.

Of the 12 professionals interviewed, only one had received a formal degree in the field of training and development. Another had chosen training and development because she liked teaching but did not believe she would be successful in academia. All the other research participants had joined the profession as the result of a need within their organizations. All had attended college, two held bachelor's degrees, seven held master's degrees, and one held a Ph.D. The research participants held degrees in the following areas: business (organizational management, organizational leadership, human resources, marketing, management, and business administration [MBA]), communications, counseling, education, English, French, psychology, public administration, and sociology.

At the time of the interviews, the research participants were working for organizations that ranged in size from 187 to 310,000 employees. The number of locations ranged from 10 to 38,000. The types of organizations can be classified into five broad categories, as shown in Table 1.

Table 1

Organization Type and Number of Research Participants Represented

Type of organization	Number of research participants
Sales and distribution	4
Financial	3

Medical	3
Education	1
Energy	1

Data Collection and Analysis

The researcher asked all the research participants to provide a set of answers for each of three training programs that they had designed over the past 12 months; three had designed and implemented fewer than three in the previous 12 months. This reduced the research study's intended scope of 36 designed and delivered program examples to 31 examples.

The focus of this chapter is to detail and discuss the research participants' questionnaire responses. In order to place the research participants' narratives and opinions in a relevant research context, their responses have been referenced with theoretical observations from researchers in this field. As Marshall and Rossman (2006) have observed, if a researcher is confronted by criticism or queries based on retrieved data, past and present research and theory can do much to support a study's credibility.

To best represent the voices of the professionals interviewed, the transcriptions of their audiotapes were subjected to very little editing. Some grammatical editing was done, and repetitions, long pauses, and miscellaneous vocal sounds and words (e.g., *um, uh, ah, well,* and *like*) have been removed for clarity. For confidentiality purposes, the research participants are represented by numeric codes instead of by their real names. Once the research participants had agreed to participate, each was assigned a five-digit code indicating the geographic region of Virginia in which he/she worked, the date the interview took place, and the order in which the interviews took place. Though the dates

the interviews took place and the order in which the research participants were interviewed are of no value for data analysis, this was done to provide a system for easy identification by the researcher. The researcher also considered the possibility that the geographic regions in which the persons worked might be an additional variable to be examined.

Analysis of Findings for the Research Questions

This study was designed to answer the following questions:

1. To what extent are instructor-led-classroom, blended, and online training systems being used by trainers in Virginia?

2. What training methods are being used to support these training-delivery systems?

3. To what extent is the selection of classroom-training delivery systems explained by trainers' "internal factors" (i.e., academic background; knowledge of instructor-led-classroom-, blended-, and online-delivery systems; understanding of instructional design systems; knowledge of various training methods; and level of training experience)?

4. To what extent is the selection of training-delivery systems explained by trainers' "external factors" (i.e., workplace constraints and requirements, such as time pressure, research participants' needs, availability of facilities and equipment, variety of program offerings, number of times a program is to be offered, and program size)?

Selection of Training-Delivery Systems

The first research question asked how extensively instructor-led-classroom, blended, and online training systems are being used by a purposeful sampling of Virginia ASTD members. Responses to questions 4 through 9 of the questionnaire addressed research question 1. During the course of the interview, the research participants were asked to describe three programs that they had designed over the past 12 months and to identify the delivery system chosen for each. In designing the present study, three delivery systems were identified: instructor-led-classroom, blended, and online. Of the 31 programs reviewed in the research project, 14 were instructor led, 10 incorporated a blended delivery system, and seven used an online delivery system. Based on the 12 months preceding the interviews, the research participants reported using an instructor-led-classroom delivery system 46% of the time. As a group, they had used a blended method 32% of the time and an online delivery system 22% of the time.

Training Methods Selected to Support Training-Delivery Systems

The second research question asked which training methods are being used to support the training-delivery systems. Questions 10 and 11 of the interview questionnaire provided information to address research question 2. Training methods were reported as supporting either the instructor-led-classroom, blended, or online system. See Table 2 for a listing of the types of training-delivery systems and training methods that the research participants selected to support the delivery system for each of the 31 programs. A large number of methods were used to support the instructor-led-classroom delivery system; that is, the programs based on this delivery system coupled with complexity of objectives ranged from a minimum of four methods to a maximum of 11. The blended delivery

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system was also supported by a variety of methods based on the complexity of the

program objectives. The shortest blended course with the least complex behavioral

outcomes used six methods, whereas the most complex set of behavioral outcomes

employed 11 methods. The online delivery system was more difficult to categorize. The

simplest course, a ten-minute module, with the goal of conveying information and

confirming a basic understanding of information, used text with a quiz at the conclusion

of the module; this constitutes two methods. The most complex online course used text,

high-level branching logic supported by redirection, demonstrations, video, a podcast, a

final evaluation, and online coaching. The most complex online course is best described

as having using eight methods.

Table 2

Delivery Systems and Supporting Training Methods

Delivery system	Supporting training methods
Instructor-led classroom	Lecture, discussion, DVD, job aid
Instructor-led classroom	Lecture, game, discussion, situational application
Instructor-led classroom	Lecture, demonstration, group work, game, simulation
Instructor-led classroom	Lecture, discussion, demonstration, simulation, coaching
Instructor-led Classroom	Lecture, discussion, demonstration, simulation, job-aid
Instructor-led Classroom	Lecture, site tour, game, team/group work, presentation

Delivery system	Supporting training methods
Instructor-led Classroom	Pre-work, lecture, demonstration, simulation, team/group work
Instructor-led Classroom	Pre-work, assessment, lecture, real-time case, demonstration, coaching
Instructor-led Classroom	Pre-work, lecture, discussion, team/group work, game, role-play
Instructor-led Classroom	Pre-work, lecture, real-time learning project, case study, presentation, mentoring/coaching
Instructor-led classroom	Pre-work, lecture, real-time learning project, case study, presentation, mentoring/coaching
Instructor-led classroom	Lecture, discussion, case study, team activity, teach-back, real-time learning project
Instructor-led classroom	Pre-program work, lecture, discussion, assessment, presentation, case study, development of learning communities, DVD, group/team work
Instructor-led classroom	Pre-work, lecture, discussion, demonstration, presentation, case study, simulation, assessment, coaching, team/group work, competency testing pass/fail at milestones in program
Blended	Annual plan of action, online course, coaching, lecture, discussion, community service–based learning
Blended	Online resource manual, lecturette, discussion, demonstration, technical coaching, on-the-job coaching
Blended	Nomination process, acceptance process, pre-work, lecture, discussion, learning community discussion, real-time project
Blended	Pre-work, online, lecture, case study, discussion, demonstration, presentation, evaluation with pass/fail
Blended	Pre-work, lecture, discussion, demonstration, case study, team/group work, assessment, webinar (meetings and sessions)
Blended	Acceptance criteria, pre-work, online information, lecture, discussion, online discussion, demonstration, group/team work, coaching, real-time learning project

Delivery system	Supporting training methods
Blended	Web-ct, lecture, discussion, project presentation, demonstration, video, DVD, case study, online discussion, evaluation, assessment
Blended	Pre-work, lecture (minimal), online, assessment, video, case study, coaching, podcast, observation, real-time learning project, readings
Blended	Web-ct, lecture, discussion, project, presentation, demonstration, video, DVD, case study, online discussion, evaluation, assessment
Blended	Pre-work, online, goal work with managers, lecture, five-day immersion off site, experiential learning activity, assessment, video clips, case study, action plan for goals, coaching, follow-up webinar
Online	Text with low-level branching, pass/fail
Online	Text, no branching logic, interactive questions, no pass/fail score
Online	Content, text, situation, higher-level branching logic
Online	Online, highly interactive
Online	Interactive, access to 1,000 courses with additional library of resources available
Online	Highly interactive, synchronous, video, podcast, bridge, auditory-based call
Online	Highly interactive, synchronous, video, podcast, bridge auditory-based call

Frequently chosen methods to support instructor-led-classroom delivery system. Within the instructor-led-classroom delivery system, the five most frequently used methods were lecture (14), discussion (9), games and simulations (9), demonstration (8), pre-work (7), team/group work (7). Eight research participants explained that they had used a variety of methods to support program objectives in every instructor-led-

classroom situation; these findings are consistent with data reported in Dolezalek's (2004) article, "The Classroom Ain't Dead Yet." That is, a variety of training methods are being used in the instructor-led classroom; it is not simply the "sage on the stage." In the present study, the research participants used four or more training methods to support the instructor-led-classroom training-delivery system. The research participants discussed their reasons for selecting the methods in their responses to interview questions 10 and 11, which addressed research question 3.

Lecture method. Lecture was selected in 14 instances to support the instructor-led-classroom training method. Silberman (2006) stated that the "lecture is the most efficient and lowest-cost method of transmitting information" (p. 67) to an audience. In addition, Noe (2008) considered the lecture to be "one of the least expensive, least time-consuming ways to present a large amount of information efficiently in an organized manner" (p. 236). Many of the research participants chose the lecture because they saw it as an opportunity to get to know the participants, to present information, to lay the groundwork for the program, and to see whether learning is taking place. A definition of the lecture given by Laird (1985), though, offers a less sanguine picture of the method: "words spoken by the instructor or trainer. Lecture is a verbal symbol medium, offering a relatively passive and unstimulating experience for learning unless the speaker has unusual vocal and rhetorical talent" (p. 133). Silberman's research in active training (2006) reflected the value of a well-planned lecture, which can be an effective tool, if the trainer involves the participants and maximizes their understanding and retention through the use of participative techniques. According to the research participants, the lecture format enables trainers to interact with the participants and to gauge their learning.

Comments illustrating the use of the lecture to present concepts, enhance concepts, and

connect with participants follow:

> I think I am too much of a university professor (past profession) at heart not to use lecture, but we really tried to limit it. My partner who is in Belgium, she really doesn't like lecture at all. So we try to limit as much as possible, but when we are talking about certain concepts, you have to introduce them to some theory. (Research Participant #12302)

> Lecture does not mean just talking. We supplement the lecture when needed. We have information that must be covered for the audience during this program. Our executive director does meet with the participants to deliver his message, again using the lecture method. We do encourage discussion. The instructor facilitates by asking questions and responding to questions asked by the participants. (Research Participant #10101)

> The lecture format allows for interruptions. I try to use humor. I make everything funny because I think if they laugh with you, they trust you. They have your buy-in. You know you have their buy-in, and you know, you're believable, which I am. I am very animated. They want it animated. I want them engaged, talking, and discussing. I allow them to bring things to the training session which represent different concepts, and this opens a whole new realm of the classroom. I don't want anyone to ever walk out of one of my training classes and say that was boring; I am never going back. I'm genuinely all about where I work and honestly believe in what we do and the people we help. (Research Participant #90401)

> Even the research participants who offered harsh criticism of this method

admitted that they used "a little bit" of lecture in their programs. Lectures were used to

redirect or make necessary corrections in the direction the learner should be going. In

addition, some research participants noted that this method allows them to redirect a

course quickly by simply clarifying and repeating concepts and allowing enough time for

the trainees to respond:

> I mean there's very little bit of lecture. Just there's presenting of a direction so, okay, now we're going to try to do this. Here, remember the review from the module? Remember when we talked about this? What questions do you have about it? Does this ring true to you? We get somebody else to lead that part of the session to actually get up on a white board and do it, and then we do course corrections. (Research Participant #11402)

Discussion method. Group discussion was the method most frequently credited with enhancing communications, building relationships, and improving understanding of concepts. In considering discussion as a training method, Laird (1985) stated that it "focus[es] on and may even structure conversations between trainees, aimed at specific learning objectives" (p. 141). Again, the research participants who reported using discussion as a method to support the instructor-led-classroom delivery system shared insights that align with Laird's definition. Eight research participants reported using discussion in their programs, and a total of nine programs used discussion in some form in the instructor-led classroom setting. The following comments share insights regarding how discussion supports program objectives:

> Group discussion is important, as we are teaching managers to think and reason. We want the participants to learn early on to draw upon each other as resources and build a learning community and resource network. We want them to be able to discuss, debate, and learn to reason through challenges.
> (Research Participant #11402)

> I use discussion in our call center training. We want the participants to learn to rely on each other as a team to best serve the customer. We want them to learn to think through the service process. Discussion in small groups is an effective way for us to achieve this. (Research Participant #10202)

> Discussion is very interactive. Things crop up as a result of content. They have opinions, and they need to learn how to be respectful and all of that. Sometimes I will instigate a debate or discussion. I have my game plan, but I want them to deal with real issues in a professional manner. The best way to achieve this is to introduce this to them in the training setting. It is safe. When you teach adults, it is important to learn how to address the issues they will be faced with in the workplace. You should not try to squelch debate or discussion. Your role becomes that of the facilitator. (Research Participant #10102)

Games/simulation method. Previous research supports using simulations to introduce the learner to the components of a system without causing harm to the actual system. For example, Broad's work (2005) suggested that simulations affect learning

because they enable the participant to identify the relationship between components of a system, and how to control these relationships. Five research participants reported using games and simulations nine times, such that games and simulations featured in a total of eight programs. The research participants who reported using simulations made comments that aligned their views with those expressed in the work of Broad (2005), Tracey (1971), and Noe (2008). The following comments support the use of simulations in the described programs:

> We use EMO, which is end of the month. This is actually a simulation of an actual account. These are account figures from thirty days ago. The participants cannot do any harm to accounts which are 30 days old. When I have a class of ten, I've got to be pacing like a military sergeant, but the screens on the computers are the important thing because I can't have them messing up the customer. I have to make certain that they realize that this is the most important thing you will do all day every day. I coach the trainees through multiple situations. Then we randomly select situations for the trainees to work through. (Research Participant #90401)

> We introduced an LMS [a learning management system is an electronic system that monitors completion of training programs] to our staff. It was a brand-new system, and it was a bit of a challenge. I had to learn the system. To introduce the system to the employees and supervisors, I used the analogy of shopping because so many people shop online today. I taught the system in a classroom environment using a fictitious person named Happy Learner. Happy Learner shopped for classes which were required for their job title and then shopped for classes which might be beneficial or optional. I taught 30 participants at a time using a simulation. Once we were able to go through the various levels of training classes available, we were able to move on to additional enhancements and the actual system. This was certainly a how-to session. (Research Participant #10101)

> Our organization was undergoing a major expansion; we needed to develop a specialized sales position for small operations bringing in $1 million in sales annually. We opened roughly 200 of these operations a year. We identified the top sales items (20) in a regular operation. We rented space and created a simulated operation to train the 200 new sales managers for this new operation. We had inventory in the simulated operation as well as computers with the actual sales system loaded. The sales matrix was available as well. All of the training took place in this setting. Once the participants went through the eight weeks of training related to product and customer service, they were ready to move on to a

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live operation to work with a coach before being assigned to their own location. (Research Participant #10103)

Call center training lends itself to the use of simulations. This organization had a mixture of people talking on the phone and processing. We found this to be not as productive. There was a need to separate the two tasks and create a center where calls were answered. Most of those in the training had no contact call center experience. They also lacked technical skills. We used the actual system which the participants would be using once they were on the phones by themselves. We covered content in an instructor-led classroom, but moved the participants to the phones and computer system as soon as possible. This enabled them to see the job expectations realistically. (Research Participant #10202).

Demonstration method. Another frequently selected method to support the instructor-led-classroom delivery system was demonstration. Laird's (1985) work in defining training methods indicates that demonstration allows learners to do something instead of just observing. Behavior modeling could also fall into this category of demonstration; Laird defined it as "a method that demonstrates the ideal enactment of a desired behavior and allows learners to discover what actions and standards are expected of them" (p. 145). The research participants who used behavior modeling and demonstration reported that these methods were important in achieving program goals. In addition, some of the research participants referenced the concept of the teach-back, which is another way of demonstrating command of a subject area. Some of the research participants noted that they make a practice of introducing a concept and assigning an individual or a team to create a presentation, case, or role-play to demonstrate proficiency in a topic. In one case, the behavior modeling/demonstration was documented, and the

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trainees were required to pass a proficiency test. Six of the research participants indicated

that they used the demonstration method to support objectives or organizational goals.

This method was used a total of seven times to support instructor-led-classroom training:

> It is an annual requirement for our entire staff that they be able to de-escalate situations with our clients who are in crisis. This course requires that the staff actually perform the steps in the de-escalation process. We certainly want to verbally de-escalate a client; but, if necessary, the course provides proven techniques to handle the situation through physical restraint mechanisms, if it's necessary as a last resort. We use demonstration as a method to teach the process. We also expect the participants to demonstrate and pass a proficiency test on the techniques. The instructor demonstrates and then monitors as the participants practice on each other. This is documented. (Research Participant #10101)

> In the classroom, the structure is that we work on a group project to demonstrate how to design the business process. We demonstrate how the software can be used to automate the process. (Research Participant #11402)

> We used demonstrations. There was a lot of, we called it putting it all together; so there was an opportunity for people to take what they learned and then we kind of did real-life situations or some, I guess, role plays. So, we allowed people to take all they had learned and then actually go through a simulation. This felt like the best method because people were going to have to perform these tasks. So demonstration was the best way to observe to see if the learning had been transferred. (Research Participant #10202)

Pre-work method. In Silberman's (2006) view, a training program must be built

on an effective sequence if it is to be successful, it must present concepts and introduce

exercises in a logical and effective way. One of the first concepts for understanding

sequencing is that of building interest and introducing new content before progressing to

the next level. And, it should be noted that training professionals face the challenge of

balancing time constraints with the amount of content that has to be covered. It is often

important to make certain that those participating in a given program already have a

shared understanding of some of the key concepts used in the training. This can be

achieved by using pre-work, which means the trainees are asked to complete an

assignment based on material sent to them before the program begins. Intended to prepare participants for the training, pre-work generally consists of readings in the form of texts, articles, cases, or stories. Though not identified in the previous chapters of this study, this method is used to build a common language and to facilitate an understanding of the concepts to be discussed; it, thereby, prepares the trainees for the upcoming learning experience. Five research participants used pre-work to introduce concepts, and overall the method was used a total of seven times to support the instructor-led-classroom delivery model. Comments from three research participants follow:

> I sent (electronically and hard copy) some information to all of the supervisors to read prior to the class, which they could look at. It was more of a PowerPoint presentation, though I encouraged them to look at it prior to coming to class to kind of give them some ideas and then we just kind of reinforced it.
> (Research Participant #10101)

> The pre-learning for this management development program is online. You go online and learn the definition of what business process is; it is determined at that time whether you are a candidate for the training program. We ask you some questions about the type of project you are going to be doing, how long it is going to take. We confirm that you're an appropriate audience. We start building common language, just some basic knowledge bits. We go through some baseline principles, and then we confirm that it's a need of yours. So, tell us the struggles you are having or why you think that documented business process, yours in particular, would add value to your organization or to the broader company. Have you even thought through that? And, then we have you identify what your project is and start giving us, as your coach some details into bits that we can start using. So that is the pre-learning. You get through that, and then you come to a classroom. (Research Participant #11402)

> We have pre-work online for our leadership development program. This is mainly some work to get them reading some cases. There are several assessments that they take. We want these managers to begin to have a common language. This pre-work supports the instructor-led portion of the program.
> (Research Participant #11301)

> *Team/group method.* Three of the research participants used teamwork or group

work to achieve their program goals; this method was used in a total of seven programs.

Noe's research identified group-building as a training method to improve team or group effectiveness. With this method, trainees share ideas and experiences, build group experiences, build group identity, understand group dynamics and those of interpersonal relationships, and get to know their own individual strengths and weaknesses as well as those of the group. These types of methods, which the research participants reported using, often included building relationships and communications through the use of cases, projects, experiential-based learning exercises, problem-solving, and simulations.

Research participants were often passionate about group work and/or team work. In discussing this kind of work, they often became animated and expressive, as their responses suggest. The research participants saw team work as a method to enable the audience to use knowledge and skills to achieve a common goal:

> I would give the participants work, assignments, cases, situations they might experience in their jobs. They would work in teams to find a solution based upon the previous lecture. This was used in anti-trust, human resources, or customer service issues. (Research Participant #10103)

Experiential-learning activities, as a form of group work, team building, or team problem-solving, became quite popular in the 1990s according to Broad (2005). This facilitator-led form of instruction moves participants through the learning cycle from experience to application. It is a method that can be categorized as teamwork or group work. It continues to be popular, especially for building teams and improving communication. Two of the research participants used experiential learning specifically as group exercise in order to achieve program goals:

> These folks are either officers or are getting ready to be nominated as officers, and what we noticed is oftentimes they had worked their way up through the ranks. They had early management training, maybe mid-level management training, but their executive training seemed to not be an area of strength for them. Two of the biggest units are experiential. We actually take them out on the

Schuylkill River with Mr. […], who is a former Olympic rower, and they do a unit on team building where they actually get into crews and row on the river. There is another module that we partner with an outdoor education group. This exercise has markers hidden across the campus, and our teams of participants use GPS units to locate the markers. We toss in a few little changes and some challenges along the way. There's a community goal where all the teams have made a commitment to the overall group to go get certain markers for points and then there are individual team goals. We switch things up about halfway through just to see if the competitive nature of the group will destroy their desire to meet the community goals for the sake of their own team goals and then within the small groups. Usually, the teams are five to seven people. There are all kinds of fascinating inter-team dynamics that come up. So, we debrief it on multiple levels: on a community level, on an inter-team level, and an intra-team level. We wanted this program to build internal networking. (Research Participant #11301)

Team-building activities were used in the leadership development course. We wanted to introduce these new managers from the other organization to our culture and competencies. These activities took the participants through activities as a team and individual. These activities required the participants to plan, organize, work together to achieve activity goals. We spent a great deal of time in debriefing. We wanted to build communications and networking. (Research Participant #10202)

Frequently selected methods to support the blended delivery system. The blended delivery model is a hybrid of the instructor-led-classroom and online training. A close examination of the training methods used to support the blended model showed that the lecture, discussion, demonstration, pre-work, and coaching in that order were the most frequently selected. In fact, all of these were selected five times or more. With the exception of coaching, all these methods and the support for them are discussed in the previous section. Coaching was used four times to support the instructor-led-classroom delivery method, but it was used five times in the ten blended delivery systems.

Coaching method. Coaching can be categorized as behavior modeling, and it is growing in popularity within organizations today. This statement is supported by the growing number of organizations seeking customized coaching certifications, budget

reductions which support the use of internal talent to coach emerging leaders, and the

increased use of 360 assessments which require follow-up with coaches. The increase in

coaching to support the blended method could be a result of supporting the transfer of

learning by drawing on interactions between trainers and trainees. Some of the research

participants indicated that they used coaching at senior levels of development. And,

though, coaching was not among the methods defined in Chapter 2 of this study, the

anticipated outcomes of using it are very similar to those of behavior modeling. Coaching

is designed to encourage employees to be accountable, resulting in improved skills and

increased productivity through firsthand experience and measurements of the training's

impact. Four of the 12 participants built coaching into their training programs and shared

their rationales for using this method and 50% of the blended programs used this method.

Several of the participants provided support for the use of coaching in building

accountability and responsibility for learning:

> The coaches, like me, work with the participants to develop the business design process for their project. The coaches then will talk a little bit about a principle, work on the group project as a whole group, and then they split out and work on their individual projects. One of the things we are working on this year is not teaching the technology, but teaching the thought process. We then introduce the software package, which will make it consistent from one group to the next. We then say, okay guys, this is just the beginning, you now have two more months in front of you where I as your coach are going to be touching base with you every two weeks to see what progress you are making. (Research Participant #11402)

> In this unique sales-position training program, which was 12 weeks in length, it was important that the participants be able to demonstrate their proficiency. During the final two weeks of the program, we would send them to the field. So they were supposed to work with or be coached by the branch manager or branch trainer and then follow up with us. This branch manager or branch trainer was to serve a coach for the final two weeks of the program. This did not always work; if all hell broke loose, they would just kind of get out there and thrown to the wolves. If the system worked, coaching was very effective.
> (Research Participant #10103)

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For the next iteration of the program, we've selected coaches from people who were great at business design process. They provide a very good, concrete feedback in the design process. (Research Participant #11402)

Coaching method is an effective way to impart knowledge for call center training. I would often sit with the participant, listen in on a call, and coach them through a call. I could teach the thought process of what was being asked, where the resources were located to help this customer, and provide feedback to the participant. (Research Participant #10202)

Frequently selected methods to support the online delivery system. Successful online training depends on sound instructional design principles according to Driscoll (1998) and O'Driscoll (2008). Two of the seven online programs used the most sophisticated technology available to support their objectives. One of the programs identified methods such as Web 2 technologies, including video and podcasting, to achieve objectives. Another program was highly interactive with access to 1,000 courses, including sales, bookkeeping, and customer service, supported by an organizational library. The other five online courses provided text with mid- to low-level branching logic. All seven courses required participants to register through a learning management system (LMS), a technology platform that automates the administration, development, and delivery of an organization's training programs. According to Noe (2008), "the major reason companies adopt an LMS is to centralize management activities, track regulatory compliance, measure training usage, and measure employee performance" (p. 300). The seven online courses described in this study focused on mandatory or compliance training. The reasons the research participants offered for selecting online delivery directly support the published research. That is, they noted that the speed at which large numbers of employees were trained was important for their online programs. One also noted that online training provides a way of tracking participants' progress. On all these

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points, the research participants agreed with Noe (2008), who observed that online instruction can be an effective tool for introducing change by a mandatory completion date, which implies the importance of speed, and for monitoring a training program's impact on participants. This further supports information shared in the 2008 *Training* State of the Industry Report*,* which reported that more compliance training is being conducted using the online delivery system. In each of the seven cases, the intent was to monitor completion dates, and two also monitored the actual implementation of knowledge. The implementation of knowledge was achieved through an online coach whose responsibilities were eventually transferred to an internal supervisor.

Internal Factors that Influence Trainers' Selection of Delivery Systems

The third research question asked to what extent the selection of classroom-training delivery systems can be explained by trainers' internal factors. The internal factors examined were academic background, knowledge of the three delivery systems, knowledge of instructional systems design, knowledge of methods, and training experience.

Educational experience and training background (internal factors). To gain a better understanding of how the research participants entered the field of training and development, all were asked to describe their personal career paths. This question helped to establish the extent to which internal factors impacted trainers' selections of delivery systems. Two career paths emerged: the trainer had (a) selected the profession, (b) worked as a subject matter expert and received a promotion to a training position, and/or held a position that had evolved to include training responsibilities. The research participants had very different backgrounds, and only two of them had chosen training

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and development as a profession and prepared accordingly. Their stories of identifying

the profession and preparing are below:

> I started teaching swimming at 12. I became a certified instructor. I continued with the YMCA. I helped re-design some of the Red Cross courses and some of the Y courses. So that is when I started learning about this instructional design approach. In high school, I was fascinated with learning and different forms of evaluation. I was an early adopter of Apple computers. I ended up getting my education in non-profit management, but I found training and development was my passion. (Research Participant #11402)

> Teaching is a passion of mine, but I really do like the business world. I finished my master's, and then I just started. I took my first training job, and then I was able to start going through some of the facilitation courses, certifications, e-learning stuff, and eventually it just stuck. I enjoy my role in training; it allows me to dabble in a lot of things. (Research Participant #10202)

Many of the subjects detailed a more circuitous approach to their careers in the

training profession. In discussing their career choice, all expressed satisfaction and

enthusiasm, and many even used the word *passion*. Ten research participants shared

stories about entering the training profession having been subject matter experts or

having held positions that evolved to include training responsibilities.

> I started running classes for all of the faculty members about all of the technology and what it is and what it could do, and things of that nature. I developed a reputation for being able to teach technology. I was asked to start teaching for a local company in their training department. I became a professional trainer. (Research Participant #12302)

> I got into training and development, kind of it fell into my lap more or less. I was asked to start coaching folks around me that needed help and new folks that were coming so they had me on hand as a coach and then moved me into a trainer position at some point in time. That is kind of how I entered training. It's kind of I didn't intend to get into this profession, but it really found me. (Research Participant #10203)

> I don't have a pat answer for you, but my first job was with a consulting firm. I started on their mainframe computer consulting side. We would go into an organization and help set up large-scale systems for clients and then a branch of that division would train the clients on how to use the system, write

documentation, deliver a train the trainer, and the implementation side. (Research Participant #11301)

Professional development and knowledge of the profession (internal factors).

To provide additional information for question 3, which focuses on the internal factors that may affect the selection of a delivery system and training methods, the research participants were asked about their professional development. All indicated that they found their membership in ASTD to be beneficial because of the meetings, committee participation, conferences, monthly publications, educational materials, and online support. This information is summarized in Table 3.

Table 3

Summary of Research Participants' Engagement in ASTD

Subjects	ASTD membership in years	ASTD programs/meetings	ASTD conferences	ASTD publications	ASTD online support
10202	15	Frequently	Yes	Yes, everything	Yes
11301	14	Yes	Yes	Magazine, books, info line	Yes
10103	10	Regularly	State usually	Magazine, info line, books	Yes
10101	10	Yes, frequently	Yes	Magazine, books, info line	Yes
11402	5	Frequently	State and national	Magazine, books, info line	No

Subjects	ASTD membership in years	ASTD programs/meetings	ASTD conferences	ASTD publications	ASTD online support
11303	5	Yes	Yes	Magazine, books, info line	Yes
12403	5	When possible	No	Magazine, books, info line	I should do more
10203	4	Frequently	Occasionally, if they are close	Yes: magazine, books, info line	Yes
12302	2	Occasionally	No	Magazine, books, info line	Yes
10102	2	Regularly	State	Magazine, info line, books, white papers	Yes
90401	2	Regularly	No	Magazine, books, info line	Not as much as I should
10201	1, Not renewing	Rarely	No	Magazine, books, info line	No

Quoted below are research participants' comments on their approaches to professional development and staying current with information, to which they attribute their success in and ability to grow in the profession:

> Outside of work, I belong to ASTD. It is probably one of the only things that I have time to do. To stay on top of technology, I'm trying to improve myself by enrolling in certain classes that I can find that fit into my daily life and not miss

out on anything at home. Before each meeting, I try to look at the subject before I go. And before I register, I say who in my organization would benefit from this as well? I do receive *T&D*. I do get ideas. Now of course, when it comes in I'm usually reading it a week and a half after it comes in, but I do get ideas from there. Especially now, I am looking at how to save money. We are a department of two, but budget is important. (Research Participant #90401)

Besides attending meetings, I read the *T&D* publications. I am not always on top of my reading. I put them aside until I have some time to really focus on the articles. (Research Participant #11402)

I do a lot of reading. I've got *Top Management* magazine. I read *Chief Learning Officer,* a lot of periodicals, a lot of Internet stuff, webinars, you know, and I don't do probably as much personal development as I should. I'll just look for things that catch my eye. (Research Participant #10201)

My ASTD membership is part of my professional development. I feel like it keeps me sharp. It keeps me in touch with what is going on. I don't get to read the *T&D* magazine articles as timely as I'd like. (Research Participant #10202)

I belong to ASTD and I am active, but I do not attend every month. I do attend the national conference, but not every year. I learned a great deal about online learning through one of their workshops. I do receive their publications. (Research Participant #11303)

One research participant had decided not to renew his ASTD membership. His reason was that he did not have time to participate in his chapter's events.

Knowledge of instructional systems design and impact on method selection.

To gain insight into the research participants' understanding of the instructional design process and to support research question 3, each research participant was asked, "Do you utilize instructional systems design?" The one internal factor which did have an impact was the understanding of instructional systems design (ISD).

Some of those interviewed said they used a particular model; others said they used no particular model, but all indicated they chose the delivery system and methods based upon program objectives and audience needs. Most knew that instruction should occur in a systematic manner which supports this as a driver in the selection of the

delivery system and training methods. ISD grew out of the systems approach to training and development used by the military during World War II. Its roots are in general systems theory (GST) (Bertalanffy, 1968; Briggs, Gustafson, & Tillman, 1991; Rothwell & Kazanas, 1998; Seels & Glasgow, 1992; Tracey, 1971), an interdisciplinary field of science and the study of complex systems in nature, society, and science. GST is based on the premise that learning should not occur in a haphazard manner; instead, learning should take place in accordance with orderly processes, and its outcomes should be measurable.

ISD is also said to be based on open systems theory, which is a derivative of GST. An open system is one that continuously interacts with its environment; it "receives inputs from the environment, transforms them through operations within the system, submits outputs to the environment, and receives feedback indicating how well these functions are carried out" (Rothwell & Kazanas, 1998, p. 10). Open systems theory is important to training and development for two reasons. First, it enables training and development professionals to recognize the critical importance of adapting to changes in the environment and even anticipating them; after all, organizational and individual effectiveness both depend on how well a company's products and/or services match environmental demands. This reason is particularly important today from an organizational standpoint, a rapidly changing business environment created by a global marketplace and technological innovation has resulted in the need for a workforce that can deal with complexity, ambiguity, and continuous change.

Second, training and development professionals understand that any corrective action used to change any element of a system will affect other elements within that

system (Briggs, Gustafson, & Tillman, 1991; Richey, 1995; Seels & Glasgow, 1990; Tracy, 1971). The moment the audience changes from fifty to sixty year olds to an audience of 27 year olds; the delivery system must adjust and the methods must similarly adjust. The evaluation could change; however, for the purposes of this study, the delivery systems and methods would certainly require reexamination.

When instructional design is governed by the systems approach, the premises of the general and open systems theories form the foundation of the objectives, methods, and evaluation measures. Each of these elements must be considered in the design, and each element must be congruent with the others in order to achieve a design that is coherent. These three elements cannot be considered independently; a change in any one element will affect the other two. Instructional systems design (ISD) for this study is defined as a research-based methodological approach to the planning of instruction with attention to the consistency and compatibility of technical knowledge at each stage of design. Knowledge of ISD could be expected to contribute to some of the choices made in the selection of delivery systems and training methods. Six of the research participants indicated that they used ISD as a tool to design their programs; in particular, they identified the ADDIE (analysis, design, development, implementation, and evaluation) model. The other six research participants indicated that they did not use ISD; instead, they counted on instincts, experience, and/or learning styles to guide them in the design process.

The research participants' responses provided insights regarding their knowledge and understanding of instructional systems design and models. Those using an instructional design model often identified ADDIE as their model of choice.

I use the ADDIE model to design all of my courses. And when I teach HR, they do a training plan using the ADDIE model. I need to do a needs assessment and, therefore, if training is what I determine to be the solution, this is how I'd build a training plan, and I'm really pleased with it. (Research Participant #10102)

I support the general principles of ADDIE for course development, but would not say I use it all of the time. (Research Participant #12403)

I use ADDIE a lot. We don't have as much analysis here as we would like because again … we're just now becoming a learning organization, but [we] definitely follow ADDIE as far as design and development.
(Research Participant #10203)

I have used multiple models, but when I started I used the ADDIE model; to start off with a needs assessment, to do a design, and then to do your development and then to pilot it and make revisions. (Research Participant #11301)

I was telling my training buddies that came through the ranks with me, we did this ADDIE, we did it, and we just didn't have the name for it. I feel that designing a comprehensive program that hits the mark is the analysis that gets you there. So, I am really a big proponent of proper analysis so that, that to me is the key. (Research Participant #10202)

I think that as training professional, I will always kind of bucket the work around ADDIE, you know, and think of it in those terms. (Research Participant #11402)

The primary reasons for not using ISD were insufficient understanding of the process, insufficient knowledge/ability to apply the process, and a view of the process as inflexible. The following responses explain why research participants chose not to use an instructional systems design model:

I probably do not use ISD in a structured format. I went to the University of Michigan to learn instructional design for three days. It was the most convoluted thing I had ever been through and they were breaking it down so basic that to me it did not make much sense. (Research Participant #10103)

I do not use instructional system design. That is where I wish that we [the organization] had more structure. I have fallen into this [profession] by mistake and liked it enough to keep going but have not taken the time to be formally educated. (Research Participant #10201)

I don't really have any familiarity with any particular instructional design model. I've learned just through experience. (Research Participant #11303)

I would not say there is a formal model I subscribe to. I try to vary the format
depending upon the audience to understand what it is that's trying to be achieved.
(Research Participant #12302)

**External Factors that Influence Trainers' Selections of Delivery Systems and
Methodology**

The final question, research question 4, asked to what extent the selection of

training-delivery systems can be explained by the trainer's external factors (workplace

constraints and requirements such as time pressure, participants' needs, availability of

facilities and equipment, variety of program offerings, number of times a program was to

be offered, and program size). Questions 4, 5, 6, 7, 8, 9, 10, and 11 from the interview

questionnaire all relate to this research question.

In designing training programs, the research participants indicated that they are

more focused on external than internal factors in executing program design strategies.

The responses reveal a close connection between selection of delivery systems and

program objectives, which can be categorized as themes: engagement of the audience,

geographic dispersion of the audience and scalability; speed of roll-out; budget, and

mandatory or compliance training. These themes are discussed next in reference to the

research participants' comments.

Engagement of the audience. To engage the audience is to contribute to the

transfer of learning and to help change given behaviors. Many of the research participants

touched on these points, but in particular the comment quoted next shows that the

research participant was very purposeful in selecting her delivery system and very clear

about how it engaged her learners in support of the program objectives:

A deficiency was identified in one of our locations related to technical writing
skills. The learners were very diverse in their educational backgrounds. When I
first created the curriculum outline, it was suggested that I go back to ground zero.

I really tried to set a baseline review session for the initial module. This would create a foundation, and everyone would have the same background. This particular group of learners was not as savvy on the computer, and also I think that the discussion element, we wanted to design a course that didn't make anyone feel stupid. We decided on an instructor-led approach because we really wanted a high touch, high feel for this program. (Research Participant #11301)

The following respondents were very specific about the engagement of their

learners in their respective courses and the delivery system that was selected.

Engagement, in these stories, translates to interaction between the instructor and their

audience:

The CFO wanted the program to be instructor-led classroom. He wanted experiential learning specifically. It was facilitated by me, but it was designed to facilitate communications between the participants. This process enabled us to identify developmental issues among our department leaders. We were able to engage this group of very different leaders to begin to see themselves as members of the same team. This awareness of organizational issues was very rewarding. We are a better organization as a result of this program.
(Research Participant #10203)

We were also trying to build a little bit more teamwork, interaction, and communication around leadership development. We felt that if they were in groups together, then perhaps that would also enhance the leadership piece. That is why we chose instructor led. (Research Participant #11301)

Because our headquarters staff is growing, we conduct an overview of headquarters. This program is instructor-led classroom, but it is highly interactive. We engage the participants by sending them to different departments to have 10-minute conversations. They return to the session and share information with the rest of the participants. We cover the organizational chart and allow time for questions and provide feedback. (Research Participant #11303)

The purpose of our orientation program is to welcome people to the agency and to get the basic information out that is necessary. We have chosen to do this program instructor-led classroom. It is really the first interaction that we have with new employees, and it kind of gives them a face with the information. It is about creating a good first impression. (Research Participant #10101)

Our leadership development program is somewhat of an immersion program, if you will. The bulk of this program is instructor-led classroom because another objective that we really wanted for this program is to build internal networking. Instructor-led allowed us to make adjustments easily to the curriculum. We knew

it had to be interactive, we knew there had to be time for reflection, plenty of time for discussion. (Research Participant #11301)

In the following comments, the research participants use the ideas of building relationships and reaching an audience as a way of talking about the importance of engaging participants in the learning process:

> Our organization (quite large) acquired a smaller company, so there were a lot of cultural changes that needed to be made. We were a competency-based organization. It was unclear if their competencies did align or if they even had competencies. We targeted anyone in a leadership position from the smaller company, managers and supervisors. We chose to deliver this using instructor-led classroom. We had the expertise in-house to deliver. We wanted to build relationships with these new leaders. We wanted them to understand the culture, values, and how the content would help them in their positions.
> (Research Participant #10202)

> One of the reasons I used blended was I like to try to reach people in different ways. I am one of those learners that even as an adult who is learning, I really don't care for trivial, made-up, positioned role play. You know pretend you're the owner of a salt company and you make salt. And I just never, never could get into it. It was too contrived for me. And as a trainer myself, I try not to do this to others. I want to make things as real for them as I can. I sometimes reach out to them using videos or a case study which relates to them. If I videotape them while they are delivering a team meeting, this becomes instruction by itself. When replayed, one of the managers asked, do I really do that? Blended allows me to incorporate learning styles and adult-learning concepts using both instructor-led and online technology, with consideration of their time.
> (Research Participant #12302)

> To teach a communications course, it requires practice and skills. This is a difference in online and instructor-led. I am not going to allow my kids to take driver's education online. It, like the communications course, requires practice and skills. (Research Participant #11402)

Geographic dispersion and capacity. Although geographic dispersion and capacity are not necessarily related, it is still the case that larger organizations with multiple locations need to deliver programs to multiple dispersed audiences, and that using only a few trainers can pose a challenge to capacity. The research participants noted that they faced challenges related to the geographic dispersion of participants, the

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number of participants they had to reach with their programs and a reduced number of

training staff members to cover the numbers and locations:

> We did a combination of instructor-led classroom and podcasting for a group of international managers who are located in five different European countries, which would mean blended. We continue to coach these managers following the instructor-led classroom using Skype. We are trying to reinforce and support the behavioral changes that were desired, and so a one-time intervention so the audience shall have knowledge does not work. So we are having ongoing coaching sessions with them. Most of these are distance-based because I am in the US and they are in Europe. (Research Participant #12302)

> With a blended model, we were able to account for the multiple geographic locations. We wanted to be able to provide a distribution method, if you will, that will permit the audience to access information as needed and on a schedule, if they wanted. We could have online meetings, so that we could record things and doing like Adobe connect and record it once with a couple of participants. And then record it and share Adobe connect with the other participants, if they were unable to participate. (Research Participant #12302)

> Our work locations are across the US and global. Online is the best way to meet all of our employees in terms of time and money. The easiest way to get the training across the organization would be to do it online, and also this course has to be refreshed each year. (Research Participant #11303)

> We were also, of course, expanding, and everything was getting spread out and also to try to have training available to staff 24 hours a day, OK? And so our main driving force so that staff would not have to travel to the training centers and things like that was to have it available to people. We operate 24 hours a day anyway, and so to give staff a chance to be able to do training and more efficiently, that was our main driving force behind that.
> (Research Participant #10101)

> Online works for getting the general information out to large audiences simultaneously. This delivery system enables the organization to deliver this program to approximately 15,000 employees annually without travel or missing significant amounts of time from work. (Research Participant #12403)

> This was an online piece because of the geographic dispersion of our 3,000 locations. We had the infrastructure in place to do it rapidly, so there is e-learning philosophy in place, a laptop in every store that people are learning to go to for quick learning. (Research Participant #11402)

> We have approximately 4,200 employees. It is impossible to bring all employees to corporate headquarters for training. We partnered with a vendor to create our

online programs. The vendor programs were the basics, and we have developed a bunch of in-house stuff specific to our organization. We have approximately 1,000 courses. These courses are available for all employees to enhance and build their skill sets. Right now, 100 manager trainees could be taking a course on customer service. (Research Participant #10201)

In Table 4, the delivery-system choices as they relate to the external factor size of the class audience or capacity are detailed. When information is delivered to groups of 3–25, the delivery system of choice is instructor-led classroom or blended; for groups of 25–70, blended is preferred; and for groups of 70 of more, the delivery systems of choice are blended or online.

Table 4

Delivery System Use According to Audience Size

Audience size	Delivery system and number of times selected
3–25 participants	Instructor-led classroom: 12 courses Blended: 5 courses Online: 0 courses
25–70 participants	Instructor-led classroom: 2 courses Blended: 3 courses Online: 1 course
70–3,000 participants	Instructor-led classroom: 0 courses Blended: 2 courses Online: 6 courses

Speed of rollout and delivery. The research participants who had used online in some of their training programs often reported that it had been selected because of the rapid changes that were occurring in their organizations; that is, they needed to deliver programs rapidly in order to keep up with organization-wide initiatives. This need to

inform/train employees within their organizations quickly was often the driver for

selecting online delivery. The changing business environment and the need to disperse

information to employees supports O'Driscoll's (2008) observation that technology is

about speed. The theme of speed came up several times in the research participants'

comments on online delivery:

> To roll out this program to the entire organization of 4,200 was overwhelming, so we have rolled this out to only 50% of the organization at this time. We have only three in the training department at this time to support the system. This has been done over a three-month period; this could not have been achieved using any other delivery system. (Research Participant #10201)

> I mean using Captivate you can create an entire online learning simulation in not much time. But remember it's only one page or so; of course it doesn't take long. So, we created information on the performance management piece. We were able to deploy that quickly. People figured it out, and I think that we got 98% of the way there with people understanding here's how to use the tool.
> (Research Participant #11402)

> For this mandatory program, they [management] needed it yesterday. It was one of those programs where we've got a compliance issue. We will fail on an audit, if we don't have this. So we were able to roll this out to all employees (1,500) in all locations within a month. (Research Participant #10203)

> One of the unique challenges with our store employees is that the windows [opportunities for learning] they have to learn range in 10–15-minute increments before they get pulled by a customer or they've got to do something or run the store or something. (Research Participant #11402)

> So we changed gears, and created a simulation and incorporated this into the online system. It took only an hour to build this piece.
> (Research Participant #11402)

When research participants selected the online delivery system, their comments

supported Driscoll's (1998) observation that online is particularly appropriate for

teaching certain skills, such as software applications, management skills, and business

writing, and imparting particular types of knowledge, such as supervisory compliance

information. Driscoll also noted that online or e-learning has become an important tool

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for training a dispersed workforce because of its relatively low cost, variety of content, and accessibility.

Budget. The US economy has presented numerous challenges to companies in the last three years, all of which have impacted their operating budgets. These conditions have led organizations of every size to cut their training staff and/or the number and range of programs they offer. Some have turned to outside online vendors such as ElementK to support their internal training departments. ElementK has created a library of courses presented in a general way. It is, therefore, possible for an organization to support the general content with more internal training, if needed. Overall, organizations are now focusing on more effectively aligning training with organizational business strategy. The following comments support the budget issues faced by those interviewed for this study:

> We are focusing only on what has to be done right now due to budget constraints. We do not charge back our time, so this last course was developed online to save money and could be rolled out to all of our employees.
> (Research Participant #10203)

> We used Captivate [inexpensive or free software that enables professionals who do not have information technology expertise to design online training] and found the time to design and deliver was fast. Speed equates to time, and time equates to money. Our budget was almost nothing for this project, which will positively impact over 3,200 managers. We have not started calculating ROI, but we should certainly see a positive impact within a year. (Research Participant #11402)

Compliance and mandatory training. The current economic environment has proved to be quite challenging for the training and development profession. Their departments have experienced cutbacks in personnel and reductions in their travel budgets. These cutbacks have forced the remaining training professionals to focus on core training needs. Compliance and mandatory training has been strongly supported by

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the online training-delivery system over the last two years as reported in *Training's*

Industry Report and *ASTD*'s State of the Industry Report. Multiple respondents indicated

that mandatory or compliance training has been delivered using the online delivery

system:

> This safety course was converted to an online delivery system to create
> consistency of message, improve accessibility, and reduce training time. Online
> training has become very popular. It has been implemented across the
> organization into all new hire and annual training curricula. I would estimate that
> 15,000 employees are exposed to this online course annually.
> (Research Participant #12403)

> Online works for getting the general information out to large audiences
> simultaneously. This delivery system enables the organization to deliver this
> program to approximately 15,000 employees annually without travel or missing
> significant amounts of time from work. (Research Participant #12403)

> We have designed an e-learning program for our new supervisors or newly
> promoted supervisors. We used to offer this in our instructor-led-classroom
> version of the supervisory program. We have created this stand-alone portion
> online. This program is our just-in-time solution to get new managers critical
> policy and law information. We've got to educate them very quickly.
> (Research Participant #11301)

The following respondents shared their thoughts on the delivery of mandatory or

compliance training using an LMS or system which records the completion of the

programs:

> We have a component of our orientation program which has been removed and
> created as a stand-alone online course. We needed to play it online because we
> needed to provide the training for all of our employees and basically coming from
> mainly our legal department that we need to provide this to all employees across
> the organization…. This conversion allows us to get the training out across the
> organization by doing it online. This delivery system is easy to track employee
> completion. (Research Participant #11301)

> We have created a kind of just-in-time solution to get new managers critical
> policy and law information. We want to ensure they know how to handle ADA
> issues, EEO issues, and workplace violence issues. Anything can turn disastrous.
> Anything that they do could result in some nasty lawsuit employee relations
> issues. We set 100-percentage pass rate criteria so if they miss a question, it will

grade it and automatically tell them which unit to go back and review. They have three tries to get 100%. The online delivery system allows for the tracking of the completion of each new supervisor. (Research Participant #11301)

Online training works and makes it easy for us to track training, which is required by our organization and [for] which we have assigned deadlines. One of our developers is very good about going back and reminding the trainees that they are behind in their training agreements. (Research Participant #10201)

Summary

The research participants in this study were varied in age and experience in the profession, yet they used the three primary forms of training-delivery systems. There were no regional issues that affected their selection of delivery systems. Regardless of internal factors of age, education, years of experience, and participation in ASTD, they used a wide variety of methods to support the delivery systems. Not all the research participants reported using instructional systems design (ISD), but they understood enough about the process to design their programs systematically. These training professionals were more influenced by the external factors of time constraints, audience needs, and programming issues that affect capacity in the selection of training-delivery systems and training methods.

Chapter 5: Summary, Discussion, Conclusions, and Recommendations

This chapter includes a summary that reviews the study's purpose, research questions, and methodology. The final sections provide an overview of the findings, present conclusions drawn from the findings, and discuss recommendations for practice and further research.

Summary of the Study

The purpose of this exploratory study was to determine which of the three training-delivery systems (instructor-led classroom, blended, and online) is most frequently selected by training professionals who are members of ASTD chapters in Virginia and which training methods are used to support each of the delivery systems.

The study's research methodology was qualitative inquiry, and the research guide approach was used to collect the data. The goal was to represent the voices of the research participants through their responses to the interview questionnaire, which was designed to closely correspond to the stated research questions. Twelve training professionals, all members of ASTD chapters in the Commonwealth of Virginia, were interviewed for this research study. They were selected by the vice presidents of the local chapters. Each professional participated in an interview that lasted 55 to 90 minutes.

Research Questions

This study was designed to answer the following questions:

1. To what extent are instructor-led-classroom, blended, and online training systems being used by trainers in Virginia?

2. What training methods are being used to support these training-delivery systems?

3. To what extent is the selection of classroom-training delivery systems explained by trainers' "internal factors" (i.e., academic background; knowledge of instructor-led-classroom, blended, and online delivery systems; understanding of instructional design systems; knowledge of various training methods; and level of training experience)?

4. To what extent is the selection of training-delivery systems explained by trainers' "external factors" (i.e., workplace constraints and requirements, such as time pressure, audience needs, availability of facilities and equipment, variety of program offerings, number of times a program is to be offered, and program size)?

Summary of Findings

Selection of Delivery Systems

The first research question asked to what extent trainers in Virginia use the instructor-led-classroom, blended, and online training systems. The data collected show that for the time period under consideration (September 2009 to December 2009), the ASTD professionals participating in this study chose instructor-led classroom for 46% of the programs. They selected the blended method of delivery for 32% of the programs and online for 22% of the programs.

Selection of Training Methods

The second research question concerned the training methods being used to support the training delivery systems. The research participants' answers indicated that they used a variety of training methods to support the delivery systems. The research

participants also indicated that they typically analyze the program objectives and the audience before making those selections.

Impact of Internal Factors

The third research question asked to what extent the trainers' internal factors accounted for the training delivery systems selected. An analysis to determine patterns and themes related to each of the internal factors yielded no clear relationships between internal factors and the research participants' choices of training-delivery systems. The geographic locations of the research participants were also examined to determine whether an explanatory relationship might obtain between location and choice of delivery systems, but there was none. It appears that most internal factors have little or no impact on decisions regarding which delivery system to use.

One internal factor, however, that did appear to have an impact on the selection of training-delivery systems was the research participants' understanding of instructional systems design (ISD). Some said that they used a particular model; others said they used no particular model. Yet, all indicated that they choose a delivery system and methods based on program objectives and audience needs. Most expressed the opinion that instruction should occur in a systematic way, which supports their understanding of instructional systems design as a driver in the selection of the delivery system and training methods.

Impact of External Factors

Question 4 focused on the research participants' delivery-system choices and the impact of selected external factors. An examination of the external factors suggested that these variables impacted the selection process to a much greater extent than did the

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internal factors. Workplace constraints such as time pressure impacted the selection of delivery system. When time constraints, that is, the need to create and deliver a training program quickly, were stringent, online training was selected most frequently. Audience needs impacted the selection of training-delivery systems, but not in any particular way. Availability of facilities appeared to have no impact on delivery system selection. Scalability (number of times the training is to be offered) impacted the selection of online delivery system. That is, the online delivery system was chosen most often when large numbers of people were to be trained. The geographic dispersion of the audience also impacted the choice of delivery system in that when the number of people to be trained was high and the trainees were geographically dispersed, online delivery was used most often. Finally, if the program was mandatory, the choice of delivery system was impacted; that is, online training was chosen most often.

Discussion

The majority of the research participants used a systematic approach to selecting training-delivery systems and training methods. They indicated that when selecting a training method they consider both the program objectives and the audience. These priorities supported the use of instructional systems design theory but only via an open system approach that would allow training professionals the flexibility to create the best models for their organizations.

Most of the Virginia training professionals who participated in this study stated that to some extent they follow ISD principles in developing training programs and that they focus primarily on the needs of the audience and training objectives. The range of methods they selected was consistent with studies published by Tracey (1972), Bell

(1977), and Noe (2008), all of whom agreed that no one method is capable of achieving all training goals. Instead, these authors encouraged training professionals to examine the objectives of the program and the needs of the audience in order to determine which training methods are likely to be most effective. However, some of the research participants themselves observed that they are not necessarily well-versed in any particular ISD model.

As technology continues to evolve and as more homes, public buildings, and even entire cities become environments with online access, it is likely that more educational programs will become available online. In addition, mobile learning (mlearning) already provides curricula where and when a learner needs it. Its delivery technologies allow learners to continue their education wherever they are. Further, the technology on which mobile learning draws includes MP3 players, pocket PCs, mobile phones/smart phones, and personal digital assistants (PDAs). Margery Weinstein (2007) reported that "some companies are going one step further by using mobile devices such as smart phones and PDAs to support training and improve on-the-job performance" (p. 15). Beich (2008) predicted that "this convergence of technology and the need to provide information to employees instantaneously will exponentially explode" (p. 459).

Conclusions

Through this dissertation, the researcher attempted to reveal what is taking place in the corporate training environment through the experience of 12 training professionals in Virginia. It examined the choices made by these professionals during a time that training and development continues to be a $58 billion dollar industry (ASTD, 2008; Industry Report, 2008) and the transfer of learning continues to be lower than 20%

(Broad, 2005). This study revealed a shift from instructor-led to blended and online in advance of the industry reports from ASTD (2009) and *Training* (2009). The instructor-led-classroom as a training-delivery system continues to be viable, as it is supported by a wide variety of training methods to engage the audience. Instructor-led does not necessarily mean that lectures are used, though lectures can be a viable means of delivering content to an audience. Bersin (2004) supported this point by saying that "there will always be a role for the teacher, professor, or subject matter expert to teach and entertain us in the classroom" (p. 2). However, Silberman's work (2006) on active training supported the need for the instructor-led system but emphatically explained that "lectures put participants in a position of sustained, passive listening" (p. 67). He insisted that learning cannot occur simply by listening and seeing. Learning requires that the person engage in "mental processing." Silberman boldly stated that "lecturing by itself will never lead to real learning" (p. 67). It is with the caveat that a trainer must "involve participants and maximize understanding and retention through participative techniques" that he supported using the lecture (p. 67). This strategy of approaching the lecture as an active approach to delivering content, engaging audiences, and guiding learning is important not only in the instructor-led-classroom method of delivery but also to the blended system, which incorporates the lecture method as well.

Science pertaining to the training profession emerged in the pre–World War II period (Bertalanffy, 1968; Briggs, Gustafson, & Tillman, 1991; Rothwell & Kazanas, 1998; Seels & Glasgow, 1992; Tracey, 1971). The profession has continued to grow and embrace a multi-disciplinary approach to the delivery of training. This approach has generated numerous models, methods, and tools to support the goals of the profession.

The use of a variety of methods encourages the transfer of learning and continues to help the profession meet its goal of delivering workplace learning that is enhanced.

The qualitative approach used in this study allowed an examination of the training professionals' work. Using this approach meant that the distinctive voices of the training professionals could be captured, including their emotions, beliefs, and thoughts. The interview format enabled the study to move beyond simply cataloguing the delivery systems selected in order to determine the reasons why they were selected. As questions were asked and responses given, the conversation could revisit important concepts that were important to the research participant. This methodology also enabled a deeper examination of the research participant's thought processes than other methods would have afforded. Words and concepts could be explored, which allowed the researcher to derive a greater understanding of the nature of the various training-delivery systems and the methods selected to support program goals.

As described in Chapter 2, the development of employees is essential to global competitiveness. As witnessed in the most recent economic recession, the condition of one country's economy can have a tremendous impact on the economies of other countries. The companies that view training and development as a means of creating and developing intellectual capital will likely become global leaders, as Fitz-enz (2000) and Sessa and Condam (2006) have suggested. The present study also supports the work of Broad (2005), Fitz-enz (2000), Noe (2008), and P. P. Phillips (2002). A synthesis of these studies, simply stated, is that the success of most organizations rests on human capital, that is, employees are logically cast as "the last resource of competitive advantage" (P.P

Phillips, p. 5). Organizations should, therefore, strive to provide their employees with high-quality training to support strategic business goals.

Recommendations for Practice

A primary implication for organizations that have training and development professionals on staff is to support their development through formal and informal learning opportunities. These opportunities include degree programs, college credit courses, and continuing education courses. Other opportunities that can be supported are membership in training-and-development-focused organizations such as ASTD. Support in the form of subscriptions to professionally-oriented journals and publications also provide opportunities for informal learning.

Another implication for business and industry is the importance of being in the forefront of embracing technology as a learning tool. Business leaders should purchase technology devices for the purpose of delivering training and development and support training professionals in exploring how to use these devices. The next generation of workers is already demonstrating a more technologically-connected approach to learning. They are accepting of traditional learning but they are accustomed to collaborative learning environments that embrace technology. Technology creates another challenge for the training and development field as professionals must manage this information. The management of this information relates to the accuracy of the information and to applying it appropriately to the workplace. There is no doubt that the workplace is rapidly changing; business is not creating products to the same extent as it did in the 1950s. Instead, the workplace of today could be a lean manufacturing environment, a sales environment that customizes products, or an information-based environment. Regardless

of the output of the organization, the customer value proposition often requires rapid changes in product lines. These rapid changes require rapid training. Technology can provide speed in providing information to the workforce. This training may not look the same as five years ago. Organizations will learn through the recent economic recession to view technology as a means of delivery, regardless of the length of the course, and as a way to engage internal talent.

This study provides information to serve both training professionals and organizations that have training professionals on staff. Individual training professionals can use this information to support their continued education either through formal or informal paths. Organizations can use this information to challenge their training departments to embrace technology as a training-delivery system. Training professionals, therefore, should learn more about the emerging technologies that are having an impact on the profession.

As stated, though, the research overall suggests the importance of using ISD principles. Therefore, in the professional development arena, institutions of higher education and professional organizations should consider placing more emphasis on ISD in the development of training professionals.

Recommendations for Further Research

This study represented the voices of 12 training professionals, all members of ASTD chapters in Virginia. It took place over a period of three months. The results of this study raise some questions and suggest some directions for future research in the training and development field. As shared earlier in this study, training and development can be a large expense for organizations (reported nationally at between $58 to $134

billion dollars) and with the transfer of learning estimated at only 10–20% the effectiveness of training programs continues to be an issue. A follow-up study should be performed to determine the effectiveness of the programs discussed in the study by applying a return on investment strategy. This approach would enable the researcher to measure the transfer of learning and the value to the organization. A study of this nature would be useful in better understanding issues pertaining to the transfer of training and return on investment. Further research into evidence-based methodology would also provide direction for the transfer of learning. Another study examining the application of ISD principles to developing online programs would be helpful given the fact that technology is likely to become more important in educational programs. In addition, it is also recommended that research be conducted with younger trainers who are working for non-traditional organizations in order to explore their use of new and emerging technologies.

Reflections

The purposeful sample used in this exploratory study was small and reflects only a very small portion of the membership of ASTD in the Commonwealth of Virginia. As a consequence, it has only limited generalizability to the larger population of training professionals in Virginia. In addition, it consists entirely of ASTD members selected by the vice presidents of the chapters who agreed to participate in the study. Although candidates for inclusion in the study were sought from all four of ASTD's Commonwealth of Virginia chapters, the final sample may not accurately reflect the overall membership of ASTD. Despite these limitations, 2009 national survey data from

ASTD and *Training* reflected figures very close to those of this study. The 2009 national

data were not published at the time this study was undertaken. This study, though, is

important to the greater body of knowledge in that it provides specific examples of what

is taking place within the training and development profession in Virginia. The findings

support much of the research and data being published today related to general systems

theory, ISD, active training, and training-delivery systems. The study also supports the

latest work in social learning theory, evidence-based methodologies, and emerging

technologies, and the need for a more flexible approach to instructional systems design

(Bingham & Conner, 2010; Clark, 2010).

In *The ASTD Handbook of Training Design and Delivery* (2000), Mary Broad

examines the many factors that inhibit the transfer of learning, one of which is poor

training design. The research participants in the present study use sound design strategies

that relate to program objectives, the needs of their audiences, and chose delivery

methods and system which considered the external factors. Continued research based on

this study's findings has the potential to identify the factors that contribute to the transfer

of learning and subsequent improved performance; thus raising the transfer of learning

rates beyond the reported 10-20%. The focus for the future should be on integrating

training programs into the strategic and operational framework of the organization and on

establishing comprehensive evaluation processes and measurement criteria designed to

capture the contributions that specific trainings actually make to employee performance.

Special attention should be paid to understanding the relative efficacy and appropriate use

of technology. Through this three-fold approach, such research would help training

professionals and the organizations to whom they are accountable offer the most effective

training for any given purpose to employees.

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Appendix A

Questionnaire Instrument and Field Guide

Participant Code_____

I. Participant Information

Title _____
Size of organization (number of employees)_____
Type of organization _____
Age_____
Educational level completed _____
Educational background _____
Number of years in training profession _____
Number of years in ASTD_____

II. Interview Questions

1. Would you please tell me about why you entered the field of training and development?

2. What types of professional development activities do you take part in?

3. What do you think about the instructional system design process? Would you share your thoughts about ISD?

4. Please tell me about 3 programs that you designed and delivered during the last 18 months. If you designed and delivered fewer than 3 programs during that time, please describe only those that fall within that time frame. Please feel free to jot down your ideas about the programs. Please be as detailed as possible about those programs. (Please answer the following questions for each program):

   • Why was this program created? How was this need identified and by whom?

   • Describe the audience for the program in terms of age, gender, work location, title, education level, department, and any other information that you care to share.

- How did you choose to deliver this training program? For example, was this delivered online? Describe this to me: Please tell me as many specifics about the course as you can. Was it blended, instructor-led, or online? What methods did you use to support the delivery?

- How did you select that particular system?

- What factors did you consider in making your choice of delivery systems? Audience? Location of audience? Size of audience? Needs of audience? Length of the program? Frequency of delivery? Facilities? Equipment? Program history? Cost? Time constraints of roll-out?

- **If any one of the choices was instructor-led classroom or blended,** would you share which training methods you used to support the portion(s) that were instructor led?

- **If instructor-led classroom or blended methods were provided,** would you share how and why you selected the methods used to support the portion(s) that were instructor led? Why did you prefer this method or methods in this instance?

5. Do you have other information related to training and development that you would like to share?

Appendix B

Letter to ASTD Membership Vice Presidents

September 3, 2009

Chapter Vice President Name
Chapter Name
Address
City, State   Zip

Dear ASTD Membership Vice President,

I am the Associate Director of Management and Professional Development at the Pamplin College of Business at Virginia Tech, and a doctoral student in Career and Technical Education likewise at Virginia Tech. I am also a long-time member of the ASTD chapter. I am following up on an email I sent to you last week on the subject of a research study that I am conducting with ASTD's Virginia chapters regarding the selection of training-delivery systems and training methods to support the instructor-led-classroom delivery system. The study will examine the factors that affect training professionals' decision-making in this regard.

I am writing to invite your chapter to participate in this research study. I would like to ask your assistance in selecting six active members of your chapter to participate. Only active members of an ASTD chapter in Virginia are eligible to participate. In addition, the ASTD members must have pursued careers in the profession for a minimum of two years, have served on a committee or in another leadership role, and be responsible for developing or supervising the design of training programs.

Participation is voluntary and unpaid. However, as a member of the profession, I would like to express my gratitude for your collegiality and that of any participants by speaking at a chapter meeting on the subject of my research when it is complete.

I ask that you forward the names and contact information of six members who fit this description to me by email by September 11. I will then follow up with an email similar to this letter to the prospective interview subject. I will work with the members in the order that I receive their names from you. Each member will have the opportunity to determine his/her willingness to participate. Once three members have agreed to participate, I will notify those still on the list that while their willingness to participate is appreciated, their services will not be needed at this time. The interviews, which should each last approximately 60 to 90 minutes, will be held in a location convenient to the participants. Though the interview will be audiotaped, the participants' identities will be

protected, and their responses will be coded so that any statements made will not be traceable.

I will contact the prospective subjects to determine their interest in participating in the study with the date and time most convenient for them. I ask that they review the informed consent document; we will discuss this form at the time of our meeting. If you need to contact me, I can be reached at 540.231.5567, or at scottsg@vt.edu.

Thank you for considering participating in this study. It is the purpose of this research to benefit professionals in the field of training and development in designing and delivering effective training programs to a range of participants.

Sincerely,

Sharon G. Scott
Doctoral Student

Appendix C

Email Letter to Prospective Research Participants

September 11, 2009

Dear ASTD Member,

I received your name from the Vice President of membership of your ASTD chapter. I am Sharon Scott, Associate Director of Management and Professional Development at the Pamplin College of Business at Virginia Tech. I am also a doctoral student in Career and Technical Education at Virginia Tech. I am conducting a study with ASTD's Virginia chapters about how training professionals decide on training-delivery systems and supporting training methods. The study will examine the factors influencing those decisions.

I will be asking questions about the last three different training programs that you designed and or delivered. I would ask that you think about these programs in advance of our interview. There is no right or wrong answers; this is strictly an exploratory study to learn more about our practices as training professionals in Virginia.

I am following up on the information provided by (name of the Vice President of ASTD chapter). I am writing to invite you to participate in this research study. The interview should last approximately 60 to 90 minutes at your office or another location of your choice. The interview will be audiotaped, and I will also be taking notes. Your identity will be protected, and your responses will be coded so that any statements you make will not be traceable to you.
In return for your participation in this research study, I would be pleased to share the results of the study upon completion. Additionally, I would like to offer to speak at one of your ASTD chapter's monthly meetings.

I would be happy to discuss any questions that you may have regarding this research study and your participation. If you wish to talk with me, I can be reached at 540.231.5567, or at scottsg@vt.edu.

Thank you for considering participating in this study. It is the purpose of this research to benefit professionals in the field of training and development in designing and delivering effective training programs to a range of participants. Thanks again.

Sincerely,

Sharon G. Scott

Appendix D

Follow-up Email Communication to Prospective Research Participants

Sharon Scott
Phone: 540.231.5567
Email: scottsg@vt.edu

Name:
Address:
Phone:
Email:

I will be in your area for three days in the fall to conduct the research. If the time for the phone call is not convenient, please contact me at 540.231.5567, or 540.449.5656, or at scottsg@vt.edu as soon as possible to arrange a date or time for the interview.

Please Check One

_____ I am willing to participate in the study.

_____ I do not wish to participate in the study and do not wish to receive a call or email from the researcher.

Appendix E

Request for Approval of the Study
Outline for Protocol

I. Justification of Project

This research reflects a qualitative exploration of the factors affecting the decisions made by training professionals in the selection of training-delivery systems. The researcher plans to study members of the American Society of Training and Development (ASTD) in Virginia. The researcher will focus on which training methods are selected to support the instructor-led-classroom delivery system and how those methods are selected. The researcher will note other factors that can define non-traditional status that the participant may also possess.

Human subjects must be involved in this research to obtain a better understanding of the decision-making process and the factors affecting those decisions among members of Virginia's four ASTD chapters. This profession is a $58 billion business that is partially responsible for the performance of those employed by organizations in the US. It is important to know more about the decision-making processes of these professionals; this information could provide insights regarding curriculum changes to make as we prepare training professionals to enter the workforce. It could also provide insights to those organizations providing professional development programs to members of the profession.

II. Procedures

The subject pool will be members of the Commonwealth of Virginia's four ASTD chapters. The researcher will work with the vice president of membership of each of the ASTD chapters to select—based on clearly outlined criteria—six members from each chapter to participate in the research study. Once the list of six has been determined, the researcher will contact each member to determine his/her willingness to participate. If the member is unwilling to participate, the researcher will contact the next member on the list. Once a member has indicated his/her willingness to participate in the study, the researcher will contact the member by email letter to arrange the interview date and time. If the member indicates that he/she is not interested in participating, the researcher will thank the member and again return to the list. The researcher will inform each member that his/her participation will consist principally of an interview lasting 60 to 90 minutes.

The researcher will follow a structured interview questionnaire to ask the participants questions about their decision-making processes for choosing training-delivery systems and the facts affecting those choices. Additionally, when the instructor-led-classroom delivery system is identified, the researcher will ask which training methods are used to support this delivery system. The researcher will offer to meet the respondent at a mutually agreeable place and time. The participant and the researcher will meet only once, and the session will be audiotaped and later transcribed. Measures will be taken to

protect the participants' identities by not using names anywhere in the report, except in the master roster of participants. An agreement will be signed by the participant; it will acknowledge that the data will be published and used publicly, but that identities will remain unpublished.

III. Benefits and Risks

There are a few risks to the individuals participating in the study. The review of recent training programs and their choices of delivery systems could appear to be judgmental. Precautions will be taken to ensure that the questions are open and non-confrontational. The researcher will take time to build the necessary rapport with the participant in order to create an opportunity for participants to feel a sense of pride in their work and choices made.

As this is a qualitative study, the benefits of understanding the decision-making process and those factors that affect the choices of the training professional will be helpful in updating instructional design curriculum and training and development curriculum. Likewise, the study will contribute to creating relevant professional development opportunities for practitioners. It is important to understand the factors affecting the decision-making process in this billion-dollar industry in order to improve the transfer of learning to the workforce.

IV. Confidentiality/Anonymity

Each participant's questionnaire will be given a code after it has been completed. The master roster of the questionnaires' codes will be kept in the researcher's possession. The material will be evaluated using the code number as the identifier, not the participant's name. Only if the participant wishes to be contacted later regarding the results of the study, or if there are additional questions that the researcher must ask, will the participant's name or identifying information be used.

Audiotapes will be made of the sessions to ensure accuracy of the information written on the questionnaire. The audiotapes of the sessions will be transcribed, and they will be kept in a secure place to provide evidence of the translation of the data. The tapes and the transcripts will remain in the researcher's possession. Once the study is complete, the tapes will be destroyed after three years. The transcripts will remain with the study for future evaluation and use if necessary. The participant will have signed a release recognizing the fact that the data will be published and used publicly, but with the participant remaining anonymous.

V. Informed Consent

The potential participant will be sent an informed consent form with the initial mailing asking if he/she wishes to participate in the study. Once it has been determined that the ASTD member wishes to participate in the study, the informed consent form will be discussed further and signed at the meeting with the researcher. This will give the

potential participants ample time to think about their involvement in the study and their willingness to reveal personal facts about their professional practices that will be recorded anonymously.

Appendix F

Informed Consent Form
Virginia Polytechnic Institute and State University
Informed Consent for Participants
in Research Projects Involving Human Subjects

Title of Project: Qualitative exploration of factors impacting selection of training-delivery systems and methods used to support delivery systems by ASTD members in the Commonwealth of Virginia

Investigator: Sharon Scott; Faculty Advisors: Drs. Daisy Stewart and Bill Price

Purpose of this Research Project:
The purpose of this exploratory study is to determine if the instructor-led-classroom training-delivery system is the most frequently selected method among training professionals in Virginia, and if so, which methods are being used to support this delivery system. This study will also include an examination of the extent to which the trainers' respective academic background and knowledge of the instructor-led-classroom, blended, and online delivery systems contribute to the selection and use of those systems. The study will further examine the experience level of the trainers to determine if this affects the selection of the instructor-led-classroom, online delivery, or blended training system. Additionally the study will explore the selection of the methods used to support the instructor-led-classroom delivery system. Finally, the researcher will seek to identify the extent to which the trainers' workplace constraints and requirements determine the frequency with which the instructor-led-classroom, blended, and online training systems are selected.

Procedures:
You will be asked a series of questions from a developed questionnaire. The questions will ask about your background in training and development, decisions you make in designing and developing training programs, and the factors affecting your decisions. The session will be audiotaped, but your identity will be protected.

Risks:
The questions the researcher will ask are about your decision-making process in the design and delivery of training programs. These questions are not asked in order to be judgmental, but simply to better understand what is taking place in training departments and to better understand the decision-making processes of training professionals. The information you provide is your personal account of what you are doing in the training arena.

Benefits of this Project:
Your participation in this project may help others to understand the decision-making processes involved in designing training programs. This information could be used to improve training or instructional design curriculum at colleges and universities and assist in the development of more effective professional development programs.

You may be surprised by how much you know and how beneficial talking in concrete terms about your decision-making in this regard may be. It may be beneficial to you to become more aware of the many factors that affect the decisions you make in creating a program that will best meet the

organizational challenges of your company or the improved performance of the individuals within the organization. You may find that you will complete the experience feeling quite pleased with your work.

Extent of Anonymity and Confidentiality:
The individual results of this study will be kept strictly confidential. Your written consent is required for the researcher to release any data identified with you as an individual to anyone other than personnel working on the project. The information you provide will have your name removed, and only a subject number will identify you during analyses and in any written reports of the research.

The sessions will be audiotaped. The tapes will be stored securely, used only by the researcher and the transcriber. If the researcher wishes to use a portion of your audiotape for any other purpose, she will secure your written permission before doing so. Your signature on this form does not give permission to use the audiotape in any other way. However, you do give permission for the information to be published with your identification protected. You are requested to refrain from discussing your experience with other people who may be among the other 11 participants.

Compensation:
Your participation is voluntary and unpaid.

Freedom to Withdraw:
You are free to withdraw from this study at any time for any reason.

Approval of Research:
This research has been approved, as required, by the Institutional Review Board for projects involving human subjects at Virginia Tech.

Subject's Responsibilities and Permission:
I voluntarily agree to participate in this study, and I know of no reason I cannot participate. I have read and understand the informed consent and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent for participation in this project. If I participate, I may withdraw at any time without penalty. I agree to abide by the rules of this project.

_____ _____
Signature   Date

_____ _____
Name (Please Print)   Contact – Phone

_____
Contact – Email