A COMPARISON OF THE INFLUENCES OF DIFFERENT TRAINING APPROACHES ON TRAINEES’ PERCEPTIONS OF SELF-EFFICACY TO ACHIEVE TRAINING OUTCOMES AMONG BANKERS IN TAIWAN

Dissertation

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ABSTRACT

The purpose of this study was to compare the influences of the classroom training and the structured on-the-job training (S-OJT) approaches on trainees’ self-efficacy to achieve the training outcomes among bankers in Taiwan. Based on the conditions for training effectiveness identified in the literature, the study examined whether trainees with the structured on-the-job training approach and with the classroom training approach differed in their self-assessment of self-efficacy to achieve training outcomes. In addition, this study explored the relationships between the variables of trainees’ general self-efficacy and self-efficacy to achieve training outcomes and the two training approaches. Two survey instruments were developed to measure the variables. One asked trainees about the influence of the classroom training approach on their self-efficacy to achieve the training outcomes, and the other asked trainees about the influence of the structured on-the-job training on their self-efficacy to achieve the training outcomes. The questionnaires were randomly distributed to trainees in the Training and Development Center of the Taiwan Academy of Banking and Finance (TABF) from February 21 to March 21. Three hundred two respondents (147 for the classroom training questionnaire and 155 for the S-OJT questionnaire) provided complete data; the overall response rate was 61 percent.
The results showed that the trainees with the structured on-the-job training approach had higher levels of self-efficacy to achieve the training outcomes than those with the classroom training approach. In addition, the results showed that, for the trainees with high general self-efficacy, structured on-the-job training and classroom training had equal influence on the trainees’ self-efficacy to achieve the training outcomes. However, for trainees with low general self-efficacy, those who received structured on-the-job training had higher self-efficacy to achieve the training outcomes than those who received the classroom training. Furthermore, the results showed that there was a moderate relationship between the trainees’ general self-efficacy and their self-efficacy to achieve training outcomes for the total sample and for the classroom training group. However, the correlation between general self-efficacy and self-efficacy to achieve training outcomes for the S-OJT group showed a low or weak relationship. The results of this study have several useful implications for future research in the HRD area as well as for practitioners in business, adult education, and human resource management.
DEDICATION

Dedicated to my son,
Andrew Z. Juang,
my husband,
and my parents.
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A lot of people have helped me during this long learning journey. I would like to first thank my advisor, Dr. Ronald Jacobs, for his sincere encouragement and support when I had difficulty in the research and in life. I also appreciate his trust in my capability to conduct the research and his experienced coaching, which helped me in spite of my hesitancy, to become a more confident person in my professional life and to develop my capacity as an independent researcher. In addition, special thanks are due for his concern and love for my son, Andrew. Without Dr. Jacobs’ support, understanding and patience, I could not have provided good care to my son and completed the Ph.D. study at the same time.

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CHAPTER 1

INTRODUCTION

Training refers to a planned effort by a company to facilitate employees’ learning of job-related competencies (Noe, 1999). Investments in training are intended to develop employees with the result of increasing productivity and gaining a competitive advantage. It has been reported that ninety percent of private organizations in the United States offer training programs to their employees (Carter, 2002). In addition, the annual training expense in the United States is reported to exceed $55 billion, and the average amount spent on training for each employee has been estimated to be from $645 to $1,641 (Noe, 1999). Because of the extensive investment in training, there is continuing concern about the issue of training effectiveness (Karsten and Loomba, 2002).

Research has indicated that many individual, organizational, and training-related factors influence training effectiveness (Cannon-Bowers, Tannenbaum, Salas, & Mathieu, 1995). Among them, the training approach is one of the training related factors that has attracted much attention from researchers in the education area and been studied extensively by one line of HRD scholars. At present, over ten training
approaches based on different learning theories have been developed by scholars and can be used in the design of training programs to enhance training effectiveness.

According to many surveys, classroom training is one of the training approaches most frequently adopted by organizations (Jacobs, 1992 & 2003; Wilson et al., 1980). Classroom training is off-job training which provides group-based learning opportunities on a variety of topics at a site other than the site where the work is actually done (Jacobs, 2003). There are three distinguishing attributes of classroom instruction: (1) a live instructor, (2) a group of students, and (3) a location separated from the workplace (Yelon, 1992, 1999). Group teaching by a live instructor differentiates classroom instruction from individualized instruction and self-instruction. The location other than the workplace distinguishes classroom instruction from on-the-job training (Jacobs, 2003).

The purpose of classroom instruction is to provide workers with the knowledge and skills required to perform competently on the job (Yelon, 1999). Most of the time, the trainer will use lecture as the presentation method to deliver the training. That is, the trainer communicates through spoken words what she/he wants the trainees to learn. Such communication is essentially one-way - from the trainer to a group of trainees - instead of two-way communication between trainers and trainees (Noe, 1999). As a result, trainees rarely have opportunities to practice tasks learned in the training and seldom get much feedback from the trainer.

On-the-job-training (OJT) is another training method that is commonly used by organizations (Noe, 1999; Wilson et al., 1980). Just as with classroom training, the
The purpose of OJT is to teach workers the competencies required in the performance of their jobs (Jacobs, 2003; Wilson et al., 1980). However, in contrast to classroom training with lecture, in OJT, new or inexperienced employees learn by observing peers or managers performing the job and then trying to imitate their behavior (Noe, 1999).

According to the literature, OJT can be divided into two primary forms of instruction: unstructured and structured (Cullen, Sawzin, Sisson & Swanson, 1976; Jacobs, 1992; Wilson et al., 1980). Most OJT is informal and unstructured (Noe, 1999). Unstructured OJT can take various forms, such as apprenticeships and self-directed learning, to deliver the training. On the other hand, structured on-the-job training (S-OJT) differs from unstructured OJT in making use of a planned process. According to Jacobs (2003), S-OJT is “the planned process of developing competence on units of work by having an experienced employee train a novice employee at the work setting or a location that closely resembles the work setting” (p. 28). In addition, the design of the instructional events in S-OJT is mainly based on the principles of social learning theory (Jacobs, 2003; Noe, 1999).

Specifically, the five training events of S-OJT are: preparing the trainee, presenting the training, requiring a response, providing feedback and evaluating performance. According to Jacobs (2003), the first two events focus on the trainee’s attention to the topic at hand and also serve to guide the attention of the trainee toward specific parts of the training content. The third event calls for trainees to respond in a meaningful way to the model that was presented, which helps learners to remember the behaviors or skills that they have observed; in other words, this event is focused on retention.
The fourth training event involves learners’ trying out the observed behaviors and requires that the trainer ascertain whether the trainees reproduce the behavior observed in the model and provide the trainees with pertinent information about the accuracy and adequacy of their responses; thus, this event incorporates motor reproduction. The fifth training event is a summative judgment of the adequacy of the trainee’s performance. This is a motivational process that reinforces the modeled behavior if it results in positive outcomes (Jacobs, 2003; Noe, 1999). Studies have shown that such a design will increase learning motivation, reduce learning anxiety and, finally, enhance training effectiveness (Jacobs, 2003).

Statement of the Problem

There is continuing concern about the effectiveness of training among human resource development (HRD) researchers and practitioners (Jacobs, 2003; Karsten and Loomba, 2002). According to the literature, the training approach is a factor that can influence training effectiveness, and many researchers have made an effort to identify ways to deliver training content to trainees to maximize training effectiveness (Cannon-Bowers, Tannenbaum, Salas, & Mathieu, 1995). Among all the training methods, based on research surveys, classroom training and on-the-job training are the two training approaches most frequently used by organizations (Noe, 1999). S-OJT, in which the OJT is carried out in a much more fully planned and organized fashion, was proposed by Jacobs et al. in 1987 (Jacobs, 2003; Jacobs & McGiffin, 1987).

Since the S-OJT approach was proposed, one line of HRD researchers have
discussed the nature of structured OJT as it appears in various organizations. In addition, a number of research studies have evaluated the effectiveness and efficiency of S-OJT and compared its results with those of unstructured OJT and classroom training. For example, Rothwell and Kazanas (1990) conducted an exploratory study with 127 organizations to gain an understanding of the nature of the structured OJT programs and the organizations’ commitment to preparing their employees to deliver the programs. DeJong (1993) and DeJong and Verloot (1994) provided several in-depth case study analyses of the use of structured OJT in the Netherlands. In a series of research studies, Jacobs (2003) explored the issues of whether employees who receive S-OJT perform better than those who receive other kinds of training and whether employees who receive S-OJT achieve training objectives faster than those who receive training based on other training approaches, and, if so, what the financial implications of these outcomes.

Besides training approach, self-efficacy is another important factor that influences training effectiveness (Cannon-Bowers, Tannenbaum, Salas, & Mathieu, 1995). According to the literature, the term “self-efficacy” refers to an individual’s level of confidence and self-judgment regarding ability to organize and implement actions needed to perform effectively (Bandura, 1986; Dunlap, 2005). It has also been described as a belief in one’s capability to use cognitive resources, motivation, and courses of action to meet task demands (Wood et al, 1987). Enactive mastery, or successful previous experience, is the most influential contributor in developing personal self-efficacy. Vicarious experience and verbal persuasion (such as encouragement) also increase self-efficacy (Wagner & Hollenbeck, 2005; Wolf, 1997).
Many scholars argue that self-efficacy should be taken into account as a capacity that can be developed and as a predictor of overall training achievement and job performance. First, scholars argue that self-efficacy can be developed and changed through training and should be included as a post-training measure of learning along with verbal knowledge, skills, attitudes and behavior transfer (Gist, 1989; Kraiger, Ford & Salas, 1993; Luthans, 2002; Noe, 1999). In other words, they have claimed that self-efficacy is an additional training outcome that is useful in evaluating the effectiveness of a training program or comparing different training approaches. Researchers such as Gist and Schwoerer have conducted several experimental studies to compare the effects of different training approaches on trainees’ posttraining self-efficacy. Their research results showed that relative to a tutorial approach, the behavioral modeling training approach (BMT), which was developed based on social learning theory, yielded higher self-efficacy scores and higher performance on an objective measure of computer software mastery (Gist, Schwoerer & Rosen, 1989; Taylor, Russ-Eft & Chan, 2005). In addition, they found that a training method composed of cognitive modeling with practice and reinforcement generated significantly higher participant self-efficacy than a method involving either lecture or practice alone (Gist, 1989).

Although many scholars have argued that self-efficacy is an additional training outcome that can be useful in evaluating the effectiveness of a training program or comparing different training approaches, some of the training approaches which have been proposed by HRD scholars have yet to be explored in studies focusing on
self-efficacy as a training outcome. When research studies have been conducted by HRD scholars to evaluate the effectiveness and efficiency of the S-OJT approach or to compare its results with those of unstructured OJT and classroom training, such training outcomes as knowledge, skills and behavior transfer have served as the primary focus of evaluation and discussion in most cases. To date, there is no published research work exploring how trainees’ perceptions are influenced by the S-OJT approach as reflected in their self-efficacy to achieve the training outcomes or comparing such results with similar results for the classroom training approach.

Second, OB scholars have argued that self-efficacy can be used to predict work-related performance, career choice and decision making (Gist et al., 1989, 1991; Tracey, Hinkin, Tannenbaum and Mathieu, 2001). In other words, they have claimed that research has generally supported positive relations between efficacy and a range of performance measures and outcomes (Gist et al., 1989, 1991; Saks, 1994). That is, a trainee with greater self-efficacy, and in turn, presumably greater motivation, is likely to be more attentive and focused during training and thus more likely to enjoy the learning experience and perceive it to be valuable, compared to a trainee with lower self-efficacy and pretraining motivation. On the contrary, trainees with low self-efficacy experience more anger, frustration, and anxiety during training than high self-efficacy trainees.

Although these studies all support the importance of self-efficacy for understanding and predicting training effectiveness and job performance, self-efficacy as discussed in most of the previous studies has been primarily conceptualized as a situation-specific belief, that is, an individual’s judgment of his/her capability to perform
in particular settings on a given task, skill or behavior (Luthans, 2002; Schwoerer, May, Hollensbe & Mencl, 2005; Wolfe & Williams, 1999). However, according to Bandura (1977) and Sherer et al. (1982), there is evidence that the experiences of personal mastery that contribute to efficacy expectancies generalize to actions other than the target behavior. As the conceptualization of self-efficacy becomes more general, there is a shift in focus toward the individual differences construct of general self-efficacy (GSE), a general belief in one’s ability to succeed (Schwoerer, May, Hollensbe & Mencl, 2005). Unlike specific self-efficacy, which is viewed as a malleable independent variable, GSE is viewed as a more stable traitlike characteristic by many scholars (Luthan, 2002; Schwoerer, May, Hollensbe & Mencl, 2005). To date, although specific self-efficacy has been widely discussed by many scholars, relatively little is known about how general self-efficacy influences a person’s training outcomes and job performance. In addition, the relationships among trainees’ general self-efficacy, self-efficacy to achieve training outcomes, and the factor of different training approaches have not been studied.

Therefore, this study mainly sought to compare the influence of two training approaches, structured on-the-job training and classroom training, on trainees’ perceptions related to their own predictions concerning their self-efficacy to achieve training outcomes among bankers in Taiwan. In addition, this study explored the relationships among the variables of trainees’ general self-efficacy, self-efficacy to achieve training outcomes, and training approaches.

This study is based on the proposition that, if a training approach can not only
deliver knowledge and skills to trainees effectively and efficiently but also increase their general self-efficacy and specific self-efficacy to enhance their learning rates (Schwoerer, May, Hollensbe & Mencl, 2005), training effectiveness will be maximized.

Research Questions

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

1. Do trainees in two training groups (with the structured on-the-job training approach and the classroom training approach) differ in their self-assessment of general self-efficacy?

2. Do trainees with the classroom training approach and with the structured on-the-job training approach differ in their self-assessment of self-efficacy to achieve training outcomes?

3. Do trainees with the classroom training approach and with the structured on-the-job training approach show different relationships between their general self-efficacy and their levels of self-efficacy to achieve training outcomes?

4. Do trainees with high levels of general self-efficacy differ in their assessment of self-efficacy to achieve training outcomes after training using classroom and structured on-the-job training approaches?

5. Do trainees with low levels of general self-efficacy differ in their assessment of self-efficacy to achieve training outcomes after training using classroom and structured on-the-job training approaches?
6. What are the relationships between demographic variables and general self-efficacy across the trainees with high and low levels of general self-efficacy?

Limitations of the Study

Limitations are factors that cannot be adequately controlled in the design of the study and which cannot be accounted for when analyzing, interpreting and generalizing the data. The limitations of this study are:

1. The survey was self-report in nature.

2. Any generalizations from the results of this study are limited to the population of the training and development center of the Taiwan Academy of Banking and Finance (TABF) in Taiwan. The results cannot be generalized to other groups and other countries.

3. The results of this study are limited by the research method and instrument used. In this study, a written training scenario was used instead of real training.

4. The perceptions of respondents may be influenced by other factors such as previous training experiences, educational background, and some personal characteristics.

5. The questionnaire was translated into Chinese, and the translated version might not have been entirely equivalent to the original English version even though a great deal of effort was put into validation and translation procedures.
6. This study is concerned with the trainees’ confidence level relative to achieving training outcomes. It does not address specific training content or job behaviors.

Significance

The results of this study will add knowledge in theoretical and practical areas of human resource development and organization behavior.

According to the literature, research has indicated that both the training approach and trainees’ self-efficacy can influence the trainees’ learning performance and that these two variables are important contributors to training effectiveness. That is, when trainees enter a training program, how the training content is delivered to them influences their learning performance. In addition, the trainees’ self-efficacy may also affect their motivation to attend the training program, and their sense of being able to accomplish what is being asked of them affects the ability of the trainees to acquire the knowledge and skills presented in the training successfully (Cannon-Bowers et al., 1995; Saks, 1994). Because of the importance of maximizing training effectiveness, a number of scholars in both human resource development and organization behavior areas have devoted their effort to the study of these two variables.

Although much has been accomplished, there are still a number of limitations to previous studies that should be addressed. In the HRD area, although cognitive and skill-based outcomes are usually addressed when evaluating a training approach, the affective training outcomes, such as self-efficacy, are seldom discussed. In the
organizational behavior area, Saks (1995) has drawn attention to several limitations to previous studies. First, most of the previous studies involved experimental designs in classroom settings rather than in organizational settings. Second, in many studies, the participants were students rather than employees. Third, in many cases, the tasks involved were a simulation rather than work-related tasks with actual consequences for the participants. As a result, little is known about self-efficacy and training outside well-controlled experiments or to what extent the findings of the previous studies can be applied to employees in organizations (Saks, 1995). In addition, relatively little work has compared the utility of general and specific measures of self-efficacy or their respective malleability (Schwoerer, May, Hollensbe & Mencl, 2005).

Therefore, this study represents an attempt to overcome some of the limitations of previous studies and to facilitate greater understanding of the differences and relationships among training approaches, general self-efficacy and specific self-efficacy. It is hoped that the results of the study will provide both HRD researchers and practitioners more specific information relevant to the issue of training effectiveness for further research and practice.

Definition of Terms

The major terms used in this study have been operationally defined as follows:

Training approaches. Training approach refers to a systematic process which trainers use to deliver information or training content to trainees. In this study, the
variable of training approaches has two levels, structured on-the-job training and classroom training.

**Structured on-the-job training.** Structured on-the-job training approach refers to “the planned process of developing competence in units of work by having an experienced employee train a novice employee at the work setting or a location that closely resembles the work setting” (Jacobs, 2003, p. 28).

**Classroom training.** Classroom training approach refers to off-job training which provides group-based learning opportunities on a variety of topics at a site other than the site where the work is actually done (Jacobs, 2003).

**Self-efficacy.** Belief in one’s capabilities to organize and execute the courses of action required to produce given attainments (Bandura, 1977). A person’s judgment about whether she or he can successfully learn knowledge and skills (Noe, 1999).

**General self-efficacy.** General self-efficacy refers to a general belief in one’s ability to succeed (Sherer et al., 1982). It reflects a generalization across various domains of functioning in which people judge how efficacious they are (Luszczynska, Scholz and Schwarzer, 2005). In this study, the level of general self-efficacy is measured through a seven-point Likert scale with 17 items.

**Self-efficacy to achieve training outcomes.** A trainee’s confidence in his or her capacity to learn the knowledge, skills, and behaviors of specific tasks during the training and also to transfer these learned tasks on the job. In this study, the level of self-efficacy to achieve training outcomes is measured through a seven-point Likert scale with 13 items.
Training outcomes. Training outcomes are criteria to identify whether a training program has been effective or not. In general, training outcomes are classified into five categories: cognitive outcomes, skill-based outcomes, affective outcomes, results and return on investment (Noe, 1999).
CHAPTER 2

REVIEW OF LITERATURE

This chapter is divided into five sections. The first section provides a definition of human resource development (HRD), reviews the fundamental concepts of system theory and presents a definition of training and learning. The second section reviews the fundamental concepts of social learning theory. The third section provides an overview of three training approaches, structured on-the-job training (S-OJT), on-the-job training (OJT) and classroom training, and also discusses advantages as well as disadvantages of these three training approaches. The fourth section provides an overview of the concepts of training outcomes and also defines self-efficacy and describes strategies to develop self-efficacy and the relationship of self-efficacy to training; in addition, methods which can be used to measure self-efficacy are discussed. The fifth section provides a conceptual framework for the information in the review of literature.

Human Resource Development

This section is divided into three parts. The first part describes the
fundamentals of human resource development. The second part discusses the fundamental concepts of the system approach, and the third provides definitions of training and learning.

Introduction to Human Resource Development

Human resource development (HRD) is the process of enabling individuals and groups to achieve certain accomplishments through training, organization development, and career development for the purpose of improving an organization’s performance (Jacobs, 1998). It has also been defined as a process to develop and unleash human expertise through organizational development and personnel training for the purpose of improving performance (Swanson & Holton, 2001).

Human resource development involves three fundamental areas, namely, individual development (personal), career development, and organizational development (Swanson & Holton, 2001). According to Swanson and Holton (2001), the term individual development refers to the development of new knowledge, skills and/or improved behaviors that can help individuals realize performance improvement. In other words, individual training concentrates on the gap between the current performance level of employees and the desired performance level (Van Wart, Cayer & Cook, 1993).

Organizational development (OD) is a complex set of strategies intended to change the beliefs, attitudes, values and structure of an organizations so that the organization can better adapt to new technologies, markets, and challenges, and the dizzying rate of change itself (Swanson & Holton, 2001). In other words, OD tends to
focus on helping employees change as the organization changes; it concentrates on changing the values, beliefs, or work norms of the organization’s members (Van Wart, Cayer & Cook, 1993). The distinctions between individual training and OD are outlined in Table 2.1.

As for career development, it has been defined as “the evolving sequence of a person’s work experiences over time” or “the combination and sequence of roles played by a person during the course of a lifetime” (Swanson & Holton, 2001). In other words, it is fundamentally concerned with change and evolution of a person’s roles. Thus, this area of HRD focuses on providing analysis to identify an individual’s interests, values, and skills to prepare for future jobs or positions (Swanson & Holton, 2001).

<table>
<thead>
<tr>
<th>Individual training and development functions</th>
<th>Organization development functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>● technical and procedural training</td>
<td>● coaching of individual organization members</td>
</tr>
<tr>
<td>● management training</td>
<td>● team building</td>
</tr>
<tr>
<td>● basic skills training</td>
<td>● intergroup team building</td>
</tr>
<tr>
<td>● general skills training</td>
<td>● organization building</td>
</tr>
<tr>
<td>● employee-enrichment training</td>
<td>● quality of work life enhancement</td>
</tr>
</tbody>
</table>

Table 2.1: Comparison between Individual Training and Organization Development

According to Jacobs (1990), human resource development draws upon five bodies of knowledge – education, economics, psychology, organizational behavior, and
system theory, which makes HRD a field of applied study. Similarly, Swanson (1998) proposed that overall the theory of HRD includes psychological, economic and system theories within an ethical frame. Swanson and Holton (2001) later provided a more detailed description of these components of HRD, pointing out specifically that the economic theory foundation includes scarce resource theory, sustainable resource theory, and human capital theory; that the psychology theory foundation includes Gestalt, behavioral, and cognitive psychology; and finally, that the system theory foundation includes general system theory, chaos theory, and futures theory.

Among these various bodies of knowledge, system theory is generally considered to be the key foundation in HRD and is fundamental to the training approaches discussed in this study. Thus, the system theory will be discussed in more detail in the following section.

*System Theory Applied to HRD*

According to the literature, system theory is the most important contributor to the body of knowledge comprising human resource development and provides the most logical and most comprehensive underlying structure for the HRD profession since it entails a viewpoint through which things are seen together rather than as isolated parts (Jacobs, 1989; Lee, 2004; Swanson & Holton, 2001).

The basic system theory model includes the (1) inputs, (2) processes, and (3) outputs of a system, as well as a feedback loop, as presented in Figure 2.1. Furthermore, basic system theory acknowledges that a system is influenced by its larger surrounding
According to system theory, all systems, natural or manmade, consist of related and interconnected parts that possess common features stemming from their inclusion in the system. Thus, the system theory suggests that the pieces of a system can not be viewed separately but are all interconnected as a dynamic whole (Jacobs, 2003).

These system ideas are the basis for many practical HRD tools for identifying where improvement is needed and for taking action. From a system view, the individual components of HRD are not isolated but linked to one another. In addition, system thinking allows HRD not only to view itself as a system but also to view its host or sponsoring organization as a system or as a subsystem within the larger organizational system (Jacobs, 1989, 2003; Swanson & Holton, 2001). As HRD activities are
understood not to be isolated but to be linked to one another and viewed as a system, all behavior in this system can potentially be predicted and controlled. Moreover, HRD is seen as a subsystem in the organization which needs to interconnect and cooperate with other subsystems of the organization to reach a common business goal. The application of system theory for HRD is shown in Figures 2.2 and 2.3.

When the system view is applied to designing a training program for development of employees’ competency, it can be said that the training program will be influenced by a lot of different factors in the broader systemic context, and will not be just training pertaining to directly related variables (Cannon-Bowers, Salas, Tannenbaum and Mathieu, 1995). In other words, with the system approach, the design of the training program is no longer focused narrowly on the training content or equipment but will take into consideration other factors such as trainees’ characteristics or the organizational environment. It is especially important that training be linked to business strategies to ensure improvement of performance (Noe, 1999).
Figure 2.2: HRD in the Context of the Organization and Environment (adapted from Jacobs, 1999; Swanson & Holton, 2001)
Figure 2.3: Systems Theory as Applied to HRD (adapted from Lee, 2004)
Training and Learning

Research supports the idea that investment in training and learning is related to increased productivity (Noe, 1999). In other words, education and training are important means that organizations use to develop employees’ work-related knowledge and expertise for the purpose of improving performance. In contrast to education and development, which refers to “a long-term planned growth and expansion of knowledge and expertise of people beyond the present job requirements,” training is focused more on a short-term planned effort by a company to facilitate learning of job-related competencies, which include knowledge, skills, or behaviors that are critical for successful job performance for new employees and those entering new job roles (Swanson & Holton, 2001; Noe, 1999).

Specifically, Davis and Davis (1998) provided a detailed definition of training as follows:

Training is the process through which skills are developed, information is provided, and attributes are nurtured, in order to help individuals who work in organizations to become more effective and efficient in their work. Training helps the organization to fulfill its purposes and goals, while contributing to the overall development of workers. Training is necessary to help workers qualify for a job, do the job, or advance, but it is also essential for enhancing and transforming the job, so that the job actually adds value to the enterprise. Training facilitates learning, but learning is not only a formal activity designed and encouraged by specially prepared trainers to generate specific performance
improvements. Learning is also a more universal activity, designed to increase capability and capacity and is facilitated formally and informally by many types of people at different levels of the organization. Training should always hold forth the promise of maximizing learning. (p.44)

Based on the definition above, designing an effective training program is essential in preparing for learning to occur.

Learning, according to Noe (1999), can be briefly defined as a relatively permanent change in human capabilities that is not a result of growth processes. Specifically, the change in human capabilities is related to some specific learning outcomes, which include verbal information, intellectual skills, motor skills, attitudes and cognitive strategies. Verbal information is an important type of workplace learning and includes names or labels, facts, and bodies of knowledge. Intellectual skills, sometimes known as procedural knowledge, refers to concepts and rules which are critical to solving problems, serving customers, and creating products. Motor skills involve coordination of physical movements. Attitudes are combinations of beliefs and feelings that predispose a person to behave a certain way. Finally, cognitive strategies regulate the processes of learning. They relate to the learner’s decisions regarding what information to attend to, how to remember the information and how to solve problems (Gagne & Medsker, 1996; Noe, 1999).

Research has indicated that the performance of learning outcomes will be influenced by numerous internal and external variables existing in a trainee’s learning process, which include attention, expectancies, selective perception, working storage,
encoding, long-term storage, retrieval, response generation (generalizing) and feedback (gratification) (Gagne & Medsker, 1996; Noe, 1999). Specifically, the internal variables that may affect a person’s learning outcomes in the learning process include a trainee’s cognitive ability, self-efficacy, learning motivation and so on (Noe, 1986). In addition, a trainee’s general intelligence factors seem to be critical in determining performance on novel tasks (Kraiger, Ford & Salas, 1993). The external variables include the design of the learning environment, the means of delivering the training content and use of technology (Jacobs, 2003; Noe, 1986, 1999).

In order to understand how people learn and also to try to explain different aspects of their learning processes, many learning theories have been presented by scholars. According to the literature, the learning theories include reinforcement theory, social learning theory, goal setting theory, need theories, expectancy theory, adult learning theory and so on (George & Jones, 1999; Wagner & Hollenbeck, 2005). Each learning theory explains people’s learning processes from a different perspective. For example, from the perspective of behaviorism, learning can be thought of as a process by which behavior changes as a result of experiences and viewed as primarily externally induced. Based on this concept, learning can be most effective when it is systematically arranged to reinforce the desired response (Davis & Luthans, 1980; Van Wart, Cayer & Cook, 1993).

According to cognitive learning theory, learning is a relatively permanent change in behavior or in behavioral potentiality that results from experience (Van Wart, Cayer & Cook, 1993). This theory holds that learning is partially externally induced
and partially mediated by the opportunity to use what is being learned, social
couragement to use it, and the learner’s ability to integrate and retrieve learning.
Differing from behaviorism and social learning theory, cognitive learning theory has
particular strength in contributing to problem-solving theory. For example, the
concepts of originality and creativity are better explained by cognitive learning theory
than by behaviorism and social learning theory.

Adult learning theory emphasizes that learning is a form of self actualization,
especially of the higher-level needs identified in Maslow’s hierarchy of needs, which
include the affective domain (feelings and hopes) (Van Wart, Cayer & Cook, 1993). In
this perspective, the learners become central in the learning process.

Social learning theory, which is fundamental in the training approaches
discussed in this study, will be described in more detail in the next section.

Social Learning Theory

Social learning theory, one of the theories that explain how people learn, was
proposed by Mischel, Mahoney, Meichenbaum, Staats, and Bandura (Davis and Luthans,
1980). The different interpretations of social learning theory are complex and difficult
to integrate. The work of Albert Bandura provides a complete interpretation of social
learning (Davis and Luthans, 1980).

Basically, social learning theory got its name from the emphasis the theory
places on learning from other people in a social environment – that is, social learning
(Davis & Luthans, 1980). From the perspective of social learning theory, learning is a
continuous, reciprocal interaction among cognitive, behavioral, and environmental determinants between people (see Figure 2.4). In other words, the person and the environment do not function as independent units but instead determine each other in a reciprocal manner. People produce the environmental conditions that affect their behavior in a reciprocal fashion. Experiences generated by behavior also partly determine what a person becomes and can do, which, in turn, affects subsequent behavior (Davis and Luthans, 1980). To put it simply, social learning theory holds that most people learn behaviors by observing others and then modeling the behaviors perceived as effective. In addition, it recognizes that behavior that is reinforced or rewarded tends to be repeated by observers (Noe, 1999).
Person

Symbolic Processes
Symbolic verbal/mental representations of reality help guide behavior

Self-Control
People control their own behavior to the extent that they rely on cognitive supports and manage relevant environment cues and consequences

Vicarious Learning
Most complex behavior is acquired by directly observing and imitating others in a social environment

Behavior

Environment

Figure 2.4: Model of Social Learning Theory (Davis & Luthans, 1980)
More specifically, there are four fundamental concepts in social learning theory. Bandura has suggested that any attempt to understand how people learn must take into account the impact on learning not only of reinforcement (either positive or negative) and punishment, but also of a person’s feelings and thoughts, that is, a person’s cognitive processes (Bandura, 1977; George & Jones, 1999). Cognitive processes, according to George and Jones (1999), are the various thought processes that people engage in. Such processes are related to how people explain the causes of their own or other people’s behavior and information they have received, that is, to attribution. In general, people attribute someone’s behavior to internal and external causes. An internal attribution assigns the cause of the behavior to some characteristic of the person performing the behavior and assigns credit or blame to the individual actor. An external attribution assigns the cause of the behavior to factors outside the individual. When people form attributions, they are engaging in a cognitive process to determine why a person has performed a specific behavior (George & Jones, 1999).

In addition to stressing the importance of cognitive processes, social learning theory also suggests that learning can take place vicariously – that is, through observation of how other people behave (George & Jones, 1999). In other words, while social learning theory agrees with the operant view that learning can occur as a result of directly experienced response consequences, it also places emphasis on recognition that learning can take place vicariously through observing and then reproducing the observed behavior (Davis & Luthans, 1980). According to Bandura (1969, 1976, 1977), learning through observation of modeled behavior is regulated by such interrelated sub-processes
as attention, retention, motor reproduction, and reinforcement (see Figure 2.5).

Specifically, the term attention suggests that persons cannot learn through observation unless they are aware of the important aspects of the model’s performance. The learner must observe the model when the model is performing the behavior, and the learner must accurately perceive the model’s behavior. After this, the learner must remember the behavior or skills that he or she has observed. This is the role of retention. Motor reproduction involves the learner’s trying out the observed behaviors to see if the behaviors reproduced result in the same reinforcement that the model received. In order to reproduce the skills or behavior modeled, the learner must have the skills and abilities prerequisite to performing the behavior. Finally, a behavior which results in positive outcomes is likely to be repeated by the learner in the future (George & Jones, 1999; Noe, 1999).

Besides focusing on learning through observation and modeling, social-learning theory proposes that people can reinforce or punish their own behaviors, that is, they can engage in self-reinforcement or self-control (Wagner & Hollenbeck, 2005). In other words, people can learn on their own even though there is no external pressure to do so. According to Bandura (1976), self-reinforcing events occur when (1) tangible rewards are readily available for the taking, (2) people deny themselves free access to those rewards, and (3) they allow themselves to acquire the rewards only after achieving difficult self-set goals.
Figure 2.5: Processes of Social Learning Theory (Bandura, 1986)
Finally, according to social learning theory, learning is also influenced by a person’s self-efficacy – a person’s belief about his or her ability to perform a particular behavior successfully. Self-efficacy has been shown to influence learning in three ways. First, it influences the activities and goals that individuals choose for themselves. Second, it affects learning by influencing the effort that individuals exert on the task. Finally, it affects the persistence with which a person tries to master new or sometimes difficult tasks (George & Jones, 1999). Figure 2.6 shows the significant components of social learning theory.
Information
Comes from the organization, its members, and the work situation, from observing others, from the learner’s past attainments and physiological states, and so on

Learner
Cognitive processes information

Vicarious Learning
Occurs when the learner observes and imitates a model

Self-control
Is evident when the learner learns on his or her own by setting a goal and engaging in self-reinforcement when the goal is reached

Self-efficacy
Leads the learner to believe he or she can perform successfully

Behavior

Figure 2.6: Social Learning Theory (George & Jones, 1999)
Training Approach

In this section, the general concept of training approach will be introduced. Then three popular training approaches, classroom training, unstructured on-the-job training and structured on-the-job training, will be discussed.

Introduction to Training Approaches

Based on different learning theories, more than ten training approaches which can be used in the design of training programs have been developed. These training methods include lecture, on-the-job training, structured on-the-job training, simulation, role play, behavior modeling, self-directed learning, apprenticeship, case studies, business games, group building methods, advance learning, team training, action learning and so on (Jacobs, 2003; Noe, 1999).

Each training approach has its own distinctive features and characteristics to facilitate training and help trainees learn. In other words, different training approaches can lead to different learning and training outcomes and, furthermore, difference in training effectiveness (Karsten and Loomba, 2002; Noe, 1999). For example, according to Jacobs, off-site training methods such as classroom training are better for attaining “knowledge” outcomes while on-the-job training methods seem to be better for “skill” outcomes (Jacobs, 1990). In addition, knowledge gained in lecture-based training is significantly related to verbal comprehension ability, while that gained in case-study-based training is significantly related to general reasoning ability (Carter, 2002).
As the training approaches vary in characteristics, elements, delivery locations and program design, a given training approach may be more effective than others in terms of acquisition of a specific task or training content domain (Jacobs, 2003). Table 2.2 presents a detailed comparative evaluation of different training methods (Noe, 1999, p.184). For each method, a high, medium, or low rating is provided for each characteristic of the learning environment, transfer of training, cost, and effectiveness.
Table 2.2: Comparison of Training Methods (Noe, 1999, p. 184)

<table>
<thead>
<tr>
<th>Learning outcomes</th>
<th>Presentation</th>
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<th></th>
<th></th>
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<th></th>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lecture</td>
<td>Video</td>
<td>OJT</td>
<td>Self-directed learning</td>
<td>Apprenticeship</td>
<td>Simulation</td>
<td>Case study</td>
<td>Business games</td>
<td>Role play</td>
<td>Behavior modeling</td>
<td></td>
</tr>
<tr>
<td>Verbal information</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Intellectual skills</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Cognitive strategies</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Attitudes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Motor skills</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
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</table>

| Learning environment      |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------|  |  |  |  |  |  |  |  |  |  |  |
| Clear objective           | Medium       | Low | High | High | High | High | Medium | High | Medium | High |  |
| Practice                  | Low          | Low | High | High | High | High | Medium | Medium | Medium | High |  |
| Meaningfulness            | Medium       | Medium | High | Medium | High | High | Medium | Medium | Medium | Medium |  |
| Feedback                  | Low          | Medium | High | Medium | High | High | Medium | High | Medium | High |  |
| Observe and interact with others | Low | Medium | High | Medium | High | High | High | High | High | High |  |
| Transfer of training      | Low          | Low | High | Medium | High | High | Medium | Medium | Medium | High |  |
| Cost                      |  |  |  |  |  |  |  |  |  |  |  |
| Development               | Medium       | Medium | Medium | High | High | High | Medium | High | Medium | Medium |  |
| Administrative            | Low          | Low | Low | Medium | High | Low | Low | Medium | Medium | Medium |  |
| Effectiveness             | High for verbal information | Medium | High | Medium | High | High | Medium | Medium | Medium | High |  |
|                           | S-CIF        |  |  |  |  |  |  |  |  |  |  |
Since different training approaches can lead to different training outcomes, by comparing the characteristics of different training approaches, scholars have divided them into several distinct categories. For example, based on different delivery location, the training can be designated as off-the-job training or on-the-job training. Based on the degree of planning, the training can theoretically be divided into two forms: structured and unstructured (Cullen, Sawzin, Sisson & Swanson, 1976; Jacobs, 2007; Rothwell, 1991; Wilson, 1980).

Specifically, off site job training refers to a training process that usually takes place in a training facility such as a classroom or specially equipped site used primarily for training, either on or off the firm’s premises (Wilson et al., 1980). In contrast, on-the-job training (OJT) is a training process that takes place primarily on the job during actual production operations (Jacobs, 2007; Noe, 1999; Wilson et al., 1980).

Structured training is a kind of training that has a high degree of planning. In other words, structured training can be described as the training of a new worker through a systematically developed educational program. Such a description suggests the utilization of a system approach to develop a training program in which the training outcomes are specified at the beginning of the training and the training methods used to achieve the outcomes are specified after the desired outcomes have been determined (Cullen, Sawzin, Sisson & Swanson, 1976). In contrast, unstructured training takes place when no purposeful instructional plan is used in training a new worker. In addition, unplanned or unstructured training is characterized by a lack of concern about the methods used for learning and the outcomes of the learning (Jacobs, 2003; Wilson et
Therefore, according to Jacobs, the interaction between the two dimensions – degree of planning and location of the training and learning – provide a framework for understanding different training approaches (see Figure 2.7). In Figure 2.7, the unplanned/informal cell represents the unstructured learning that constitutes much of the employee learning occurring in organizations, such as unstructured OJT. The planned/informal cell represents an opportunity to have a planned program with predictable outcomes, but conducted in the work settings. Structured on-the-job training (S-OJT), coaching and mentoring are some examples of planned/informal training. The unplanned/formal cell represents training experiences that may have a clear intent, but in which it is uncertain how the information relates to the employee’s expectations. Finally, the planned/formal cell represents the types of off-the job training approaches that have been characteristic of organizational training programs, such as classroom training and web-based training programs. Taken together, the four cells provide a relatively comprehensive view of how to distinguish the various training and learning programs used in organizations (Jacobs, 2007).
Figure 2.7: Training and Learning in the Workplace (Jacobs, 2007)
Types of Training Approaches

Surveys of industry training practices have consistently indicated that both off-site classroom training and on-the-job training are frequently used training approaches for many different jobs (Jacobs, 2003; Noe, 1999; Wilson et al., 1980). These training approaches will be discussed in the following sections.

Classroom Training

Recent surveys show that the number of organizations using formal classroom training has increased dramatically in the past thirty years. It has been estimated that more than $30 billion is spent for off-the-job training programs every year (Jacobs, 2003; Noe, 1999).

According to Jacobs (2003), classroom training is off-job training which provides group-based learning opportunities on a variety of topics at a site other than the location where the work is actually done. According to Yelon (1992, 1999), there are three distinguishable attributes of classroom instruction. First, classroom training requires a live instructor to deliver the training. Second, classroom instruction involves the teaching of groups of students. Third, it requires the physical separation of the classroom from the workplace. In other words, classroom training is a planned training method with formal presentation to a group of trainees, which occurs at a location designed to make learning happen rather than the actual job setting. The system approach can be used to develop the training, and the expected training outcomes will be specified at the beginning of the training (Jacobs, 2003).
According to Yelon (1999), the purpose of classroom instruction is to teach workers the knowledge required to perform the job. A survey conducted by Lakewood Publications, publisher of Training Magazine, suggested that lecture is the most frequently used training method in classroom training (Noe, 1999). Most commonly, the trainer communicates through spoken words what he or she would like the trainees to learn, and the trainees are passive, sitting in a classroom to receive the training content. As a result, trainees rarely have opportunities to practice the tasks learned in the training and seldom receive much feedback from the trainer, which can reduce the training effectiveness of classroom training (Noe, 1999; Rothwell, 1991).

In order to increase training effectiveness and overcome such problems, the lecture is often supplemented with question-and-answer periods, discussion, or case studies. In addition, for this type of training, the instruction is only one segment of a comprehensive instructional approach to performance change. The other two segments are an introduction and a conclusion to the training. Together, these three segments contain eight elements that promote retention and transfer (Yelon, 1999):

1. motivation to learn the performance,
2. orientation to establish mental readiness to learn,
3. acquisition of knowledge,
4. successful application of knowledge through practice,
5. continuous improvement through feedback and revision,
6. integration of each task performance with others learned,
7. motivation to use the performance,
8. evaluation of job readiness.

Specifically, to help trainees benefit from the instruction, the trainer or instructor needs to provide an introduction that will capture their attention and motivate them to receive training. During the instructional process, the trainer explains what the trainees need to know and, in addition, demonstrates the skill and provides opportunities for trainees to practice the desired performance in order to increase learning and training effectiveness. In other words, the instruction segment is comprised of the components of explanation, demonstration, feedback and remediation. After the introduction and instruction, the trainer has to finish the training with a meaningful conclusion. The conclusion should summarize the main ideas of the training, motivate the trainees to use the learned competency on the job and also evaluate the trainee’s training performance. To increase the effectiveness and efficiency of classroom training, the trainer must give attention to each of these eight instructional elements.

On-The-Job Training

In addition to training in the classroom, a considerable amount of learning occurs as a result of training that is conducted in the work setting itself (Jacobs, 2003). Carnevale and Gainer (1988) estimated that, in the U.S., companies spend from $90 to $180 billion a year on informal on-the-job training compared to $30 billion for formal off-the-job training. Companies use OJT for training newly hired employees, upgrading experienced employees’ skills when new technology is introduced, cross-training employees within a department or work unit, and orienting transferred or
promoted employees to their new jobs (Jacobs, 2003; Noe, 1999).

On-the-job training (OJT), according to Jacobs (2003), is a training process in which one person, most often the supervisor or lead person of a work area, passes job knowledge and skills to another person. In other words, the term refers to a process through which new or inexperienced employees learn by observing peers or managers performing the job and trying to imitate their behavior (Clements and Josiam, 1995; Noe, 1999).

On-the-job-training can be traced back to a four-step method of OJT which was proposed by Charles R. Allen during World War I (Wilson et al., 1980). Allen’s method of training shipbuilders influenced the future direction of OJT efforts (Jacobs, 2003). According to the literature, OJT includes the following steps (Rothwell & Kazanas, 1990, p.13):

- Step 1. Preparation - Show: demonstrate to learners what they should do.
- Step 2. Preparation - Tell: explain to learners what they should do and why they should do it.
- Step 3. Application - Do: allow learners to try out the work.
- Step 4. Inspection - Check: follow up with learners, providing praise for what they do right and specific feedback on what they should do to improve.

Specifically, before instruction begins, the trainer needs to conduct a job breakdown, make a course outline and arrange to have equipment and materials ready. Then, the first step of OJT training prepares the trainees so that they will be ready for
training. The trainers may conduct an informal orientation to bring learners together, to find out what each learner already knows about the job, and so on. The second step is to conduct a presentation to tell trainees about the skill and show it to them. The third step is to provide an opportunity for the trainees to apply or practice what they have learned from the trainers and also to correct errors. The last step is “follow-up”, that is, providing feedback to trainees to praise their good work or correct any poor work (Wilson et al., 1980).

During World War II, Allen’s four step formula was expanded to seven steps, which are now considered classic (Jacobs, 2003; Rothwell & Kazanas, 1990). These seven steps are:

1. Show the worker how to perform the task.
2. Explain the key points.
3. Let the worker watch the instructor do it again.
4. Let the worker do the simple parts of the job.
5. Let the worker perform the whole job.
6. Let the worker perform the whole job – but watch him or her.
7. Put the worker on his or her own (Jacobs, 2003).

These seven steps have remained essentially unchanged since World War II.

*Evaluation of the OJT Approach.* Since OJT is a popular training method and widely used by organizations, a number of scholars have evaluated its effectiveness and efficiency.

According to their studies, the frequent use of OJT is based on three incentives:
the favorable relationships between training costs and benefits, the possibility to train just-in-time, and the expectation of positive transfer of what was learned to the employee’s own work situation (van der Kink & Strumer, 2002). Furthermore, OJT requires less investment in time or money for materials, trainees’ salary, and instructional design since the employees learn the required job knowledge and skills through managers or peers directly (Jacobs & Osman-Gani, 1999; Wilson et al., 1980).

Despite its many advantages, there are several drawbacks in using OJT to deliver training to trainees. A major weakness of OJT is that it is usually carried out in an unstructured form (DeJong, 1993; Jacobs, 2003; Kainen, Begley & Maggard, 1983; Noe, 1999; Wilson et al., 1980). With such an unstructured form, trainees often receive insufficient advance information about the tasks to be learned because of the absence of coordination between the different stages of the training process. Moreover, unstructured OJT can result in poorly trained employees or employees who use ineffective or dangerous methods to produce a product or provide a service (Noe, 1999). In addition, unstructured OJT leads to a slower transfer process (van der Klink & Streumer, 1997).

The effectiveness of OJT in terms of cost and benefits has also been investigated (Jacobs, 1990, 2003; van der Kink & Streumer, 2002). In these studies, it was found that OJT does not always have favorable results, and that it characteristically has a number of problems that can cause ineffectiveness, which are summarized as follows:
• The desired training outcomes are rarely, if ever, achieved, and when they are, all trainees rarely achieve the same outcomes.
• The training content is often inaccurate or incomplete.
• Experienced employees are seldom able to communicate effectively when they conduct the training.
• Experienced employees use different methods each time they conduct the training, and not all the methods they use are equally effective.
• Employees are often unsure about whether they are allowed to train others.
• Many employees fear that sharing their knowledge and skills will reduce their own status as experts and possibly even threaten their job security (Jacobs, 2003).

As a result of these potential difficulties, many scholars have concluded that OJT is not an effective training method (van der Kink & Streumer, 2002) and claimed that on-the-job training needs to be structured and planned before instruction begins (Cullen, Sawzin, Sisson & Swanson, 1976, 1978; Jacobs, 2003). This has led to the emergence of structured on-the-job training, and numerous studies have been conducted to compare the effectiveness of unstructured OJT with that of structured OJT.

_Structured on-the-job training (SOJT)_

Before World War I, structured OJT, as it is now known, was nonexistent (Rothwell and Kazanas, 1990). Since the 1970s, a number of scholars have claimed that OJT needs to be structured and have proposed ways to increase its effectiveness
(Gold, 1981; Wilson et al., 1980). Based on the research efforts of Jacobs and others (Jacobs, 1990; Jacobs and Jones, 1995; Jacobs and McGiffin, 1987) and Rothwell and Kazanas (1990, 1994), it has become commonplace to distinguish between unstructured and structured on-the-job training (DeJong & Versloot, 1999).

A number of scholars have tried to define different forms of on-the-job training (DeJong, 1991; Jacobs, 1992; Jacobs & McGiffin, 1987; Rothwell & Kazanas, 1990; Versloot & DeJong, 1994). According to Jacobs (1992), structured OJT is “the one-to-one process of providing the knowledge and skills to perform a specific task within a job.” Jacobs distinguished SOJT as a form of training that: occurs in the actual workplace, makes use of training objectives and plans, requires the active involvement of a trainer, uses printed materials and job guides, and employs a system approach (Jacobs, 1992). In a later publication (2003), he redefined SOJT as “the planned process of developing competence on units of work by having an experienced employee train a novice employee at the work setting, or a location that closely resembles the work settings” (p. 28).

The structured approach used by Jacobs and Jones can be characterized as professional didactical, as it stresses the importance of systematic instruction of “new employees” by trained experienced experts at or near the work site (Versloot, De Jong & Thijssen, 2001). In other words, Jacobs applied the system theory to S-OJT so that S-OJT can be viewed as a system which consists of training inputs, training process and training outcomes, and which is affected by organizational context (see Figure 2.8). Some scholars have argued that S-OJT as defined by Jacobs may be suitable and
effective for less educated frontline employees in large machine-bureaucracies but may be less suitable for managers and staff people in that type of organization, and even less suitable for professionals working in professional bureaucracies (Versloot & DeJong, 1994). However, this viewpoint is not widely accepted because many studies have indicated that S-OJT can be used successfully for delivering managerial training as well (Jacobs, 2003).

![Diagram of the S-OJT System](Jacobs, 2003, p 31)

**Training Inputs:**
- Novice employees
- Experienced employees
- Training location in the work setting
- Unit of work to be learned
- Communications technology

**Training Process:**
- Get ready to train
- Deliver the S-OJT module
- Ensure the trainee has learned

**Training Outcomes:**
- Training performance
- Work performance
- Trainee development

Figure 2.8: The S-OJT System (Jacobs, 2003, p 31)
According to the literature, applying structured on-the-job training requires a number of actions (Jacobs, 2003). Jacobs specified six steps in the S-OJT process: 1. deciding whether to use S-OJT; 2. analyzing the tasks to be learned; 3. selecting, training, and managing the trainers; 4. preparing training modules; 5. delivering the S-OJT; and 6. evaluating and troubleshooting the structured OJT (see Figure 2.9).

Looking at these steps in more detail, the first step is to determine whether S-OJT would be an appropriate training approach. If S-OJT has been deemed appropriate, the second step is to analyze and identify the learning tasks. Task analysis is the process of making explicit the behaviors, performance outcomes, prerequisite knowledge, skills, abilities, and other information relevant to a job task. This is an important step because the information gathered in this step is used to prepare training modules, which are organized packages that contain all the information necessary for delivery of training.

The third step is to select the SOJT trainer. In OJT training, those who deliver training have traditionally been supervisors or frontline employees, such as lead persons who are recognized as experts. In S-OJT training, however, every trainer should have some measure of such qualities as adequate competence in the work, specialized training and education, willingness to share, the respect of his/her peers, interpersonal skills, literacy skills, and so on. Only an experienced employee who has appropriate competence in the work and in the other qualities required for being an S-OJT trainer can be selected.

The fourth step is preparation of an organized package that contains all the
information necessary for delivery of training. The information used to prepare the training modules has been gathered through the task analysis. The components of the modules include: title, training objectives, training resources, training content, performance tests, feedback forms and reference information. In S-OJT training, every trainee receives a module so that he/she can preview the training content and objectives prior to training, follow the trainer during training, and review what he/she is expected to perform after training.

The fifth step is delivery of the S-OJT training. The design of the instructional events in S-OJT is mainly based on the principles of social learning theory (Jacobs, 2003; Noe, 1999). The five training events of S-OJT are: preparing the trainee, presenting the training, requiring a response, providing feedback and evaluating performance (Jacobs, 2003). According to Jacobs (2003), the first event focuses the trainee’s attention on the topic at hand, creates an atmosphere conducive to learning, gives meaning to the topic, and establishes standards of performance. The second event serves to guide the attention of the trainee toward specific parts of the training content. The third event calls for trainees to respond in a meaningful way to the model that has been presented. In the fourth training event, the trainer provides trainees with pertinent information about the accuracy and adequacy of their responses. The fifth training event is a summative judgment of the adequacy of the trainee’s performance (Jacobs, 2003).

The final step in the S-OJT process is evaluation of the structured OJT training program. The main purpose of this action is to evaluate whether the SOJT training has
Performance improvement process determines that the cause of the gap is a lack of competence.

1. Decide whether to use S-OJT
2. Analyze the work to be learned
3. Develop the S-OJT trainers
4. Prepare the S-OJT modules
5. Deliver S-OJT
6. Evaluate and troubleshoot S-OJT

Figure 2.9: The S-OJT Process (Jacobs, 2003, p 36)
Structured OJT Research

Since S-OJT was proposed by Jacobs et al. in 1987, it has become widely used by organizations. As a result, there has been a marked increase in research on structured OJT. Some researchers have discussed the nature of structured OJT as it appears in various organizations. Another line of researchers have described the financial benefits derived from using structured OJT as compared to other training approaches such as unstructured OJT and classroom training.

Nature of Structured OJT. The research related to the nature of structured OJT suggests that organizations consider this training approach to be an important part of their training efforts (Jacobs, 1999). For example, in order to understand the nature of the structured OJT programs of the organizations and also their commitment to preparing their employees to deliver the SOJT training, Rothwell and Kazanas (1990) sent a written questionnaire to 500 members of the American Society for Corporate Training and Development (ASTD); 127 organizations responded (26%). The results showed that supervisors deliver most structured OJT programs, especially in manufacturing organizations. Furthermore, classroom training on SOJT is typically seven hours or longer, with topics such as “showing learners how to perform the task,” “having learners perform the task with the trainer observing,” and so on.

DeJong (1993) and DeJong and Versloot (1994, 1999) also conducted a series of case study analyses of structured on-the-job training programs in the Netherlands and in Dutch firms. These case studies provided insights into the actual composition of structured OJT programs in those organizations and suggested that these S-OJT training
programs were highly valued in these organizations. In addition, significant use of OJT programs has been found in industrial companies, banks, and insurance companies.

Financial Benefits. Several studies have investigated the financial benefits of structured OJT by comparing this approach with other training approaches. The focal question in this research is “what are the financial benefits of increasing the efficiency of training?” (Jacobs, 1999, 2003).

To explore this question, Jacobs and McGiffin (1987) conducted a field study in “a large company that processes and packages a wide range of edible oils” (p.9). Their attention was focused on the job title Lab Tech III, which represented entry-level salaried employees. At the beginning of the study, these employees received an average of 12 weeks of unstructured OJT given by their supervisors. During their field work, Jacobs and McGiffin introduced three changes in the company’s practices: (1) the supervisors were trained in SOJT, (2) the job of Lab Tech III was analyzed and the results of the analysis were written up as a training manual suitable for self-instruction on the job, and (3) checklists (job aids) were developed to help workers carry out their tasks and assess their own performance and progress. The results showed that S-OJT made it possible to reduce the training time for new lab technicians from twelve weeks to three weeks. In other words, the difference between the two approaches, unstructured OJT versus structured OJT, in the time required to reach a standard performance was determined to be approximately nine weeks. In addition, the annualized savings in wages and benefits of using the structured OJT approach was about $10,000 in the first year.
Jacobs, Jones and Neil (1992) compared the forecasted financial benefits of unstructured and structured forms of on-the-job training across three task settings in a manufacturing company. They reported that structured OJT was able to provide approximately twice the financial benefits of unstructured OJT in terms of the value of employees’ performance outcomes and, furthermore, had five times the efficiency compared to unstructured OJT in terms of the time required to achieve the training objectives.

On the basis of such studies, it has been claimed that structured OJT has greater efficiency and a greater influence on the quality of the work than unstructured OJT (Jacobs, 1994). In other words, when new employees learned certain tasks through structured OJT, the quality of their work was higher than when they learned the tasks through unstructured OJT. In addition, the cost of reworking was reduced by at least two-thirds when employees learned tasks through structured OJT.

To summarize, it can be concluded that structured on-the-job training (SOJT) is superior to unstructured OJT and that its benefits include reduced overall learning time, reduced overall training costs, higher transfer rate, heightened new-worker job confidence, high learning success on job task tests, a positive organizational climate due to healthy interactions among workers in a learning-working context, etc. (Jacobs, 2003). In addition, research has indicated that structured OJT can be used successfully to deliver managerial, technical, and awareness training. These three types of training can help to provide trainees with the ability to plan, direct, and manipulate objects/equipment/tools, and also to inform the trainees about ideas and processes (Jacobs, 2003).
Training Evaluation

In this section, the general concept of training outcomes (criteria) will be introduced. Then, the construct of self-efficacy will be discussed. Finally, the relationship between self-efficacy and training and measurement of self-efficacy will be described.

Training Outcomes

Training evaluation is the systematic collection of data regarding the success of training programs. According to Campbell (1988), no matter what the purposes or objectives of training programs are, the critical issue of evaluation is whether trainees have learned the material covered in training (learning issues) and, in addition, whether accomplishment of those objectives results in enhanced performance on the job (transfer issues) (Kraiger, Ford & Salas, 1993).

Traditionally, most of the research on training evaluation has relied on Kirkpatrick’s four-level framework to explain the effectiveness of training (Tracey, Hinkin, Tannenbaum, and Mathieu, 2001). The four-level criteria include reactions, learning, behavior and results (Kraiger, Ford & Salas, 1993; Noe, 1999). Specifically, the first level of criteria, reactions, refers to the degree of trainees’ satisfaction with the training program. In other words, reaction may best be defined as how well the trainees liked a particular training program. The second level of criteria, learning, refers to the degree to which trainees acquire knowledge, skills, principles and facts during the training process. The third level of criteria, behavior, refers to the degree to which trainees transfer what they have learned to the job and how much improvement of
behavior occurs on the job as a result. The final level of criteria, results, refers to the financial performance achieved by trainees after the training (Gagne & Medsker, 1996; Noe, 1999).

Recently, a number of scholars have argued that more comprehensive models of training criteria are needed, and several new models for evaluating the effectiveness or efficiency of a training program or a training approach have been proposed (Kraiger, Ford & Salas, 1993; Noe, 1999). For example, recent training research suggests that training reaction, which is one of the four criteria in Kirkpatrick’s model, should specify at least two different types of reaction, that is, affective and utility reactions. The term affective reaction refers to the extent to which a trainee likes or enjoys the training, which is similar to what Kirkpatrick defined as training reaction. Utility reaction refers to the perceived applicability or usefulness of the training for subsequent job performance (Tracey, Hinkin, Tannenbaum & Mathieu, 2001).

In addition, Noe (1999) proposed that training outcomes should include five categories: cognitive outcomes, skill-based outcomes, affective outcomes, results and return on investment. He especially emphasized that affective training outcomes such as attitudes, motivation or self-efficacy would be useful when evaluating training programs. Specifically, according to Noe (1999), cognitive outcomes refers to the degree to which trainees are familiar with the principles, facts, techniques, procedures, or processes emphasized in the training program. Skill-based outcomes include acquisition or learning of skills and use of skills on the job (skill transfer). Affective outcomes, as mentioned, include attitudes, motivation, self-efficacy and so on. Results

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are a determination of the payoff of the training program for the company, and return on investment refers to a comparison of the training’s monetary benefits with the cost of the training.

Further, Kraiger, Ford, and Salas (1993) developed a construct-oriented approach to training evaluation that classifies learning outcomes into three major categories: cognitive learning, skill-based or behaviorally-based learning and affective learning. In each category, they identified a variety of specific outcomes that may be differentiated by level. Figure 2.10 presents an overview of the three learning outcomes.

More specifically, according to Kraiger, Ford, and Salas (1993), the learning constructs most relevant for the cognitive category include verbal knowledge, knowledge organization and cognitive strategies. Verbal knowledge mainly refers to declarative knowledge, that is, information about what needs to be studied. Developing a foundation of verbally based, task-relevant knowledge is the initial stage of training. After skill learning advances beyond the initial stage, the learners begin to focus more on procedural knowledge, that is, information about how. Concurrent with an increase in procedural knowledge is the development of a meaningful structure for organizing knowledge. Thus, knowledge organization indicates a higher level of cognitive development related to how people organize the knowledge stored in their memory. The final category of cognitive measures in this model is cognitive strategies. For Kraiger et al. (1993), cognitive strategies refers to a broad range of mental activities that facilitate knowledge acquisition and application, including mainly planning, monitoring,
and revising goal-appropriate behavior or understanding the relationship between task demands and one’s capabilities.

Skill-based outcomes include skill compilation and automaticity. Compilation represents a basic level of behavioral learning that may be assessed in terms of performance speed or number of performance errors. Automaticity reflects a higher level of learning and can be measured in terms of interference problems and the ability to perform multiple tasks simultaneously (Kraiger, Ford, and Salas, 1993; Tracey, Hinkin, Tannenbaum & Mathieu, 2001). Finally, attitude outcomes and motivational outcomes such as disposition, self-efficacy, and goal setting are identified as key affective learning outcomes (Kraiger, Ford, and Salas, 1993).

In this study, emphasis will be placed on the construct of self-efficacy. In other words, the construct of self-efficacy will serve as a training outcome to be evaluated (dependent variable) when comparing the effectiveness of different training approaches.
Learning

Cognitive outcomes
- verbal knowledge
- knowledge organization
- cognitive strategies

Skill-Based outcomes
- compilation
  1. proceduralization
  2. composition
- automaticity

Affective outcomes
- attitudinal
- motivational
  1. motivational disposition
  2. self-efficacy
  3. goal setting

Figure 2.10: A Preliminary Classification Scheme for Learning Outcomes (Kraiger, Ford & Salas, 1993)
**Self-Efficacy**

Since the late 1980s, self-efficacy, part of Bandura’s social learning theory, has received increasing attention from organizational researchers (Schwoerer, May, Hollensbe and Mencl, 2005). Bandura (1986) defined self-efficacy as:

people’s judgments of their capabilities to organize and execute courses of action required to attain designated types of performances. It is concerned not with the skills one has but with the judgments of what one can do with whatever skills one possesses. (p. 391)

A somewhat broader definition would be that provided by Luthans (2002, p.60):

“Self-efficacy refers to an individual’s conviction (or confidence) about his or her abilities to mobilize the motivation, cognitive resources, and courses of action needed to successfully execute a specific task within a given context.” It has also been described as one’s belief in one’s capability to perform a specific task (Gist, 1987).

Based on the literature and the definitions above, self-efficacy has been primarily conceptualized as a situation-specific belief by many scholars. As such, it focuses on a given task, skill or behavior and may provide an explanation for individual differences when a number of persons face a narrowly and clearly defined task, for example, learning computer software skills (Gist, Schwoerer & Rosen, 1989), idea generation skills among managers (Gist, 1989), complex interpersonal skills (Gist, Stevens, & Bavetta, 1991) and negotiation skills (Stevens, Bavetta, & Gist, 1993). Such specific self-efficacy (SSE) is viewed as a relatively malleable independent variable. In other words, it is treated as a state that can be developed and effectively managed.
Although self-efficacy has been primarily conceptualized as a situation-specific belief, there is evidence that the experiences of personal mastery that contribute to efficacy expectancies generalize to actions other than the target behavior (Bandura et al., 1977; Sherer et al., 1982). That is, an individual with a history of varied and numerous experiences of success may be expected to have greater positive self-efficacy expectancies than individuals with experiences of limited success and of failure. While strong efficacy expectations are developed through repeated success, the persons will carry their positive self-efficacy expectancies into a greater variety of situations. As a result, improvements in behavioral functioning transfer not only to similar situations but to activities that are substantially different from those on which the treatment was focused (Bandura, 1977). Thus, as the conceptualization of self-efficacy becomes more general, there is a shift in focus from specific self-efficacy toward the individual differences construct of general self-efficacy (GSE).

According to the literature, general self-efficacy reflects a generalization across various domains of functioning in which people judge how efficacious they are (Luszczynska, Scholz and Schwarzer, 2005). Put simply, it refers to a general belief in one’s ability to succeed (Sherer et al., 1982). Unlike specific self-efficacy, which is viewed as a malleable independent variable, GSE has been commonly viewed as a stable traitlike characteristic, which is stable over time and across situations, by many scholars. For example, Eden (1988) claimed that GSE is a stable traitlike characteristic, and Eden and Kinnar (1991) investigated GSE as an individual difference and moderator of
training effects. Luthans (2002) also indicated that general self-efficacy should be treated as a trait, which can not be developed and effectively managed, instead of a state.

Although GSE was originally viewed as a stable traitlike characteristic, many scholars now argue that GSE can be changed and developed like SSE. Eden and Aviram (1993) claimed that GSE could be considered malleable like SSE because their updated research results showed that people who were unemployed and low in GSE benefited most from intervention, which increased their job search activities and the likelihood of their reemployment. Schwoerer et al. (2005) examined the effects of training experience on general self-efficacy (GSE), work-specific self-efficacy (SSE), and performance expectancy. Consistent with the results of Eden and Aviram (1993), they found that training increased GSE, SSE and performance expectancy. In other words, they found that trainees’ general self-efficacy can be affected by training experiences and learning.

To summarize, according to Bandura (1977) and Sherer et al. (1982), individual differences in general self-efficacy expectations do exist. Although specific self-efficacy has been widely discussed by many scholars, relatively little is known about the variable of general self-efficacy itself or about how a person’s general self-efficacy influences his or her training outcomes and job performance and how it is affected by training experiences and learning. In addition, there is little work that has compared the utility of measures of general and specific self efficacy or their respective malleability. Since Eden (1988) has recommended using both SSE and GSE in research at the same time to explore related issues, the researcher used both SSE and GSE in this study.
Furthermore, the researcher sought to investigate whether the trainees’ general self-efficacy correlated with their perceptions of their self-efficacy to achieve training outcomes after training delivered by different training approaches.

**Developing Self Efficacy**

Self-efficacy, according to the literature, is not an unchangeable construct. On the contrary, it can be developed and managed through many means. Bandura (1977) claimed that expectations of personal efficacy (self-efficacy) are based on four major sources of information: performance accomplishments, vicarious experience, verbal persuasion, and physiological states. Specifically, according to Bandura, a first source of self-efficacy is personal mastery experiences. That is, successes raise mastery expectations; repeated failures lower them. In other words, strong efficacy expectations can be developed through repeated success. When positive efficacy expectations have been developed, the negative impact of occasional failures is likely to be reduced.

A second source of self-efficacy is vicarious experience, that is, observation of others. Specifically, people do not rely on experienced mastery as the sole source of information concerning their level of self-efficacy. Seeing someone else perform successfully on a task can generate expectations in observers that they too will improve if they intensify and persist in their efforts and also increase their sense of self-efficacy with respect to the same task. In other words, in the processes of vicarious experience, observers will persuade themselves that if others can perform successfully on a task, they should be able to achieve at least some improvement in performance (Bandura, 1977).
A third source of self-efficacy is verbal persuasion, that is, one person convincing another person that he or she can master a behavior will increase that person’s perceptions of self-efficacy (Bandura, 1977; Noe, 1999). In other words, people can be led to believe they can cope successfully with what has overwhelmed them in the past through continuing encouragement and suggestion (Bandura, 1977).

Emotional arousal is the fourth source of self-efficacy identified by Bandura (1977). According to Bandura, people rely partly on their state of physiological arousal in judging their anxiety and vulnerability to stress. Because high arousal usually debilitates performance, individuals are more likely to expect success when they are not beset by aversive arousal than if they are tense and viscerally agitated (Bandura, 1977). In other words, a person who expects to fail at some task or to find something too demanding is likely to experience certain physiological symptoms -- pounding or racing heart, feeling flushed, sweaty hands, headaches, and so on. The particular symptoms vary from person to person, but over time become associated with doing poorly. If the symptoms start to occur in any given situation, self-efficacy for dealing with that situation may drop (George & Jones, 1999).

Logical verification is another source of self-efficacy identified by Bandura. That is, people can generate perceptions of self-efficacy at a new task by perceiving a systematic relationship between the new task and an already-mastered task (Noe, 1999; Wagner & Hollenbeck, 2005).

Besides the methods proposed by Bandura, recently a number of researchers have placed emphasis on the importance of training as a strategy to increase self-efficacy.
For example, Luthans indicated that positive self-efficacy should be treated as a “state” that can be developed and effectively managed through training (Luthans, 2002). Dunlap (2005) mentioned that instructional strategies can serve as sources of efficacy information that enhance self-efficacy development. Accordingly, Gist and Mitchell presented three strategies for developing self-efficacy: (1) providing information that gives the individual a more thorough understanding of the task attributes, task complexity, and task environment (primarily through the use of mastery and modeling experiences), and the way in which these factors can best be controlled; (2) providing training that directly improves the individual’s abilities or understanding of how to use his or her abilities successfully in performing the task (primarily through the use of mastery, modeling, and persuasion experiences); and (3) providing information that improves the individual’s understanding of behavioral, analytical, or psychological performance strategies or effort expenditure required for the task performance (primarily through the use of modeling, feedback and persuasion) (Gist and Mitchell, 1992, p. 203).

In addition, scholars have conducted several experimental studies to examine the effects of training on trainees’ self-efficacy. The research results have shown that training does increase trainees’ self-efficacy. For example, Frayne and Latham (1987) and Latham and Frayne (1989) found that self-management training for job attendance increased trainees’ self-efficacy for exercising influence over their behavior and perceived ability to attend work. Gist (1989) investigated the influence on self-efficacy and performance of two training methods in training for innovative problem solving. He found that cognitive-modeling training in innovative problem solving increased the
self-efficacy of manager trainees. In addition, he found that a training method comprised of cognitive modeling with practice and reinforcement generated significantly higher participant self-efficacy than a method involving lecture and practice alone (Gist, 1989). Tennenbaum, Mathieu, Salas, and Cannon-Bowers (1991) found that military trainees who completed an 8-week socialization-type training program for learning the required behaviors and supportive attitudes needed to participate as a member of the Navy demonstrated significant improvement in self-efficacy.

**Self-Efficacy and Training**

Research on training and self-efficacy has found not only that training can increase trainees’ self-efficacy, but also that self-efficacy is an important variable for understanding training effectiveness (Saks, 1995). According to the literature, self-efficacy has been found to be related to training outcomes. That is, self-efficacy will determine how much effort an individual will expend and how long he or she will persist in the face of obstacles or stressful experiences when receiving the training (Wagner and Hollenbeck, 2005). Thus, individuals with high self-efficacy believe that they can master (or have mastered) some specific task, and they will put considerable effort into doing so. In contrast, a person with low self-efficacy will withdraw from the learning quickly both psychologically and physically and will also have a tendency to doubt that he can master the content of a training program to learn the new knowledge and skills (Gist et al., 1989, 1991; Noe, 1999; Saks, 1994; Tracey, Hinkin, Tannenbaum and Mathieu, 2001).
In addition, studies have found evidence that self-efficacy functions as a moderating variable for the effect of training method on training outcomes. For example, Gist, Schwoerer and Rosen (1989) compared the modeling training method with the tutorial training method in the context of a field experiment involving 108 university managers. The results led to the conclusion that relative to a tutorial approach, a behavioral modeling approach yielded higher self-efficacy scores and higher performance on an objective measure of computer software mastery. In other words, behavioral-modeling trainees with low initial computer self-efficacy reported greater posttraining software self-efficacy in comparison with trainees who received tutorial training.

Moreover, Gist and others have argued that self-efficacy functions as an important mediating or intervening variable for the effects of training on training outcomes. Specifically, Gist et al. examined the effects of self-efficacy training on training task performance, and their results showed strong support for the significance of self-efficacy as an intervening variable between training and task performance. The researchers concluded that efficacy-based training can have a positive effect on task performance (Gist et al., 1989, 1991).

Finally, as mentioned in the previous section, many scholars now argue that self-efficacy itself should be included as a post-training measure of learning along with verbal knowledge, skills, attitudes and behavior transfer (Gist, 1989; Kraiger, Ford & Salas, 1993; Luthans, 2002; Noe, 1999). In other words, they claim that self-efficacy is an additional training outcome that is useful in evaluating the effectiveness of a training
program or comparing different training approaches. Thus, in this study, the construct of self-efficacy will serve as a training outcome to be evaluated (dependent variable) when comparing the effectiveness of different training approaches.

**Measurement of self-efficacy**

Bandura (1986) identified three dimensions of self-efficacy: magnitude, strength and generality. Magnitude refers to the level of task difficulty that a person believes he or she can attain. Strength refers to whether conviction regarding magnitude is strong or weak. In other words, magnitude is the level at which a person believes he or she can perform, whereas strength reflects the person’s confidence that he or she can perform at that level. Generality indicates the degree to which the expectation is generalized across situations (Gist, 1987; Maurer & Pierce, 1998; Torkzadeh & Van Dyke, 2001). When measuring self-efficacy, the designed scale should ideally measure the reliability and validity of each of these three dimensions (magnitude, strength and generality). However, in most studies, generality is not included because it is not global self-efficacy, but the self-efficacy to perform certain tasks that is of greatest interest (Maurer & Pierce, 1998). Thus, Bandura suggested that the best way to measure self-efficacy is to assess both magnitude and strength (Bandura, 1986; Maurer & Pierce, 1998; Wood & Locke, 1987).

According to the literature, numerous methods to assess self-efficacy have been developed by researchers. When researchers design an instrument to measure self-efficacy, they often follow Bandura’s recommendation to measure self-efficacy
magnitude and strength. Among these methods, the traditional format is to ask the participant (a) to answer yes or no to a question concerning whether or not he or she will be able to perform a specific task at a certain level (assessing magnitude) and (b) to give his or her percent confidence in the answers (assessing strength). The responses for magnitude and strength are then calculated separately or combined together to determine a self-efficacy score (Lee & Bobko, 1994; Maurer & Pierce, 1998).

Specifically, Lee and Bobko (1994) summarized and compared five popular traditional methods following Bandura’s recommendation. According to them, the most common method of measuring self-efficacy is to ask subjects to rate their self-efficacy strength. The second most common method is to measure self-efficacy magnitude. The third most common method is a combination of the magnitude and strength indices, that is, standardizing the self-efficacy strength items by converting them to z scores and then summing only those self-efficacy levels to which subjects answered yes.

The fourth method described by Lee and Bobko is a variant of the third, except that the researcher uses the raw scores on self-efficacy strength instead of adding the z scores. The fifth and final method of assessing self-efficacy strength is to use a single item for which respondents rate their confidence level on a given task. Based on their study, Lee and Bobko recommended using the raw scores on self-efficacy strength items and then summing across only those self-efficacy levels to which subjects answered yes (a combination of the magnitude and strength indices) to measure self-efficacy.

In addition to the traditional measurements, which follow Bandura’s
recommendation for assessing self-efficacy, a Likert scale measure has also been used to assess self-efficacy by some researchers. For example, multiple items have been used with 14 point Likert-type scales (Sherer et al., 1982), 9-point Likert-type scales (Frayne & Geringer, 2000), 7-point Likert-type scales (Barling & Beattie, 1983; Jones, 1986), 5-point Likert-type scales (Gould, Hodge, Peterson, & Giannini, 1989), a 4 point-Likert-type scale (Barnard, 2005), 4-point anchored scales (Bores-Rangel, Church, Szendre, & Reeves, 1990), and a 3-point forced-choice format (Holahan & Holahan, 1987).

Use of a Likert scale to measure self-efficacy has been criticized in that “these measures do not correspond to Bandura’s (1986) recommendation for assessing the strength and magnitude of self-efficacy” (Lee & Bobko, 1994). Comparison of the Likert Scale and traditional measures of self-efficacy, thus, has been of interest to scholars, and the issue of whether a Likert-type measurement format can be used as an alternative to the traditional format for measuring self-efficacy has been explored. The results from a study by Maurer and Pierce (1998) indicated that Likert-type and traditional measures of self-efficacy possess similar reliability – error variance, provide equivalent levels of prediction, and have similar factor structure and discriminability. According to their study, a Likert scale seems to offer an acceptable alternative method to measure self-efficacy. Therefore, a Likert scale is used in the design of instrument to measure trainees’ self-efficacy to achieve training outcomes in this study.

*General Self-Efficacy.* As mentioned, although self-efficacy has been primarily conceptualized as a situation-specific belief, there is evidence that the
experiences of personal mastery that contribute to efficacy expectancies generalize to actions other than the target behavior (Bandura et al., 1977; Sherer et al., 1982). One popular scale for measuring general self-efficacy was created by Scherer and colleagues (1982) and later modified in 1998 by Bosscher and Smit (Barnard, 2005). Sherer et al. described their GSE scale as a measure that was not tied to specific situations or behavior, but built on past experiences with success and failure in a variety of situations.

In the Sherer et al. scale, seventeen items are used to measure trainees’ general self-efficacy (Table 2.3). The Cronbach alpha reliability coefficient for this seventeen item scale is 0.86. In order to assess the construct validity of the Self-Efficacy Scale, the scores on this instrument were correlated with measures of several other personality characteristics. The other measures included the Internal-External Control Scale (I-E) (Rotter, 1966); the Personal Control Subscale of the I-E Scale (Gurin, Gurin, Lao, & Beattie, 1969); the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1964); the Ego Strength Scale (Barron, 1953); the Interpersonal Competency Scale (Holland & Baird, 1968); and the Self-Esteem Scale (Rosenberg, 1965). The Pearson correlations between scores for the General Self-Efficacy subscales and those of the other measures are presented in Table 2.4 (Sherer et al., 1982).

Since this instrument was well-designed, the items were carefully selected and validated, reliability was assessed, and construct-relevant hypotheses were formulated and tested, this instrument was used in this study to measure trainees’ general self-efficacy and also to correlate the trainees’ general self-efficacy with their self-efficacy to achieve training outcomes after receiving training.
When I make plans, I am certain I can make them work.  

0.486

2. One of my problems is that I cannot get down to work when I should. (R)  

0.390

3. If I can’t do a job the first time, I keep trying until I can.  

0.560

4. When I set important goals for myself, I rarely achieve them. (R)  

0.560

5. I give up on things before completing them. (R)  

0.631

6. I avoid facing difficulties. (R)  

0.439

7. If something looks too complicated, I will not even bother to try it. (R)  

0.687

8. When I have something unpleasant to do, I stick to it until I finish it.  

0.433

9. When I decide to do something, I got right to work on it.  

0.428

10. When trying to learn something new, I soon give up if I am not initially successful.  

(R)  

0.690

11. When unexpected problems occur, I don’t handle them well. (R)  

0.547

12. I avoid trying to learn new things when they look too difficult for me. (R)  

0.665

13. Failure just makes me try harder.  

0.546

14. I feel insecure about my ability to do things. (R)  

0.552

15. I am a self-reliant person.  

0.438

16. I give up easily. (R)  

0.688

17. I do not seem capable of dealing with most problems that come up in life. (R)  

0.539

Note. (R) denotes items recoded in direction of high self-efficacy.

Table 2.3: Factor Loadings of Items from the Self-Efficacy Scale (Sherer et al., 1982)
<table>
<thead>
<tr>
<th>Personality Characteristics</th>
<th>r: General Self-efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal-External</td>
<td>-0.287 +</td>
</tr>
<tr>
<td>Personal Control</td>
<td>-0.355 +</td>
</tr>
<tr>
<td>Social Desirability</td>
<td>0.431 +</td>
</tr>
<tr>
<td>Ego Strength</td>
<td>0.290 +</td>
</tr>
<tr>
<td>Interpersonal Competency</td>
<td>0.451 +</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>-0.510 +</td>
</tr>
</tbody>
</table>

+p < 0.0001

Table 2.4: Pearson Correlations of Scores on Self-Efficacy Subscales and Measures of Personality Characteristics (Sherer et al., 1982)
Conceptual Framework

The conceptual framework of this study, presented in Figure 2.11, is based on the system theory. According to the system theory, all systems consist of related and interconnected parts which can not be viewed separately, but are all interconnected as a dynamic whole (Jacobs, 2003). As a result, the effectiveness of a training program will be influenced by a lot of different factors; that is, the effectiveness of the training program is influenced not only by the design of training content or the way the training content is delivered to trainees, but also by many other factors such as the trainees’ characteristics or the organizational environment.

This study was focused on two of the factors that are known to influence training effectiveness: training approach and trainees’ self-efficacy. In the proposed framework, the inputs were two training approaches (structured on-the-job training approach and classroom training approach) and the trainees’ general self-efficacy level. The output was the trainees’ perceptions of their specific self-efficacy (self-efficacy to achieve training outcomes) level after training.

Specifically, as mentioned in the previous sections, the fundamental characteristics of S-OJT and CT are different. Classroom training mainly refers to off-job training with a lecture as the presentation method to deliver the training content to trainees. Most of the time, it is one-way – from the trainer to a group of trainees – instead of two-way communication between trainers and trainees. Since this kind of training is frequently conducted in the classroom through trainers’ spoken words, trainees have little opportunity to practice tasks learned in the training, seldom get
one-to-one feedback from the trainer, and rarely have a chance to observe trainers demonstrating the trained skills or behaviors.

S-OJT is the planned process of developing competence on units of work by having an experienced employee train a novice employee in the work setting. In contrast to classroom training with lecture, the design of the instructional events in S-OJT is mainly based on the principles of social learning theory. In other words, S-OJT places emphasis on learning by observing the modeled behaviors, by getting suggestions and feedback from trainers, and also by practice, which are the major sources of a person’s self-efficacy identified by Bandura (1977).

Since the design of the instructional events in S-OJT include several of the sources of self-efficacy which were identified by Bandura and since a series of research studies have indicated that a training method composed of cognitive modeling with practice and reinforcement generated significantly higher participant self-efficacy than a method involving either lecture or practice alone (Gist, 1989), based on the literature, it is reasonable to assume that the S-OJT approach can help trainees generate greater levels of self-efficacy than the classroom training approach in the training process. Thus, several research questions related to the issue of whether trainees who receive SOJT develop greater self-efficacy to perform the learned tasks than those who receive classroom training (lecture) were discussed in this study. In addition, the interaction, inter-influences and relationships among the variables of training approaches, general self-efficacy and self-efficacy to achieve training outcomes were explored in this study as well.
Demographic Variables:
1. How long worked in banking
2. How long worked for present organization
3. How long in the present position
4. Educational level
5. Previous training experience
   - classroom training experience
   - on-the-job training experience
   - training on conducting performance reviews for subordinate employees

Training Approaches:
1. Structured on-the-job training (S-OJT)
2. Classroom training

Trainee’s General Self-Efficacy

Trainees’ Perceptions of Self-Efficacy to Achieve Training Outcomes
1. S-OJT approach
2. Classroom training approach

Figure 2.11. Conceptual Framework of the Study
CHAPTER 3

METHODOLOGY

In this chapter, the research methodologies used in this study to answer the proposed research questions are described. The chapter is divided into five sections: research design, respondents, instrument development, data collection and data analysis procedures.

Research Design

In the most general sense, survey research can be defined as a process of collecting data by asking questions and recording people’s answers (Whitley, 1996). The term survey also refers to a research technique in which data is collected by asking questions to elicit responses from a particular group of people, who are called respondents (Ary, Jacobs, & Razavieh, 2002). Survey research is status or normative research, and if errors are controlled, the results can be generalized to a target population (Miller, 2003).

In this type of research, there are four errors that should be controlled for population validity (Miller, 1999). First, frame error results from an incomplete frame,
which means that discrepancies exist between the target population and the actual population from which the researcher drew the sample (Lee, 2004). Second, selection error occurs when certain sampling units in the population have a greater (or lesser) probability of falling into the sample than other sampling units (Lee, 2004). Third, non-response error can be an issue because the results from people who do not respond would be very likely to differ from those of the respondents who do (Dillman, 2000; Fraenkel and Wallen, 2008). Fourth, sampling error can result from inaccuracies in inferences about a population that occur because researchers have taken a sample rather than studying the whole population (Vogt, 1999).

In this study, frame error was controlled by using the most recently updated trainee list from the Training and Development Center of the Taiwan Academy of Banking and Finance (TABF). Selection error was controlled by ensuring that each trainee in the training center was counted once and completed only one questionnaire. Non-response error was controlled by using a questionnaire of appropriate length and an informative cover letter. In addition, the design of the questionnaire was made as attractive as possible, and some incentives were offered as part of the administration of the questionnaire. Furthermore, the researcher distributed the questionnaires to the TABF trainees personally and followed up to get the completed questionnaires from the respondents.
Respondents

In this section the target population, the size of the sample, and the sampling procedure are discussed.

Target Population

The study was conducted in the Training and Development Center of the Taiwan Academy of Banking and Finance (TABF). The establishment of the TABF, a non-profit training and research foundation in the field of banking and finance, was an outcome of decade-long financial reforms in Taiwan. The emergence of this institute has spurred increasing demand for quality banking services and helped professional bankers become better equipped to tackle today's highly dynamic and competitive environment.

There were approximately 80,000 TABF trainees in 2008. However, the exact population number was unreported. Therefore, in this study, the target population is assumed to be 80,000 trainees.

Sample Size

Many researchers have suggested the minimum number of subjects needed for various types of research. According to Fraenkel and Wallen (2008), for descriptive studies, a sample with a minimum number of 100 is essential. For correlational studies, a sample of at least 50 is deemed necessary to establish the existence of a relationship. For experimental and causal comparative studies, a minimum of 30 individuals per group is recommended.
According to Rea and Parker (1992), sample sizes of 382 and 383 are necessary to represent populations of 50,000 and 100,000, respectively. More specifically, for populations of 100,000 people, 1,058 respondents are needed for an accuracy of ± 3 percent and 383 respondents for an accuracy of ± 5 percent at alpha = 0.05.

Since the target population in the TABF consisted of around 80,000 trainees last year, for this study the sample size to represent 80,000 trainees needed to be at least 383 for a 95 percent confidence level within .05 risk of sampling error. Five hundred and twenty-eight trainees were selected as the sample in this study and were randomly assigned into two groups.

Sample Procedure

According to Fraenkel and Wallen (2008), a convenience sample is a group of individuals who (conveniently) are available for study. In other words, convenience samples consist of people from whom the researcher finds it convenient to collect data.

In this study, a convenience sample method was used to select the sample owing to difficulties encountered in conducting a simple random selection. In other words, the bankers who enrolled for the classes in the TABF in winter quarter from February 21 to March 21, 2009 were selected as participants who would be asked to respond to the questionnaires. In addition, the participants were randomly assigned to two groups; each group responded to one of the two questionnaires representing the two training approaches.
Instrument Development

This section describes the instruments that were used to measure the variables in this study. In addition, this section describes validity and reliability issues related to the instruments.

Overall, the questionnaire used in this study consisted of three parts. The first part was the participant information sheet, which collected data on the trainees’ demographic information and previous training experience. The second part measured the trainees’ levels of general self-efficacy. The third part assessed the trainees’ perceptions of their self-efficacy to achieve training outcomes. Except for the second part, the general self-efficacy scale, the instrument for this study was developed by the researcher with the assistance of the academic advisor and committee members at The Ohio State University.

After the initial survey, a structured phone interview was conducted to collect more information related to the instrument and to clarify why the respondents had responded the way they did. The following is a detailed description of the instruments.

Participant Information Sheet

There were in total seven questions on this sheet, the main purpose of which was to collect demographic information about the trainees as well as information about their previous training experience (See Appendix A, items 1-7). Specifically, questions 1-3 asked trainees the number of years working in banking, the number of years working for the current bank, and the number of years working in the current position. Question
4 asked about educational level, and responses were categorized as nominal data with five levels: high school diploma, some university/college, university/college degree, master’s degree and Ph.D. Questions 5-7 asked for data related to trainees’ previous training experience.

**General Self-Efficacy Scale (GSES)**

The General Self-Efficacy Scale (GSES), designed by Scherer and Colleagues (1982), was used to measure the trainees’ general self-efficacy (Barnard, 2005; Schwoerer, May, Hollensbe & Mencl, 2005). The Cronbach alpha reliability coefficient for this seventeen item scale is 0.86. Sample statements measuring general self-efficacy include: “If something looks too complicated, I will not even bother to try it”, “when I make plans, I am certain I can make them work”, and “failure just makes me try harder.”

A seven-point Likert scale was used in this study. A Likert scale presents respondents with a set of statements about a person, thing, or concept and has them rate their agreement or disagreement with the statements on a numerical scale that is the same for all the statements (Whitley, 1996). The scale used in this study was: 1 = strongly agree, 2 = agree, 3 = slightly agree, 4 = neither agree nor disagree, 5 = slightly disagree, 6 = disagree, and 7 = strongly disagree. The score was coded from 1 to 7. Respondents’ scores on a Likert scale were the sums of their responses to the items. That is, if the trainee has a lower score, this indicates that he or she will have higher general self-efficacy.
In order to control response biases, half of the statements were worded positively and half negatively. For example, “when I make plans, I am certain I can make them work” is a positive item; “I avoid trying to learn new things when they look too difficult for me” is a negative item. In this part, items 1, 3, 8, 9, 13 and 15 were worded positively, and the negative items were items 2, 4-7, 10-12, 14, 16 and 17. In coding, the rating on negative items was reversed; that is, if the rating to item 2 was “strongly disagree”, it was coded as 1 instead of 7 (Whitley, 1996).

*Scale of Self-Efficacy to Achieve Training Outcomes*

To develop the scale of self-efficacy to achieve training outcomes, the measure validation process proposed by Whitley (1996) was referenced (see Figure 3.1). Based on his model, the following steps were carried out: (1) reviewing theory, (2) setting an operational definition for the variables, (3) developing the items of the instrument, (4) assessing instrument content validity, (5) conducting a pilot test, and (6) assessing instrument reliability.
Figure 3.1: The Measure Validation Process (Whitley, 1996)
Reviewing Theory. In order to design the third part of the instrument, several important academic areas and theories were reviewed. These areas and theories include training effectiveness, training approaches, training evaluation, training transfer, social learning theory, self-efficacy theory, and so on.

Setting an Operational Definition for the Variables. There was one independent variable with two levels and one dependent variable in the design of this study. The independent variable was the training approach. This variable was operationally defined as a systematic process and a means which trainers use to deliver information to trainees. In this study, the variable of training approach had two levels: the classroom training approach and structured on-the-job training. Two scenarios were designed based on the characteristics of these two different training approaches.

The dependent variable in this study was the perception of self-efficacy to achieve training outcomes. Based on Bandura’s self-efficacy theory and the concept of training evaluation, the operational definition of the dependent variable was a trainee’s confidence in his or her capacity to learn the knowledge, skills, and behaviors of specific tasks during the training and also to transfer these learned tasks on the job. This variable was measured by the total score of nine items on a seven-point Likert scale. Specifically, after reading the scenario, the respondents were instructed to make judgments for each performance activity (Frayne & Geringer, 2000; Gist, Schwoerer & Rosen, 1989; Locke, Frederick & Bobko, 1984; Wolfe & Williams, 1999; Wood & Lickel, 1987). The score of a trainee’s self-efficacy to achieve training outcomes was obtained by adding the scores for each of the items (Maurer & Pierce, 1998). If the trainee has a
lower score, this indicates that he or she will have higher self-efficacy to achieve training outcomes.

*Developing the items of the instrument.* As discussed in Chapter Two, training outcomes typically include verbal knowledge, skills, transfer of training, financial benefits or self-efficacy. In addition, for a training program to be successful, the trainees must effectively and continually apply the learned capabilities gained in training to their jobs. In other words, for training to be effective, organizations need to ensure that trainees will be able to use what was learned during training back on the job and that trainees will have high self-efficacy to apply newly learned competencies on the job (Barnard, 2005). Therefore, 9 items regarding the trainees’ self-efficacy to achieve training outcomes were generated based on the literature of training evaluation and the concept of training outcomes.

*Assessing instrument content validity.* Instrument validity requires that the instrument measure what it is intended to measure. To improve prospects for high validity, the instrument was developed based on a literature review in human resource development, human resource management, psychology, measurements and organizational behaviors.

A panel of experts reviewed the questionnaire for content validity. In other words, the survey was subjected to a series of revisions by HRD and HRM professionals, including specialists in the fields of evaluation, education and business. In addition, the instruments were reviewed by two professors from the dissertation committee. The experts were asked to provide suggestions on how the researcher could improve the items
on the questionnaire and about changes that might be made in the format of the instrument, the appropriateness of language, the clarity of printing, the clarity of directions, and the general appearance.

Conducting the pilot test. The purpose of the pilot test is to verify that the test itself is well-formulated. That is, it helps the researcher to improve the structure of the instruments, enhance the clarity and the validity of content, test the internal consistency of a closed-ended survey, and estimate the time needed for participation in the study. In addition, the pilot test is conducted as a final test of research procedures prior to beginning data collection (Whitley, 1996).

The pilot subjects of this study were 60 trainees in the TABF. All participants were instructed to complete the instruments and the comment sheets for each part of the survey. Feedback about the clarity of the introduction and instructions, suitability of items, appropriateness of format, ease of completion, and time needed to complete the forms was collected. Then the instruments were revised based on the feedback.

Assessing instrument reliability. The reliability of a measure is its degree of consistency; a perfectly reliable measure gives the same result every time it is applied to the same person or thing, barring changes in the variable being measured (Whitley, 1996). Reliability can be assessed in three ways: across time (test-retest method); across different forms of a measure (the equivalent-forms method); and, for multi-item measures, across items (the internal-consistency method) (Fraenkel and Wallen, 2008).

In this study, the internal consistency method, which mainly assesses the degree to which responses to the items in a measure are similar, was used to measure the
reliability of the questionnaire. Cronbach’s alpha was calculated for the second and third parts in the two questionnaires completed by 60 pilot trainees in TABF. For the classroom training instrument, the Cronbach’s alpha of the general self-efficacy section (Part II: items 1-17) was 0.89, and the Cronbach’s alpha of the trainee’s self-efficacy to achieve training outcomes section (Part III: items 1-9) was 0.91. The Cronbach’s alpha for the whole instrument was 0.90.

For the structured on-the-job training instrument, the Cronbach’s alpha of the general self-efficacy section (Part II: items 1-17) was 0.78, and the Cronbach’s alpha of the trainee’s self-efficacy to achieve training outcomes section (Part III: items 1-9) was 0.93. The Cronbach’s alpha for the whole instrument was 0.85. All the values were above 0.7, indicating that the survey achieves acceptable measures of internal consistency (Carmines & Zeller, 1979). Tables 3.1 and 3.2 show the Cronbach’s alpha coefficients for the survey responses.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Self-efficacy</td>
<td>0.89</td>
</tr>
<tr>
<td>Self-efficacy to achieve training outcomes</td>
<td>0.91</td>
</tr>
<tr>
<td>Classroom training instrument</td>
<td>0.90</td>
</tr>
</tbody>
</table>

Table 3.1: Cronbach’s Alpha Coefficients for the Classroom Training Questionnaire (n=30)
<table>
<thead>
<tr>
<th>Variables</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Self-efficacy</td>
<td>0.78</td>
</tr>
<tr>
<td>Self-efficacy to achieve training outcomes</td>
<td>0.93</td>
</tr>
<tr>
<td>Structured on-the-job training instrument</td>
<td>0.85</td>
</tr>
</tbody>
</table>

Table 3.2: Cronbach’s Alpha Coefficients for the Structured On-the-Job Training Questionnaire (n=30)

*Structured Interview*

Follow-up interviews were conducted in order to acquire more information regarding the instruments and to clarify why the respondents replied the way they did when completing the questionnaire.

Four questions were generated to obtain such information. Questions 1-3 mainly collected information regarding how the respondents felt about the description of the training scenario. These questions included: “do you think the description of the training process in the training scenario was clear?”, “do you think the description of the training scenario provided you with an experience comparable to a real training activity?” and “did the description of the training process in the scenario provide you with a clear idea of how the training would be conducted?”. The last question explored which factors of the training approach helped to generate higher trainee self-efficacy to achieve training outcomes.
Data Collection

According to Fraenkel and Wallen (2008), there are four basic ways to collect data in a survey: by administering the survey instrument “live” to a group; by mail; by telephone; or through face-to-face interviews.

In this study, the method of direct administration to a group was used to acquire data from all members of the sample. That is, the researcher went to the classroom to deliver a verbal explanation about the study to the participants, distributed the questionnaires along with an interview contact information form and also answered their questions. Specifically, in the process of data collection, the trainees, selected by convenience sampling, were randomly assigned into two groups by random distribution of the survey questions with a description of one of the two training approaches to all participants. The participants were asked to complete the first two parts of the questionnaire, that is, the information sheet used to collect the trainees’ demographic data and the General Self-Efficacy Scale. Then, the trainees were asked to read the description of how they would receive training, to imagine that they had participated in the training, and to answer the questions of the final part of the questionnaire to predict their perceptions of self-efficacy to achieve training outcomes after the training.

In addition, if they were interested in taking part in the phone interview activity, they were to highlight “yes” in the interview contact information form and return it to the co-investigator. They were informed that the researcher would call them to complete this activity.
Data Analysis

The statistical methods that were adopted to address each research question based on the research design are described in this section. The demographic information was summarized with descriptive statistics. The Statistical Package for the Social Sciences (SPSS) was used for all descriptive statistics as well as for the inferential statistics such as t-test.

Specifically, descriptive statistics were used to organize and summarize the demographic data. Means, ranges, and standard deviations were calculated for the demographic variables. The demographic variables in this study included gender, years working for the company, educational level, years working in current job position and previous training experience. The response rate on the questionnaires was also reported.

In addition, this study investigated the influences of the classroom training approach and structured on-the-job training approach on trainees’ perceptions related to their own predictions concerning their self-efficacy to achieve training outcomes. The six research questions that were investigated and the methods used to answer these questions in this study are described in the following:

Research Question 1: Do trainees in two training groups (with the structured on-the-job training approach and the classroom training approach) differ in their self-assessment of general self-efficacy?

First, the descriptive statistics were used to generate the mean scores for
general self-efficacy of the trainees in the two groups based on two different training approaches, the classroom training approach and the structured on-the-job training approach.

The null hypothesis was established as “the mean score of trainees’ general self-efficacy in the classroom training group equals the mean score of trainees’ general self-efficacy in the structured on-the-job training group,” and the research hypothesis was “the mean score of trainees’ general self-efficacy in the classroom training group is larger (or smaller) than the mean score of trainees’ general self-efficacy in the structured on-the-job training group”.

Third, independent sample t-test was used to examine the difference in the mean scores of trainees’ general self-efficacy between the two groups. If a 0.05 level of significance is reached, the researcher customarily rejects the null hypothesis and concludes that a real difference does exist. If not, the researcher accepts the research hypothesis and concludes that these two groups are homogeneous.

Research Question 2: Do trainees with the classroom training approach and with the structured on-the-job training approach differ in their self-assessment of self-efficacy to achieve training outcomes?

The descriptive statistics were used to generate the mean scores of trainees’ perceptions of their self-efficacy to achieve training outcomes under the two different training approaches, the classroom training approach and the structured on-the-job training approach.
The null hypothesis was established as “the population mean score of trainees’ perceptions as influenced by the classroom training approach equals the population mean score of trainees’ perceptions as influenced by the structured on-the-job training approach,” and the research hypothesis was “the population mean score of trainees’ perceptions as influenced by the structured-OJT approach is larger (or smaller) than the population mean score of trainees’ perceptions as influenced by the classroom training approach”.

To evaluate the research hypothesis, the researcher conducted a one-tailed t-test with an alpha level of 0.05 as a test of the statistical significance of the mean difference between the two groups (Fraenkel and Wallen, 2008; King & Minium, 2003; Whitley, 1996). If a 0.05 level of significance is reached, the researcher customarily rejects the null hypothesis and concludes that a real difference does exist.

Research Question 3: Do trainees with the classroom training approach and with the structured on-the-job training approach show different relationships between demographic factors and general self-efficacy and their levels of self-efficacy to achieve training outcomes?

For research question 3, correlational statistics were used to determine the relationship between the trainees’ general self-efficacy and their self-efficacy to achieve training outcomes. In other words, a Pearson correlation was conducted to generate the correlation coefficient (r) to determine whether the two variables were correlated or not (Fraenkel and Wallen, 2008; King & Minium, 2003; Whitley, 1996). The value of a
correlation coefficient represents the extent to which two variables are related to each other, with results ranging from a perfect positive relationship (1.00) through no relationship (0.00) to a perfect negative (-1.00).

Research Question 4: Do trainees with high levels of general self-efficacy differ in their assessment of self-efficacy to achieve training outcomes after training using classroom and structured on-the-job training approaches?

For research question 4, the descriptive statistics were used to generate the mean score and standard deviation of general self-efficacy for the sample as a whole. Then, the criterion of “one standard deviation above or below the mean score” was used to distinguish the trainees who had high general self-efficacy from those who had low general self-efficacy. In addition, based on the different training approaches, the trainees with high general self-efficacy were divided into two groups: high general self-efficacy classroom training group (High GSE CT group) and high general self-efficacy structured on-the-job training group (High GSE S-OJT group). The independent sample t-test was used to examine the difference in the means of the scores of self-efficacy to achieve training outcomes across the two groups.

Research Question 5: Do trainees with low levels of general self-efficacy differ in their assessment of self-efficacy to achieve training outcomes after training using classroom and structured on-the-job training approaches?

The same process as that used for research question 4 was used to distinguish
the trainees who had low general self-efficacy. The trainees were divided into two
groups with respect to the different training approaches: a low general self-efficacy
classroom training group (Low GSE CT group) and a low general self-efficacy structured
on-the-job training group (Low GSE S-OJT group). The independent sample t-test was
used to examine the difference in the means of the scores for self-efficacy to achieve
training outcomes across the two groups.

Research 6: What are the relationships between demographic variables and general
self-efficacy across the trainees with high and low levels of general self-efficacy?

For research question 6, the chi-square test was used to determine the
relationships between demographic variables and general self-efficacy across the trainees
with high and low levels of general self-efficacy. According to the literature, the
chi-square test is used to analyze data reported in categories (Fraenkel & Wallen, 2000).
Since some of the trainees’ demographic data were reported in categories in this study,
the chi-square test was used to answer this question.
CHAPTER 4

RESULTS

This chapter presents the results of the study, and is divided into four sections. The first section presents the descriptive statistics for the sample demographics and the dependent variables. The second section reports the results of normality tests. The third section reports the results for each research question, and the final section reports the results of the structured interviews.

Descriptive Statistics

There are three parts in this section. Part one presents the sample of this study. Part two presents the demographic information for the sample. Part three presents the descriptive statistics results for the two variables, that is, general self-efficacy and self-efficacy to achieve training outcomes.

Sample

The questionnaires were distributed to trainees who received training in the Training and Development Center of the Taiwan Academy of Banking and Finance
(TABF) from February 21 to March 21. The total number in the sample frame of this study was 528. Two hundred sixty-four questionnaires regarding classroom training and 264 questionnaires regarding structured on-the-job training were randomly distributed to the trainees in TABF. Three hundred twenty-three out of the total 528 respondents completed the questionnaires, and 302 questionnaires were usable. The overall response rate was 61% in this study.

More specifically, one hundred sixty-three trainees completed the questionnaires after reading a description of a classroom training approach, and one hundred sixty trainees completed the questionnaires after a reading a description of a structured on-the-job training approach. Among them, 21 trainees (16 for the classroom training questionnaires and 5 for the S-OJT questionnaires) who answered only a few questions or provided unclear information were not included in the data analysis, nor are they included in the data presented in the tables in this chapter. The responses of three hundred two respondents (147 for classroom training questionnaires and 155 for S-OJT questionnaires) provided complete demographic characteristics, general self-efficacy level and a score for trainees’ self-efficacy to achieve training outcomes and were deemed usable information for the data analysis.

Respondents Information

The demographic information collected for all sample subjects and sample subjects by group (classroom training and structured on-the-job training) includes: number of years worked in banking, number of years worked for the present
organization, number of years in the present position, educational level, experience in receiving classroom training, experience in receiving structured on-the-job training, and experience in attending training on conducting performance reviews for subordinate employees. The frequencies and percentages for all sample subjects and for the classroom training and structured on-the-job training groups are listed in Table 4.1.

In the table, it can be seen that the average number of years working in banking for all sample subjects (n = 302) ranges from six to ten years. Eighteen trainees (6%) reported working in banking for less than one year, 106 trainees (35.1%) reported working in banking for 1 to 5 years, 71 trainees (23.5%) reported working in banking for 6 to 10 years, and 107 trainees (35.4%) reported working in banking for more than 10 years. The average number of years working in banking for trainees in the classroom training group (n = 147) was similar to that for all sample subjects, ranging from six to ten years. Nine trainees (6.1%) reported working in banking for less than one year, 56 trainees (38.1%) reported working in banking for 1 to 5 years, 38 trainees (25.9%) reported working in banking for 6 to 10 years, and 44 trainees (29.9%) reported working in banking for more than 10 years. For the trainees in the structured on-the-job training group, the average number of years working in banking also ranges from six to ten years. Nine trainees (5.8%) reported working in banking for less than one year, 50 trainees (32.3%) reported working in banking for 1 to 5 years, 33 trainees (21.3%) reported working in banking for 6 to 10 years, and 63 trainees (40.6%) reported working in banking for more than 10 years.

The average number of years working in the present organization for all
sample subjects (n = 302) ranges from one to five years. Seventy-one trainees (23.5%) reported working in the present organization for less than one year, 162 trainees (53.7%) reported working in the present organization for 1 to 5 years, 36 trainees (11.9%) reported working in the present organization for 6 to 10 years, and 33 trainees (10.9%) reported working in the present organization for more than 10 years. The average number of years working in the present organization for trainees in the classroom training group (n = 147) was similar to that for all sample subjects, ranging from one to five years. Forty-one trainees (27.9%) reported working in the present organization for less than one year, 71 trainees (48.3%) reported working in the present organization for 1 to 5 years, 20 trainees (13.6%) reported working in the present organization for 6 to 10 years, and 15 trainees (10.2%) reported working in the present organization for more than 10 years. As for the trainees in the structured on-the-job training group, the average number of years working in the present organization also ranges from one to five years. Thirty trainees (19.4%) reported working in the present organization for less than one year, 91 trainees (58.7%) reported working in the present organization for 1 to 5 years, 16 trainees (10.3%) reported working in the present organization for 6 to 10 years, and 18 trainees (11.6%) reported working in the present organization for more than 10 years.

The average number of years working in the present position ranges from one to five years for all sample subjects (n = 302). Eighty-one trainees (26.8%) reported working in the present position for less than one year, 167 trainees (55.3%) reported working in the present position for 1 to 5 years, 33 trainees (10.9%) reported working in
the present position for 6 to 10 years, and 21 trainees (7%) reported working in the present position for more than 10 years. The average number of years working in the present position for the trainees in the classroom training group (n = 147) was similar to that for all sample subjects, ranging from one to five years. Forty-three trainees (29.3%) reported working in the present position for less than one year, 81 trainees (55.1%) reported working in the present position for 1 to 5 years, 16 trainees (10.8%) reported working in the present position for 6 to 10 years, and 7 trainees (4.8%) reported working in the present position for more than 10 years. For trainees in the structured on-the-job training group, the average number of years working in the present position ranges from one to five years. Thirty-eight trainees (24.5%) reported working in the present position for less than one year, 86 trainees (55.5%) reported working in the present position for 1 to 5 years, 17 trainees (11%) reported working in the present position for 6 to 10 years, and 14 trainees (9%) reported working in the present position for more than 10 years.

Regarding the educational level, the average educational level was 16-year university/college graduate for all sample subjects, as shown in Table 4.1 (59.3%, that is, 179 subjects). Moreover, 74 trainees (24.5%) reported having a master’s degree, 24 trainees (7.9%) reported having some university/college, and an additional 25 trainees (8.3%) reported having a high school diploma. A similar distribution of the educational level was observed for the trainees in the classroom training group and those in the structured on-the-job training group. The average educational level of the trainees in the classroom training group (n = 147) was 16-year university/college, with 87 subjects (59.2%) having received 16 or more years of education. Moreover, 37 trainees (25.2%)
reported having a master’s degree, 12 trainees (8.2%) reported having some university/college, and an additional 11 trainees (7.5%) reported having a high school diploma. Likewise, the average educational level of the trainees in the structured on-the-job training group (n = 155) was 16-year university/college graduate with 92 subjects (59.4%) having received 16 or more years of education. Moreover, 37 trainees (23.9%) reported having a master’s degree, 12 trainees (7.7%) reported having some university/college, and an additional 14 trainees (9%) reported having a high school diploma.

Next, Table 4.1 shows the number of classroom training sessions that trainees received in the past year. The average number for all sample subjects (n = 302) was from one to three (47.7%, that is 144 sample subjects). Fifth-nine trainees (19.5%) reported having no classroom training experience in the past year, and 99 trainees (32.8%) reported receiving classroom training more than three times in the past year. Similarly to all sample subjects, the average number of classroom training sessions for participants in the classroom training group (n = 147) was from one to three, with 67 sample subjects (45.6%) having received 1 to 3 classroom training sessions in the past year. However, 30 trainees (20.4%) reported having no classroom training experience in the past year, and 50 trainees (34%) reported having more than three classroom training sessions in the past year. The average number of classroom training sessions for the structured on-the-job training group (n = 155) was one to three, with 77 sample subjects (49.7%) reporting 1 to 3 classroom training experiences in the past year. However, 29 trainees (18.7%) reported having had no classroom training experience in the past year, and 49
trainees (31.6%) reported having had more than three classroom training sessions in the past year.

Regarding structured on-the-job training experience, 192 trainees (63.6%) reported having structured on-the-job training experience in the past year, and 110 trainees (36.4%) reported having no structured on-the-job training experience in the past year for all sample subjects, as shown in Table 4.1. More specifically, 90 trainees (61.2%) in the classroom training group reported having structured on-the-job training experience in the past year, and 57 trainees (38.8%) reported having no structured on-the-job training experience in the past year. One hundred two trainees (65.8%) in the structured on-the-job training group reported having had structured on-the-job training experiences in the past year, and 53 trainees (34.2%) reported having no structured on-the-job training experience in the past year.

Lastly, in terms of performance training experience, 56 trainees (18.5%) reported having performance training experiences in the past year, and 246 trainees (81.5%) reported having no performance training experience in the past year for all sample subjects, as shown in Table 4.1. More specifically, 31 trainees (21.1%) in the classroom training group reported having performance training experiences in the past year, and 116 trainees (78.9%) reported having no performance training experience in the past year. Twenty-five trainees (16.1%) in the structured on-the-job training group reported having performance training experiences in the past year, and 130 trainees (83.9%) reported having no performance training experience in the past year.
<table>
<thead>
<tr>
<th></th>
<th>Total sample</th>
<th>Classroom group</th>
<th>SOJT group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Number of Years Worked in Banking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than one year</td>
<td>18</td>
<td>6.1</td>
<td>9</td>
</tr>
<tr>
<td>1-5 years</td>
<td>106</td>
<td>35.1</td>
<td>56</td>
</tr>
<tr>
<td>6-10 years</td>
<td>71</td>
<td>23.5</td>
<td>38</td>
</tr>
<tr>
<td>More than 10 years</td>
<td>107</td>
<td>35.4</td>
<td>44</td>
</tr>
<tr>
<td>Number of Years Worked for Present Organization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than one year</td>
<td>71</td>
<td>23.5</td>
<td>41</td>
</tr>
<tr>
<td>1-5 years</td>
<td>162</td>
<td>53.7</td>
<td>71</td>
</tr>
<tr>
<td>6-10 years</td>
<td>36</td>
<td>11.9</td>
<td>20</td>
</tr>
<tr>
<td>More than 10 years</td>
<td>33</td>
<td>10.9</td>
<td>15</td>
</tr>
<tr>
<td>Number of Years Worked in Present Position</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than one year</td>
<td>81</td>
<td>26.8</td>
<td>43</td>
</tr>
<tr>
<td>1-5 years</td>
<td>167</td>
<td>55.3</td>
<td>81</td>
</tr>
<tr>
<td>6-10 years</td>
<td>33</td>
<td>10.9</td>
<td>16</td>
</tr>
<tr>
<td>More than 10 years</td>
<td>21</td>
<td>7.0</td>
<td>7</td>
</tr>
<tr>
<td>Educational Level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School Diploma</td>
<td>25</td>
<td>8.3</td>
<td>11</td>
</tr>
<tr>
<td>Some university/College</td>
<td>24</td>
<td>7.9</td>
<td>12</td>
</tr>
<tr>
<td>University/College</td>
<td>179</td>
<td>59.3</td>
<td>87</td>
</tr>
<tr>
<td>Master’s degree</td>
<td>74</td>
<td>24.5</td>
<td>37</td>
</tr>
<tr>
<td>Ph.D.</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Number of Classroom Training Experiences in the Past Year</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>59</td>
<td>19.5</td>
<td>30</td>
</tr>
<tr>
<td>One to three</td>
<td>144</td>
<td>47.7</td>
<td>67</td>
</tr>
<tr>
<td>More than three</td>
<td>99</td>
<td>32.8</td>
<td>50</td>
</tr>
<tr>
<td>Structured On-the-Job Training Experiences</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>192</td>
<td>63.6</td>
<td>90</td>
</tr>
<tr>
<td>No</td>
<td>110</td>
<td>36.4</td>
<td>57</td>
</tr>
</tbody>
</table>

Table 4.1: Frequencies and Percentages for Demographic Information, Total Sample (n = 302), Classroom Training Group (n = 147) and Structured On-the-Job Training Group (n =155)
Table 4.1, continued

<table>
<thead>
<tr>
<th>Performance Training Experience</th>
<th>Total sample</th>
<th>Classroom group</th>
<th>SOJT group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Yes</td>
<td>56</td>
<td>18.5</td>
<td>31</td>
</tr>
<tr>
<td>No</td>
<td>246</td>
<td>81.5</td>
<td>116</td>
</tr>
</tbody>
</table>
Characteristics of demographics. Overall, the differences and similarities between the classroom training group and the structured on-the-job training group on average can be summarized as follows: 1) the trainees in both groups were bankers from different banks in Taiwan, 2) trainees in both groups on average had worked in banking for 6 to 10 years, although there were more trainees who had worked in banking for more than 10 years in the structured on-the-job training group, 3) the average time span of working in the present organization for the trainees in both groups was 1 to 5 years, with fewer trainees working for less than one year in the structured on-the-job training group, 4) the average time span of working in the present position for trainees in both groups was from 1 to 5 years, 5) trainees in both groups on average had a 16-year university/college educational level, 6) trainees in both groups on average had had one to three classroom training experiences in the past year, and 7) 63% or more of the trainees in both groups had had structured on-the-job training experiences in the past year. In addition, as many as 81% of the trainees had not had any performance training experience.

As mentioned in Chapter 3, all participants of this study were randomly assigned to two groups and asked to respond to one of the two questionnaires representing the two training approaches. According to Fraenkel and Wallen (2008), randomization is one of the strategies that can minimize or eliminate threats due to subject characteristics. When randomization is used, researchers can assume that the groups they have created are equivalent (Fraenkel & Wallen, 2008). In addition, Table 4.1 also shows that there are a number of similarities between the two groups and fewer
differences between these two groups. Therefore, the demographic characteristics of
the trainees in the two groups can be assumed to be equivalent.

Dependent Variables

The investigation in this study was designed to determine the influence of the
different training methods (that is, classroom training and structured on-the-job training)
on the dependent variable, the trainees’ perceptions of self-efficacy to achieve training
outcomes. Ratings of their own confidence levels by 302 trainees in the Training and
Development Center of the Taiwan Academy of Banking and Finance (TABF) provided
the data for analyzing the dependent variable. The trainees’ self-ratings also provided
the data for analyzing the relationship between their general self-efficacy and the
dependent variable, their perceptions of self-efficacy to achieve training outcomes.

To obtain information about their perceptions of self-efficacy to achieve the
training outcomes, all sample subjects were asked to rate their level of confidence to
achieve training outcomes on nine items after reading a training scenario. On a seven
point scale with one as the high point and seven as the low point, the mean of the raw
scores for all subjects was 2.61 with a standard deviation of 0.95, as shown in Table 4.2.
The means of raw scores for the classroom training group and the structured on-the-job
training group were 2.82 with a standard deviation of 0.90 and 2.41 with a standard
deviation of 0.96, respectively.
To obtain information about the trainees' general self-efficacy, all sample subjects were asked to rate their level of confidence on seventeen measured items. On a seven point scale with one as the high confidence level and seven as the low confidence level, the mean scores for all subjects was 2.76, with a standard deviation of 0.80, as shown in Table 4.3. The mean scores for the classroom training group and the structured on-the-job training group were 2.80 with a standard deviation of 0.79 and 2.71 with a standard deviation of 0.81, respectively.

Table 4.2: Mean and Standard Deviation of Raw Scores on Self-Efficacy to Achieve Training Outcomes, Total Sample (n = 302), Classroom Training Group (n =1 47) and Structured On-the-Job Training Group (n = 155)

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>n</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom Training</td>
<td>2.82</td>
<td>147</td>
<td>0.90</td>
</tr>
<tr>
<td>Structured On-the-Job Training</td>
<td>2.41</td>
<td>155</td>
<td>0.96</td>
</tr>
<tr>
<td>Total Sample</td>
<td>2.61</td>
<td>302</td>
<td>0.95</td>
</tr>
</tbody>
</table>

Table 4.3: Mean Score and Standard Deviation for General Self-Efficacy, Total Sample (n = 302), Classroom Training Group (n =1 47) and Structured On-the-Job Training Group (n = 155)

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>n</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Self-Efficacy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classroom Training</td>
<td>2.80</td>
<td>147</td>
<td>0.79</td>
</tr>
<tr>
<td>Structured On-the-Job Training</td>
<td>2.71</td>
<td>155</td>
<td>0.81</td>
</tr>
<tr>
<td>Total Sample</td>
<td>2.76</td>
<td>302</td>
<td>0.80</td>
</tr>
</tbody>
</table>
More specifically, Table 4.4 shows the range of means and standard deviations of the raw scores for all the measured items for the total sample, the classroom training group, and the structured on-the-job training group. For the total sample, the mean scores ranged from 2.48 to 3.24, with standard deviations ranging from 1.10 to 1.49. For the classroom training group, the mean scores of all measured items ranged from 2.46 to 3.22, with standard deviations ranging from 1.06 to 1.40. As for the structured on-the-job training group, the mean scores of all measured items ranged from 2.43 to 3.32, with standard deviations ranging from 1.10 to 1.57.
<table>
<thead>
<tr>
<th>General Self-Efficacy Measured Items</th>
<th>Total Sample Mean</th>
<th>Total Sample SD</th>
<th>CT Group Mean</th>
<th>CT Group SD</th>
<th>SOJT Group Mean</th>
<th>SOJT Group SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 When I make plans, I am certain I can make them work</td>
<td>2.65</td>
<td>1.10</td>
<td>2.78</td>
<td>1.06</td>
<td>2.53</td>
<td>1.12</td>
</tr>
<tr>
<td>2 One of my problems is that I cannot get down to work when I should</td>
<td>3.24</td>
<td>1.49</td>
<td>3.16</td>
<td>1.40</td>
<td>3.32</td>
<td>1.57</td>
</tr>
<tr>
<td>3 If I cannot do a job the first time, I keep trying until I can</td>
<td>2.50</td>
<td>1.17</td>
<td>2.52</td>
<td>1.15</td>
<td>2.47</td>
<td>1.20</td>
</tr>
<tr>
<td>4 When I set important goals for myself, I rarely achieve them</td>
<td>2.69</td>
<td>1.25</td>
<td>2.73</td>
<td>1.26</td>
<td>2.65</td>
<td>1.25</td>
</tr>
<tr>
<td>5 I give up on things before completing them</td>
<td>2.59</td>
<td>1.18</td>
<td>2.66</td>
<td>1.27</td>
<td>2.52</td>
<td>1.10</td>
</tr>
<tr>
<td>6 I avoid facing difficulties</td>
<td>2.75</td>
<td>1.29</td>
<td>2.80</td>
<td>1.30</td>
<td>2.69</td>
<td>1.27</td>
</tr>
<tr>
<td>7 If something looks too complicated, I will not even bother to try it</td>
<td>2.52</td>
<td>1.28</td>
<td>2.60</td>
<td>1.23</td>
<td>2.45</td>
<td>1.33</td>
</tr>
<tr>
<td>8 When I have something unpleasant to do, I stick to it until I finish it</td>
<td>3.12</td>
<td>1.32</td>
<td>3.22</td>
<td>1.32</td>
<td>3.02</td>
<td>1.31</td>
</tr>
<tr>
<td>9 When I decide to do something, I go right to work on it</td>
<td>2.48</td>
<td>1.30</td>
<td>2.46</td>
<td>1.15</td>
<td>2.51</td>
<td>1.43</td>
</tr>
<tr>
<td>10 When trying to learn something new, I soon give up if I am not initially successful</td>
<td>2.77</td>
<td>1.30</td>
<td>2.73</td>
<td>1.28</td>
<td>2.81</td>
<td>1.31</td>
</tr>
<tr>
<td>11 When unexpected problems occur, I don’t handle them well</td>
<td>2.72</td>
<td>1.30</td>
<td>2.75</td>
<td>1.27</td>
<td>2.69</td>
<td>1.33</td>
</tr>
<tr>
<td>12 I avoid learning new things when they look too difficult for me</td>
<td>2.76</td>
<td>1.28</td>
<td>2.88</td>
<td>1.29</td>
<td>2.64</td>
<td>1.26</td>
</tr>
<tr>
<td>13 Failure just makes me try harder</td>
<td>2.96</td>
<td>1.36</td>
<td>3.05</td>
<td>1.32</td>
<td>2.87</td>
<td>1.39</td>
</tr>
<tr>
<td>14 I feel insecure about my ability to do things</td>
<td>2.78</td>
<td>1.40</td>
<td>2.86</td>
<td>1.40</td>
<td>2.70</td>
<td>1.40</td>
</tr>
<tr>
<td>15 I am a self-reliant person</td>
<td>2.98</td>
<td>1.48</td>
<td>2.95</td>
<td>1.38</td>
<td>3.01</td>
<td>1.56</td>
</tr>
<tr>
<td>16 I give up easily</td>
<td>2.52</td>
<td>1.17</td>
<td>2.61</td>
<td>1.17</td>
<td>2.43</td>
<td>1.17</td>
</tr>
<tr>
<td>17 I do not seem capable of dealing with most problems that come up in life</td>
<td>2.85</td>
<td>1.44</td>
<td>2.90</td>
<td>1.38</td>
<td>2.81</td>
<td>1.50</td>
</tr>
</tbody>
</table>

Table 4.4: Means and Standard Deviation of General Self-Efficacy Measured Items, Total Sample (n = 302), Classroom Training Group (n = 147) and Structured On-the-Job Training Group (n = 155)
Assumptions for t-Test

Inferential statistics are certain types of procedures that allow researchers to make inferences about a population based on findings from a sample (Fraenkel & Wallen, 2008). In this study, the t-test for independent means was used to compare the mean scores of two independent groups. According to the literature, the t-test is based on various underlying assumptions: the two random samples must be independently selected; the sampling distribution follows the normal curve; and homogeneity of variance is assumed (King & Minium, 2003).

The sample of this study was selected and randomly assigned into two groups (classroom training and S-OJT groups). The homogeneity of variance was verified and assured for each research question, as reported in the following discussion of those questions. As to the assumption of sampling distribution following the normal curve, two numerical methods, descriptive statistics and the Shapiro-Wilk test, were applied to examine the normality. According to Park (2008), the Shapiro-Wilk W is the ratio of the best estimator of the variance to the usual corrected sum of squares estimator of the variance. The result will be positive and less than or equal to one. When the number is close to one, it indicates normality. In general, the null hypothesis of the Shapiro-Wilk W test is that the sample is normally distributed and selected from a population with normal distribution. If the p-value is less than the chosen alpha level, the null hypothesis is rejected. On the contrary, if the p-value is greater than the chosen alpha level, the null hypothesis is not rejected, and the sample can be considered to be normally distributed and acquired from a normally distributed population. Computation
of such statistics requires that the sample size be greater than or equal to seven and less than or equal to 2000.

Tables 4.5 and 4.6 present the results of the descriptive statistics and Shapiro–Wilk test for the classroom training group. In Table 4.5, there is a small gap between the mean of 2.80 and the median of 2.76. The skewness and kurtosis value are 0.26 and -0.61, respectively. Thus, the descriptive statistics indicate that the scores for the general self-efficacy of the classroom training group were normally distributed and, in addition, that the sample was selected from a population with normal distribution. In Table 4.6, the value obtained in the Shapiro-Wilk test is 0.98 and is not significant at the 0.05 alpha level. Thus, the null hypothesis is not rejected, indicating that the population and the general self-efficacy scores of the classroom training group were normally distributed.

<table>
<thead>
<tr>
<th>Source</th>
<th>Statistic</th>
<th>DF</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom Training Group</td>
<td>0.983</td>
<td>147</td>
<td>0.065</td>
</tr>
</tbody>
</table>

Table 4.6: Shapiro-Wilk Test of Normality for the CT Group (n =1 47)
Tables 4.7 and 4.8 present the results of the descriptive statistics and Shapiro–Wilk test for the structured on-the-job training group. In Table 4.7, there is a small gap between the mean of 2.712 and the median of 2.705. The skewness and Kurtosis value are 0.16 and -0.62, respectively. Thus, the descriptive statistics indicate that the scores for general self-efficacy of the structured on-the-job training group are normally distributed and that the sample was selected from a population which was normally distributed. In Table 4.8, the value obtained in the Shapiro-Wilk test is 0.987 and is not significant at the 0.05 alpha level. Thus, the null hypothesis is not rejected, indicating that the population of the S-OJT group was normally distributed and the general self-efficacy scores of the S-OJT group were normally distributed as well.

<table>
<thead>
<tr>
<th>Confidence Level: General Self-Efficacy</th>
<th>Mean</th>
<th>SD</th>
<th>Median</th>
<th>Variance</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-OJT Group</td>
<td>2.712</td>
<td>0.81</td>
<td>2.705</td>
<td>0.65</td>
<td>0.16</td>
<td>-0.62</td>
</tr>
</tbody>
</table>

Table 4.7: Descriptive Statistics for the General Self-Efficacy of the S-OJT Group (n = 155)

<table>
<thead>
<tr>
<th>Source</th>
<th>Statistic</th>
<th>DF</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-OJT Group</td>
<td>0.987</td>
<td>155</td>
<td>0.143</td>
</tr>
</tbody>
</table>

Table 4.8: Shapiro-Wilk Test of Normality for the S-OJT Group (n = 155)
Results for Each Research Question

This section reports the results for the seven research questions of the study.

*Research Question One: Do trainees in two training groups (with the structured on-the-job training approach and the classroom training approach) differ in their self-assessment of general self-efficacy?*

Independent samples t-test was used to examine the difference in the means of the scores of general self-efficacy for the classroom training group and the structured on-the-job training group. Levene’s test for equality of variances was conducted to ensure equal variance. An F ratio of .028 with a probability of .867 (p> 0.05) supported the assumption of homogeneity. As shown in Table 4.3, the mean scores for general self-efficacy for the classroom training group and the structured on-the-job training group were 2.80 with a standard deviation of 0.79 and 2.71 with a standard deviation of 0.81, respectively. Table 4.9 shows that the t value is 0.995 and is not significant at the 0.05 alpha level. Thus, the t-test results indicated that there was no significant difference in the assessment of general self-efficacy between the classroom training group and the structured on-the-job training group.
Table 4.9: Independent Samples t-test for Classroom Training Group (n = 147) and Structured On-the-Job Training Group (n = 155) for General Self-Efficacy Scores

| General Self-Efficacy Classroom Training and Structured On-the-Job Training Groups |
|----------------------------------|----------|-------|-------------|---------------|
| T                                | df       | Sig.  | Mean Difference |
| 0.995                            | 300      | 0.321 | 0.09161       |

Research Question Two: Do trainees with the classroom training approach and with the structured on-the-job training approach differ in their self-assessment of self-efficacy to achieve training outcomes?

Independent samples t-test was used to examine the difference in the means of the scores of self-efficacy to achieve training outcomes for the classroom training group and the structured on-the-job training group. Levene’s test for equality of variances was conducted to ensure equal variance. An F ratio of 1.408 with a probability of 0.236 supported the assumption of homogeneity. As shown in Table 4.2, the mean scores of the self-efficacy to achieve training outcomes for the classroom training group and the structured on-the-job training group were 2.82 with a standard deviation of 0.90 and 2.41 with a standard deviation of 0.96, respectively. As shown in Table 4.10, the t value is 3.804 and is significant at the 0.05 alpha level. Thus, there was indeed a difference in the assessment of self-efficacy to achieve training outcomes between the trainees who received classroom training and those who received structured on-the-job training.
Research Question Three: Do trainees with the classroom training approach and with the structured on-the-job training approach show different relationships between their general self-efficacy and their levels of self-efficacy to achieve training outcomes?

Correlational statistics were used to determine the relationship between the trainees’ general self-efficacy and their self-efficacy to achieve training outcomes. Basically, in correlational research, researchers seek to determine whether a relationship exists between two (or more) quantitative variables. The correlation coefficient, designated by the symbol r, expresses the degree of relationship between two sets of scores. The value of a correlation coefficient is expressed in results ranging from a perfect positive relationship (1.00) through no relationship (0.00) to a perfect negative (-1.00). A positive relationship is indicated when high scores on one variable are accompanied by high scores on the other, while low scores on that variable are accompanied by low scores on the other, and so forth. Conversely, a negative relationship is indicated when the high scores on one variable are accompanied by low scores on the other.
For research question three, the first null hypothesis is “there is zero correlation existing between trainees’ general self-efficacy and their self-efficacy to achieve training outcomes when receiving the classroom training,” and the research hypothesis is “there is a nonzero correlation existing between trainees’ general self-efficacy and their self-efficacy to achieve training outcomes when receiving the classroom training.” The second null hypothesis is “there is zero correlation existing between trainees’ general self-efficacy and their self-efficacy to achieve training outcomes when receiving the SOJT,” and the research hypothesis is “there is a nonzero correlation existing between trainees’ general self-efficacy and their self-efficacy to achieve training outcomes when receiving the SOJT.”

Tables 4.11, 4.12 and 4.13 present the results of the correlation statistics between general self-efficacy and self-efficacy to achieve training outcomes for the total sample, the classroom training group and the structured on-the-job training group, respectively. The correlation coefficient between general self-efficacy and self-efficacy to achieve training outcomes for the total sample is 0.408, and is statistically significant at the 0.01 alpha level. The correlation coefficient between the trainees’ general self-efficacy and their self-efficacy to achieve training outcomes for the classroom training group is 0.533, and is statistically significant at the 0.01 alpha level. The correlation coefficient between the trainees’ general self-efficacy and their self-efficacy to achieve training outcomes for the structured on-the-job training group is 0.293, and is statistically significant at the 0.01 alpha level. All these results indicate that there is a significant positive relationship between the trainees’ general self-efficacy and their
self-efficacy to achieve training outcomes. In addition, the results show that there is a moderate relationship between the trainees’ general self-efficacy and their self-efficacy to achieve training outcomes for the total sample and for the classroom training group. However, the correlation between general self-efficacy and self-efficacy to achieve training outcomes for the S-OJT group showed a low or weak relationship.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General Self-Efficacy</td>
<td>1.000</td>
<td>.408**</td>
</tr>
<tr>
<td>2. Self-Efficacy to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Achieve Training Outcomes</td>
<td></td>
<td>1.000</td>
</tr>
</tbody>
</table>

**p<0.01

Table 4.11: Correlation Matrix between General Self-Efficacy and Self-Efficacy to Achieve Training Outcomes, Total Sample (n=302)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General Self-Efficacy</td>
<td>1.000</td>
<td>.533**</td>
</tr>
<tr>
<td>2. Self-Efficacy to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Achieve Training Outcomes</td>
<td></td>
<td>1.000</td>
</tr>
</tbody>
</table>

**p<0.01

Table 4.12: Correlation Matrix between General Self-Efficacy and Self-Efficacy to Achieve Training Outcomes for the Classroom Training Group (n=147)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General Self-Efficacy</td>
<td>1.000</td>
<td>.293**</td>
</tr>
<tr>
<td>2. Self-Efficacy to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Achieve Training Outcomes</td>
<td></td>
<td>1.000</td>
</tr>
</tbody>
</table>

**p<0.01

Table 4.13: Correlation Matrix between General Self-Efficacy and Self-Efficacy to Achieve Training Outcomes for the Structured On-the-Job Training Group (n=155)
Research Question Four: Do trainees with high levels of general self-efficacy differ in their assessment of self-efficacy to achieve training outcomes after training using classroom and structured on-the-job training approaches?

In order to respond to this question, it was necessary to distinguish the trainees who had high general self-efficacy from those who had low general self-efficacy. The results of the normality test, presented in Tables 5 to 8, showed that the scores of the classroom training group and the structured on-the-job training group were normally distributed and also that the sample was selected from a population which was normally distributed. According to the literature, in any normal distribution, the mean, median, and mode are identical, and the mean falls at the exact center of the curve. In other words, 50 percent of the scores must fall on each side of the mean. In addition, 68 percent of the scores fall within the range of one standard deviation above and below the mean with half of these scores (34 percent) above the mean and the other half below the mean (Fraenkel & Wallen, 2008). Thirty-two percent of the scores, then, fall outside one standard deviation above and below the mean.

Therefore, in this study, it was determined that the trainees whose general self-efficacy scores were higher than 3.56 (one standard deviation above the mean) would belong to the low self-efficacy group, and the trainees whose general self-efficacy scores were lower than 1.96 (one standard deviation below the mean) would belong to the high self-efficacy group. The trainees with high general self-efficacy were divided into two groups according to the different training approaches: the high general self-efficacy classroom training group (High GSE CT group) and the high general
self-efficacy structured on-the-job training group (High GSE S-OJT group).

Independent samples t-test was used to examine the difference between the means of the scores for self-efficacy to achieve training outcomes for the higher general self-efficacy groups with different training methods. Levene’s test for equality of variances was conducted to ensure equal variance. An F ratio of 0.461 with a probability of 0.50 supports the assumption of homogeneity. As Table 4.14 shows, the trainees with higher general self-efficacy who were in the classroom training group had a mean score for self-efficacy to achieve training outcomes of 1.98, with a standard deviation of 0.76. Trainees with higher general self-efficacy who were in the structured on-the-job training group had a mean score of 1.91, with a standard deviation of 0.92. As shown in Table 4.15, the t value is 0.302 and is not significant at the 0.05 alpha level. Thus, the results of the t-test indicate that there was no significant difference in the assessment of self-efficacy to achieve training outcomes for the two groups. In other words, there was no difference in the trainees’ assessment of their own self-efficacy to achieve training outcomes for the trainees with high general self-efficacy who received different training methods.

<table>
<thead>
<tr>
<th>Independent Sample Statistics</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Efficacy to Achieve Training Outcomes</td>
<td>n</td>
<td>Mean</td>
</tr>
<tr>
<td>High General Self-Efficacy Classroom Training Group</td>
<td>20</td>
<td>1.98</td>
</tr>
<tr>
<td>High General Self Efficacy S-OJT Group</td>
<td>33</td>
<td>1.91</td>
</tr>
</tbody>
</table>

Table 4.14: Mean Score and Standard Deviation for Self-Efficacy to Achieve Training Outcomes for High GSE CT Group (n = 20) and High GSE S-OJT Group (n = 33)
<table>
<thead>
<tr>
<th>Independent Samples t-test</th>
<th>T</th>
<th>df</th>
<th>Sig.</th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Efficacy to Achieve Training Outcomes</td>
<td>0.302</td>
<td>51</td>
<td>0.764</td>
<td>0.078</td>
</tr>
<tr>
<td>High General Self-Efficacy CT Group and High General Self-Efficacy S-OJT Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.15: Independent Samples t-test for High GSE CT Group (n = 20) and High GSE S-OJT Group (n = 33) for Self-Efficacy to Achieve Training Outcomes Scores

*Research Question Five*: Do trainees with low levels of general self-efficacy differ in their assessment of self-efficacy to achieve training outcomes after training using classroom and structured on-the-job training approaches?

The same criterion used in research question 4 was applied to distinguish the trainees who had low general self-efficacy. The trainees with low general self-efficacy were divided into two groups based on the two different training approaches: the low general self-efficacy classroom training group (Low GSE CT group) and the low general self-efficacy structured on-the-job training group (Low GSE S-OJT group).

Independent samples t-test was used to examine the difference between the mean scores of the self-efficacy to achieve training outcomes for the lower general self-efficacy groups with different training methods. Levene’s test for equality of variances was conducted to ensure equal variance. An F ratio of 1.496 with a probability of 0.226 supported the assumption of homogeneity. Table 4.16 shows that the trainees with low general self-efficacy who were in the classroom training group had a mean rater score for self-efficacy to achieve training outcomes of 3.58, with a standard
deviation of 0.90. The trainees with low general self-efficacy in the structured on-the-job training group had a mean rater score of 2.84, with a standard deviation of 1.03. According to the t-test result, shown in Table 4.17, the t value is 2.931 and is significant at the 0.05 alpha level, which indicates that there was a significant difference between the two groups in the trainees’ assessment of their self-efficacy to achieve training outcomes. Thus, there was indeed a difference in the assessment of self-efficacy to achieve training outcomes for the trainees with low general self-efficacy who received different training methods. The structured on-the-job training generated higher self-efficacy to achieve outcomes than the classroom training method for the trainees with low general self-efficacy.

<table>
<thead>
<tr>
<th>Independent Sample Statistics</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Efficacy to Achieve Training Outcomes</td>
<td>n</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Low General Self-Efficacy Classroom Training Group</td>
<td>31</td>
<td>3.58</td>
<td>0.90</td>
</tr>
<tr>
<td>Low General Self Efficacy S-OJT Group</td>
<td>27</td>
<td>2.84</td>
<td>1.03</td>
</tr>
</tbody>
</table>

Table 4.16: Mean Score and Standard Deviation for Self-Efficacy to Achieve Training Outcomes for Low GSE CT Group (n = 31) and Low GSE S-OJT Group (n = 27)

<table>
<thead>
<tr>
<th>Independent Samples t-test</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Efficacy to Achieve Training Outcomes</td>
<td>T</td>
<td>df</td>
<td>Sig.</td>
</tr>
<tr>
<td>Low General Self-Efficacy CT and Low General Self-Efficacy S-OJT Groups</td>
<td>2.931</td>
<td>56</td>
<td>0.005</td>
</tr>
</tbody>
</table>

Table 4.17: Independent Samples t-test for Low GSE CT Group (n = 31) and Low GSE S-OJT Group (n = 27) for Self-Efficacy to Achieve Training Outcomes Scores
Research Question Six: What are the relationships between demographic variables and general self-efficacy across the trainees with high and low levels of general self-efficacy?

The same criterion used in research questions 4 and 5 was applied to distinguish the trainees who had high or low general self-efficacy. The chi-square test was used to examine the relationships between general self-efficacy and the demographic variables, i.e., years in banking, years in organization, years in current position, educational level, training experiences, on-the-job training experiences and performance training experiences.

Tables 4.18 to 4.31 present the results of the chi-square statistics for relationships among general self-efficacy and the seven demographic variables for the trainees with extremely high and low scores (N=111). Based on the chi-square test results, as shown in these tables, no statistically significant correlations were found between these variables and general self-efficacy. In other words, these results indicate that such personal characteristics as the number of years working in banking, in the organization, in the current position, their personal educational level and their previous training experiences did not influence the trainees’ general self-efficacy levels.
Table 4.18: General Self-Efficacy and Years in Banking Category Crosstabulation for High GSE Group (n = 53), Low GSE Group (n = 58) and High and Low GSE Groups Combined (n = 111)

<table>
<thead>
<tr>
<th>General Self-Efficacy</th>
<th>High GSE</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>15</td>
<td>12</td>
<td>26</td>
<td>53</td>
</tr>
<tr>
<td>Expected N</td>
<td></td>
<td>16.7</td>
<td>14.3</td>
<td>22.0</td>
<td>53.0</td>
</tr>
<tr>
<td>% of Total</td>
<td></td>
<td>13.5%</td>
<td>10.8%</td>
<td>23.4%</td>
<td>47.7%</td>
</tr>
<tr>
<td>Low GSE</td>
<td></td>
<td>20</td>
<td>18</td>
<td>20</td>
<td>58</td>
</tr>
<tr>
<td>Expected N</td>
<td></td>
<td>18.3</td>
<td>15.7</td>
<td>24.0</td>
<td>58.0</td>
</tr>
<tr>
<td>% of Total</td>
<td></td>
<td>18.0%</td>
<td>16.2%</td>
<td>18.0%</td>
<td>52.3%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>35</td>
<td>30</td>
<td>46</td>
<td>111</td>
</tr>
<tr>
<td>Expected N</td>
<td></td>
<td>35.0</td>
<td>30.0</td>
<td>46.0</td>
<td>111.0</td>
</tr>
<tr>
<td>% of Total</td>
<td></td>
<td>31.5%</td>
<td>27.0%</td>
<td>41.4%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Table 4.19: Chi-Square Test for the Relationship between GSE and Years in Banking, High and Low GSE Groups Combined (n = 111)

<table>
<thead>
<tr>
<th></th>
<th>$\chi^2$</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>2.477a</td>
<td>2</td>
<td>.290</td>
</tr>
</tbody>
</table>

a. 0 cells (0%) have expected count less than 5. The minimum expected count is 14.32.
<table>
<thead>
<tr>
<th>General Self-Efficacy</th>
<th>Years in Organization</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Less than 4 years</td>
<td>4-8 Years</td>
</tr>
<tr>
<td>High GSE</td>
<td>29</td>
<td>13</td>
</tr>
<tr>
<td>Expected N</td>
<td>34.9</td>
<td>10.5</td>
</tr>
<tr>
<td>% of Total</td>
<td>26.1%</td>
<td>11.7%</td>
</tr>
<tr>
<td>Low GSE</td>
<td>44</td>
<td>9</td>
</tr>
<tr>
<td>Expected N</td>
<td>38.1</td>
<td>11.5</td>
</tr>
<tr>
<td>% of Total</td>
<td>39.6%</td>
<td>8.1%</td>
</tr>
<tr>
<td>Total</td>
<td>73</td>
<td>22</td>
</tr>
<tr>
<td>Expected N</td>
<td>73.0</td>
<td>22.0</td>
</tr>
<tr>
<td>% of Total</td>
<td>65.8%</td>
<td>19.8%</td>
</tr>
</tbody>
</table>

Table 4.20: General Self-Efficacy and Years in Organization Category Crosstabulation for High GSE Group (n = 53), Low GSE Group (n = 58) and High and Low GSE Groups Combined (n = 111)

<table>
<thead>
<tr>
<th></th>
<th>$\chi^2$</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>5.846°</td>
<td>2</td>
<td>.054</td>
</tr>
</tbody>
</table>

a. 0 cells (0%) have expected count less than 5. The minimum expected count is 7.64.

Table 4.21: Chi-Square Test for the Relationship between GSE and Years in Organization, High and Low GSE Groups Combined (n = 111)
<table>
<thead>
<tr>
<th>General Self-Efficacy</th>
<th>Years in Current Position</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Less than 4 Years</td>
<td>4-8 Years</td>
</tr>
<tr>
<td>High GSE</td>
<td>N</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>Expected N</td>
<td>35.8</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>29.7%</td>
</tr>
<tr>
<td>Low GSE</td>
<td>N</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>Expected N</td>
<td>39.2</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>37.8%</td>
</tr>
<tr>
<td>Total</td>
<td>N</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>Expected N</td>
<td>75.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>67.6%</td>
</tr>
</tbody>
</table>

Table 4.2: General Self-Efficacy and Years in Current Position Category Crosstabulation for High GSE Group (n = 53), Low GSE Group (n = 58) and High and Low GSE Groups Combined (n = 111)

<table>
<thead>
<tr>
<th></th>
<th>( \chi^2 )</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>5.310\textsuperscript{a}</td>
<td>2</td>
<td>.070</td>
</tr>
</tbody>
</table>

a. 0 cells (0%) have expected count less than 5. The minimum expected count is 8.59.

Table 4.23: Chi-Square Test for the Relationship between GSE and Years in Current Position, High and Low GSE Groups Combined (n = 111)
<table>
<thead>
<tr>
<th>General Self-Efficacy</th>
<th>Educational Level</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>High GSE</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Expected N</td>
<td>4.8</td>
<td>6.2</td>
</tr>
<tr>
<td>% of Total</td>
<td>2.7%</td>
<td>7.2%</td>
</tr>
<tr>
<td>Low GSE</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Expected N</td>
<td>5.2</td>
<td>6.8</td>
</tr>
<tr>
<td>% of Total</td>
<td>6.3%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>Expected N</td>
<td>10.0</td>
<td>13.0</td>
</tr>
<tr>
<td>% of Total</td>
<td>9.0%</td>
<td>11.7%</td>
</tr>
</tbody>
</table>

Education Level: 1 = High school diploma, 2 = Some University/College, 3 = University/College degree, 4 = Master’s degree

Table 4.24: General Self-Efficacy and Education Level Category Crosstabulation for High GSE (n = 53), Low GSE (n = 58) and High and Low GSE Groups Combined (n = 111)

<table>
<thead>
<tr>
<th></th>
<th>( \chi^2 )</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>3.219(^a)</td>
<td>3</td>
<td>0.359</td>
</tr>
</tbody>
</table>

\(^a\) 1 cell (12.5\%) has expected count less than 5. The minimum expected count is 4.77.

Table 4.25: Chi-Square Test for the Relationship between GSE and Education Level, High and Low GSE Groups Combined (n = 111)
<table>
<thead>
<tr>
<th>General Self-Efficacy</th>
<th>Training Experience</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>None</td>
<td>One to Three</td>
</tr>
<tr>
<td>High GSE</td>
<td>N</td>
<td>8</td>
</tr>
<tr>
<td>Expected N</td>
<td>11.5</td>
<td>21.5</td>
</tr>
<tr>
<td>% of Total</td>
<td>7.2%</td>
<td>18.9%</td>
</tr>
<tr>
<td>Low GSE</td>
<td>N</td>
<td>16</td>
</tr>
<tr>
<td>Expected N</td>
<td>12.5</td>
<td>23.5</td>
</tr>
<tr>
<td>% of Total</td>
<td>14.4%</td>
<td>21.6%</td>
</tr>
<tr>
<td>Total</td>
<td>N</td>
<td>24</td>
</tr>
<tr>
<td>Expected N</td>
<td>24.0</td>
<td>45.0</td>
</tr>
<tr>
<td>% of Total</td>
<td>21.6%</td>
<td>40.5%</td>
</tr>
</tbody>
</table>

Table 4.26: General Self-Efficacy and Training Experience Category Crosstabulation for High GSE (n = 53), Low GSE (n = 58) and High and Low GSE Groups Combined (n = 111)

<table>
<thead>
<tr>
<th></th>
<th>$\chi^2$</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>3.506a</td>
<td>2</td>
<td>.173</td>
</tr>
</tbody>
</table>

a. 0 cells (0%) have expected count less than 5. The minimum expected count is 11.46.

Table 4.27: Chi-Square Test for the Relationship between GSE and Training Experience, High and Low GSE Groups Combined (n = 111)
<table>
<thead>
<tr>
<th>General Self-Efficacy</th>
<th>High GSE</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Yes</td>
</tr>
<tr>
<td>High GSE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expected N</td>
<td>31.5</td>
<td>21.5</td>
</tr>
<tr>
<td>% of Total</td>
<td>30.6%</td>
<td>17.1%</td>
</tr>
<tr>
<td>Low GSE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expected N</td>
<td>34.5</td>
<td>23.5</td>
</tr>
<tr>
<td>% of Total</td>
<td>28.8%</td>
<td>23.4%</td>
</tr>
<tr>
<td>Total</td>
<td>N</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>Expected N</td>
<td>66.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>59.5%</td>
</tr>
</tbody>
</table>

Table 4.28: General Self-Efficacy and On-the-Job Training Experience Category Crosstabulation for High GSE Group (n = 53), Low GSE Group (n = 58) and High and Low GSE Groups Combined (n = 111)

<table>
<thead>
<tr>
<th>Test Statistics</th>
<th>Chi-Square</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>.926³</td>
<td>1</td>
<td>.336</td>
</tr>
</tbody>
</table>

a. 0 cells (0%) have expected count less than 5. The minimum expected count is 21.49.

Table 4.29: Chi-Square Test for the Relationship between GSE and On-the-Job Training Experience, High and Low GSE Groups Combined (n = 111)
<table>
<thead>
<tr>
<th>General Self-Efficacy</th>
<th>Performance Training Experiences</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>High GSE</td>
<td>8</td>
<td>45</td>
</tr>
<tr>
<td>Expected N</td>
<td>8.1</td>
<td>44.9</td>
</tr>
<tr>
<td>% of Total</td>
<td>7.2%</td>
<td>40.5%</td>
</tr>
<tr>
<td>Low GSE</td>
<td>9</td>
<td>49</td>
</tr>
<tr>
<td>Expected N</td>
<td>8.9%</td>
<td>49.1%</td>
</tr>
<tr>
<td>% of Total</td>
<td>8.1%</td>
<td>44.1%</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
<td>94</td>
</tr>
<tr>
<td>Expected N</td>
<td>17.0</td>
<td>94.0</td>
</tr>
<tr>
<td>% of Total</td>
<td>15.3%</td>
<td>84.7%</td>
</tr>
</tbody>
</table>

Table 4.30: General Self-Efficacy and Performance Training Experiences Category Crosstabulation for High GSE Group (n = 53), Low GSE Group (n = 58) and High and Low GSE Groups Combined (n = 111)

<table>
<thead>
<tr>
<th></th>
<th>$\chi^2$</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>.004$^a$</td>
<td>1</td>
<td>.951</td>
</tr>
</tbody>
</table>

a. 0 cells (0%) have expected count less than 5. The minimum expected count is 8.12.

Table 4.31: Chi-Square Test for the Relationships between GSE and Performance Training Experiences, High and Low GSE Groups Combined (n = 111)
Results of Structured Interview

Follow-up interviews were conducted in the first week of April, 2009. Out of 528 participants, 36 trainees participated in this activity. The results for the four interview questions are summarized as follows.

*Question One: Do you think the description of the training process in the training scenario was clear?*

Of the 36 trainees interviewed, 31 interviewees thought the description of the training process in the training scenario was clear. Five respondents thought that more detail could be added in the description, such as providing more training content, trainers’ teaching styles and so on.

*Question Two: Do you think the description of the training process in the training scenario provided you with an experience comparable to a real training activity?*

Thirty interviewees thought that the description of the training process in the training scenario could help them imagine a real training activity since the trainees had received similar training in the past. However, six interviewees thought that the description of the training process in the training scenario did not provide an experience comparable to a real training activity and suggested that a real training activity should be conducted.
Question Three: Did the description of the training process in the scenario provide you with a clear idea of how the training would be conducted?

Over half of the interviewees thought that the description of the training process in the training scenario could provide them with a clear idea of how the training would be conducted since most trainees had received classroom training or structured or unstructured on-the-job training in the past; this was the case especially for the trainees with the classroom training scenario.

Question Four: Which part of the training activity in the training scenario, the characteristics of the trainer, the quality of the module, the training location, the duration of the training program, the feedback from the trainer or practice, helped you generate higher self-efficacy to achieve training outcomes?

Among the 36 trainees interviewed, 27 thought feedback from the trainer and practice were the most important factors influencing their level of self-efficacy to achieve training outcomes. Specifically, 17 interviewees thought practice was the most important factor influencing the level of self-efficacy to achieve training outcomes, and 10 interviewees reported that feedback from the trainer was the most important factor influencing the level of self-efficacy to achieve training outcomes. In addition, 8 trainees thought characteristics of the trainer was the most important factor influencing their level of self-efficacy to achieve training outcomes. One trainee thought the quality of module was the most important factor influencing the level of self-efficacy to achieve training outcomes. Overall, according to the interviews, the first three factors
influencing trainees’ level of self-efficacy to achieve training outcomes were practice, feedback from the trainer and the characteristics of the trainer.

Based on the interviews, the reason the interviewees thought practice was an important factor influencing their level of self-efficacy was that the trainees could not only learn from errors but also gain hands-on experience, which would increase their confidence to transfer learned knowledge, skills and behavior to their jobs. The reason the interviewees thought feedback from the trainer was an important factor influencing their level of self-efficacy was that the trainees could realize how much they had learned from the training so that they could correct mistakes or get reinforcement for what they had learned. The reason the interviewees thought characteristics of the trainer was an important factor influencing their level of self-efficacy was that the trainers’ characteristics were related to teaching style, teaching attitudes, and the types of feedback provided, which would influence their learning motivation and level of confidence in their ability to achieve training objectives.
CHAPTER 5

SUMMARY, DISCUSSION, AND IMPLICATIONS

This chapter is divided into three sections. The first section summarizes the results regarding the three research questions. The second section is a broader discussion of the results of the study. The final section presents implications of the results for HRD research and practice.

Summary of Findings

This study was designed to investigate the influences of the classroom training approach versus the structured on-the-job training approach on a trainee’s self-efficacy to achieve training outcomes. In addition, this study explored the relationships between the variables of trainees’ general self-efficacy and self-efficacy to achieve training outcomes and two training approaches.

Because of difficulties encountered in conducting a simple random selection and the complexity of delivering real training to trainees, convenience sampling was used to select the participants, and questionnaires with written training scenarios of the two training approaches were used instead of real training. To secure the participation of
real bankers, the bankers who enrolled for classes in the Taiwan Academy of Banking and Finance (TABF) from February 21 to March 21, 2009, were selected as participants in this research; the total number in the sample frame was 528. Two questionnaires describing the two different training approaches and asking participants about the anticipated outcomes of the training were randomly distributed to these 528 bankers in training programs in TABF. Three hundred two out of the total 528 respondents completed the survey questionnaires and provided complete information for the data analysis. Among these 302 responses, there were 147 responses for questionnaires with the classroom training approach and 155 responses for questionnaires with the S-OJT approach. Since randomization was used to assign the trainees to the two groups and since, as shown in Table 4.1, the demographic information for the two groups was very similar, the groups which were created based on two different training approaches can be assumed to be equivalent (Fraenkel & Wallen, 2000). The data analyses revealed the following results.

**Research Question One: Do trainees in two training groups (with the structured on-the-job training approach and the classroom training approach) differ in their self-assessment of general self-efficacy?**

The trainees in the classroom training group and those in the structured on-the-job training group did not differ significantly in their self-assessment of general self-efficacy. In other words, the trainees in the classroom training group had similar levels of general self-efficacy compared to those in the structured on-the-job training group.
Research Question Two: Do trainees with the structured on-the-job training approach and with the classroom training approach differ in their self-assessment of self-efficacy to achieve training outcomes?

The trainees with the structured on-the-job training approach and those with the classroom training approach did differ significantly in their self-assessment of self-efficacy to achieve training outcomes. That is, the trainees’ responses indicated greater confidence in their self-efficacy to achieve training outcomes after receiving structured on-the-job training than after classroom training.

Research Question Three: Do trainees with the classroom training approach and with the structured on-the-job training approach show different relationships between general self-efficacy and their levels of self-efficacy to achieve training outcomes?

Overall, the correlation between the trainees’ general self-efficacy and their self-efficacy to achieve training outcomes for the total sample and for the classroom training group showed a moderately strong relationship between the two variables. However, the relationship between general self-efficacy and self-efficacy to achieve training outcomes for the S-OJT group was weaker.

Research Question Four: Do trainees with high levels of general self-efficacy differ in their assessment of self-efficacy to achieve training outcomes after training using classroom and structured on-the-job training approaches?

Trainees with high levels of general self-efficacy did not differ significantly in
their assessment of self-efficacy to achieve training outcomes after training using classroom and structured on-the-job training approaches. That is, the trainees with high general self-efficacy showed similar levels of confidence in developing self-efficacy to achieve training outcomes when receiving structured on-the-job training or classroom training.

*Research Question Five: Do trainees with low levels of general self-efficacy differ in their assessment of self-efficacy to achieve training outcomes after training using classroom and structured on-the-job training approaches?*

Trainees with low levels of general self-efficacy did differ significantly in their assessment of self-efficacy to achieve training outcomes after training using classroom and structured on-the-job training approaches. That is, the trainees with low general self-efficacy showed more confidence in developing greater self-efficacy to achieve training outcomes after receiving structured on-the-job training than those receiving classroom training.

*Research Question Six: What are the relationships between demographic variables and general self-efficacy across the trainees with high and low levels of general self-efficacy?*

Based on the chi-square statistical test results, none of the demographic variables obtained in this study design, years in banking, years in the organization, years in current position, educational level, previous training experiences, on-the-job training
experiences and performance training experiences, correlated with the levels of trainees’
general self-efficacy.

Discussion

The discussion section will seek to elucidate the meaning of the results.
Several in-depth interpretations of the results will be discussed.

First, prior to the training, the trainees in the two groups were similar in their
general self-efficacy. Therefore, when comparing the specific self-efficacy
(self-efficacy to achieve training outcomes) for the two groups receiving different
training approaches, the trainees’ initial general self-efficacy would not be a factor
influencing the training results and learning performance of either group.

Second, the findings indicate that the training approaches had an influence on
the trainees’ self-efficacy and, specifically, that S-OJT generated higher self-efficacy to
achieve training outcomes compared to the classroom training approach among trainees.
In addition, the findings offer confirmation that factors such as behavior modeling,
reinforcement and practice, which are included in the structured on-the-job training
approach but not in classroom training, are critical to the development of a trainee’s
self-efficacy. These results not only reinforce the argument of previous studies that
self-efficacy can be developed and effectively managed through training (Luthans, 2002),
but also are consistent with findings of previous studies which have shown that training
methods comprised of cognitive modeling with practice and reinforcement generated
significantly higher participant self-efficacy than methods involving either lecture or
practice alone (Gist, 1989; Gist, Schwoerer & Rosen, 1989).

Third, the results show that there was a moderately strong relationship between the trainees’ general self-efficacy and their self-efficacy to achieve training outcomes for the total sample. More specifically, the trainees with high general self-efficacy had higher perceived self-efficacy to achieve the training outcomes after the training than trainees with low general self-efficacy. In this study, the correlation coefficient for the relationship between trainees’ general self-efficacy and their self-efficacy to achieve the training outcomes was 0.408 (for the total sample). Since the square of the correlation coefficient represents the proportion of the variance on one variable that can be accounted for by the other variable, this finding means that about 16 percent of the difference among trainees in self-efficacy to achieve the training outcomes can be attributed to difference in their levels of general self-efficacy. In other words, about 84 percent of the variance in self-efficacy to achieve the training outcomes is due to other factors, such as training approach and trainees’ beliefs, experience, motivation, learning ability, perception of the favorability of the work environment and previous performance (Gordon & Cohen, 1973; Noe, 1986).

Fourth, the results show that there was indeed a difference in the assessment of self-efficacy to achieve training outcomes for the trainees with low general self-efficacy who received different training methods. That is, the structured on-the-job training generated higher self-efficacy to achieve training outcomes than the classroom training method for the trainees with low general self-efficacy. Such results are consistent with the findings of previous studies, which have indicated that trainees with low self-efficacy
tend to require more guidance in skill instruction and in managing practice activities (Saks, 1994). Specifically, research has indicated that trainees with low self-efficacy have a tendency to be less attentive and focused during training and to experience more anger, frustration, and anxiety during training and thus are less likely to enjoy the learning experience and perceive it to be valuable compared to trainees with higher self-efficacy (Gist et al., 1989, 1991; Saks, 1994). According to Saks (1994), self-efficacy is negatively related to anxiety, and trainees with low self-efficacy may be particularly sensitive to the training method due to their levels of anxiety. Since the S-OJT approach provides structured guidance on how to perform the trainee’s tasks and work in the organization and it includes several factors, in particular, behavior modeling, reinforcement and practice, which can help to increase the perceived self-efficacy of trainees, the trainees with low general self-efficacy are able to benefit from this form of training that maximizes the learning outcomes and also minimizes anxiety in the training process.

Implications

The results of this study contribute to previous research on training and work in the organization and it includes several factors, in particular, behavior modeling, reinforcement and practice, which can help to increase the perceived self-efficacy of trainees, the trainees with low general self-efficacy are able to benefit from this form of training that maximizes the learning outcomes and also minimizes anxiety in the training process.

Implications for HRD Research

The results of this study contribute to previous research on training and
self-efficacy by providing information about the influence of a new training approach (the structured on-the-job training approach) on trainees’ self-efficacy, extending this line of research to a sample of actual working employees (bankers) in organizational settings and pointing the way to a new understanding of the variable of general self-efficacy and its relationship with specific self-efficacy and training approaches as well.

Specifically, the finding that the structured on-the-job training approach can generate greater self-efficacy to achieve training outcomes than the classroom training approach supports and adds to the results of Jacobs (2003), who found that employees who received S-OJT performed better than those who received classroom training, and the results of Gist et al. (1989, 1991), which indicated that self-efficacy can be increased through training methods that incorporate cognitive modeling, reinforcement and practice events. To further extend these research efforts, future research should examine the influences of other types of training approaches on trainees’ specific self-efficacy and replicate this study for other types of employees such as technical staff or in other organizational settings. In addition, since this study was limited by the research method and instrument used (a written training scenario was used instead of real training), conducting real training to assess the influences of the S-OJT and classroom training approaches on trainees’ self-efficacy to achieve training outcomes and actual learning performance would further strengthen the conclusions of this study.

In addition, the finding that trainees’ general self-efficacy is correlated to their post-training self-efficacy (self-efficacy to achieve training outcomes) also adds to the
knowledge related to GSE itself and to the relative influence of GSE and SSE in a training intervention. Thus, future research should investigate training effects on both GSE and SSE among different populations in a variety of situations to enable better understanding of the relationships among training approaches, GSE and SSE (Schwoerer, May, Hollensbe & Mencl, 2005). In addition, future research might measure trainees’ GSE and SSE both before and after the training to determine the influences of S-OJT and classroom training on both variables.

Another issue that might be investigated is how personal characteristics (or demographics) affect a person’s levels of general self-efficacy and specific self-efficacy. Research has indicated that a person’s educational level has little explanatory power in regard to trainees’ specific self-efficacy (Wolf, 1997). However, little is known about the relationships between such demographic variables and general self-efficacy. Although in this study it was found that a number of personal characteristics of the trainees -- the length of time working in banking, in the organization, in their current positions, their personal educational level, and their previous training experiences -- did not significantly influence their general self-efficacy level, future research should try again to identify demographic variables that can influence trainees’ general self-efficacy levels.

**Implications for HRD Practice**

The findings of this study have implications for HRD practitioners. First, from an organizational perspective, the findings indicate that it is important to use a
training program designed to deliver skills and increase trainees’ self-efficacy simultaneously to maximize the training effectiveness. Since it provides structured guidance on how to perform one’s tasks in the organization and includes several components that can help to increase the perceived self-efficacy of trainees during the training process, the structured on-the-job training approach can benefit trainees, especially trainees with low general self-efficacy, by generating higher levels of specific self-efficacy compared to the classroom training approach to enhance their learning performance. HRD professionals, thus, should consider using the structured on-the-job training approach for trainees, especially for trainees with low general self-efficacy, for trainees who are new to a work situation, for trainees who lack confidence in learning new knowledge and skills, and for trainees who feel fear and anxiety about learning new information, in order to contribute to continuous improvement in the employees’ training effectiveness and job performance.

Second, since in the results of this study there was a significant positive relationship between the trainees’ general self-efficacy and their self-efficacy to achieve training outcomes, when designing training for teaching skills, the significance of a match between individual differences in self-efficacy level and an appropriate training approach needs to be considered by HRD professionals. By measuring trainees’ general self-efficacy before training, HRD professionals can gain a better understanding of the characteristics of the trainees and thus be guided in the design and planning of an appropriate training program. Managers of companies would also benefit from selecting employees with high motivation, confidence in their learning capability, and
positive general self-efficacy as well in order to increase the likelihood that the individuals will perform well during training sessions (Schwoerer, May, Hollensbe & Mencl, 2005).
References


Rotter, J.B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs, 80, (1).*


Appendices
Appendix A

RECRUITMENT LETTER
Dear Sir or Madam:

I am WenRou Huang, a Ph.D. candidate from the Ohio State University in the United States. I am working on my Ph.D. dissertation now, and Professor Ronald L. Jacobs is my advisor. We are planning a study in which we intend to investigate and compare the influence of different training approaches on trainees’ self-efficacy to achieve training outcomes. The results of this study can be applied in several areas, such as leader/leadership training, expatriate training and employees’ on the job training. This topic has emerged as an important issue in many global organizations and has attracted more and more research attention in education, business and organization behavior areas.

All the responses from the employees (trainees) will be kept CONFIDENTIAL and used only for RESEARCH PURPOSES.

If your company/center is interested in participating in this study or if you have any questions, please contact me through e-mail, huang.235@osu.edu. We appreciate your time and help and would like to offer our sincere thanks to you in advance.

Sincerely yours,

Ronald L. Jacobs, Ph.D.
Professor, WDE
The Ohio State University
Email: Jacobs.3@osu.edu

Wen-Rou Huang, MA, MLHR
Ph.D. Candidate
The Ohio State University
Email: huang.235@osu.edu
Appendix B

VERBAL EXPLANATION
Hello everyone,

This is WenRou Huang, Ph.D. candidate in Workforce Development and Education at the Ohio State University. My advisor and I are studying how individuals perceive the effectiveness of different training approaches. We need your help in filling out the questionnaire and taking part in the phone interview activity to complete this study.

The questionnaire of this study is divided into three parts. Part I asks for some information about yourself. Part II asks you to respond to statements concerning your general self-efficacy. Part III asks you to read a brief scenario and then respond to indicate the extent to which you might be able to achieve certain training outcomes. This survey will take you approximately 20 minutes. After this survey, follow-up interviews will be conducted in order to acquire more information regarding the instruments and to clarify why you reply the way you do. For the follow-up, it will take you approximately 20 minutes to answer the questions during a structured phone interview.

Please note that, first, participation is voluntary. You can choose to participate or not to participate in this study without any duress or pressure from any source and your decision will not affect or benefit you in any way. In other words, refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled, and that you may stop participation at any time without penalty or loss of benefits to which you are otherwise entitled.

Second, this study is of low risk. One foreseeable risk is the breach of confidentiality, which will be minimized by protective measures. For example, no identifiable private information will be obtained in the survey activity. In addition, all responses to this survey will be kept confidential and only aggregate data will be reported. Furthermore, the investigators will substitute codes for participants who would like to participate in the phone interview as soon as possible. The code lists, contact information and data will be well maintained and stored in investigators’ personal laptop with protecting password. All data will be deleted immediately after completing the study.

Third, we are mainly exploring the issues regarding how individuals perceive the effectiveness of different training approaches in this study. The results of this study will add knowledge in theoretical and practical areas of human resource development.
That is, the results from this study can serve as a reference for trainers or potential trainers when designing training programs. In addition, the results will provide both trainers and researchers with the idea about which training approach can generate higher self-efficacy and which factors are important influences in the training effectiveness.

Finally, there is no compensation or other incentive to participate in this research study.

As mentioned, this survey will take you about 20 minutes. If you would like to participate in this study and are also willing to be phone interviewed, please fill out the questionnaire and provide your contact information and available time in the form and return it to me with the questionnaire. If you would like to participate in the survey but are not willing to be phone interviewed, please highlight “no” in the interview contact information form and return it to me with the questionnaire. By the way, if you would not like to participate in this study, please leave the room quietly.

I will ensure you again that all the information you provide will be kept confidential and again, you have the option to withdraw from participation at any time without being questioned. For example, if the questions in this study, both survey and interview, make you feel uncomfortable or the time required to answer the questions is not convenient for you, you can withdraw from the study at any time.

I will stay here to assist you filling out the questionnaires. If you have any questions regarding the questionnaire during the survey process, please raise your hand and I will answer your questions. Or you may contact me through e-mail, huang.235@osu.edu, or Dr. Jacobs Ronald, The Ohio State University (email: Jacobs.3@osu.edu, phone: 002-1-614-292-0581). Also, for the questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you can contact Ms. Sandra Meadows in the Office of Responsible Research Practices (ORRP) at 002-1-614-688-8641.

Many thanks to you in advance for your time and participation.
Appendix C

VERBAL EXPLANATION: CHINESE VERSION
各位 大家好：

我是黃文柔，俄亥俄州立大學人力資源發展教育部的博士候選人，我與我的指導教授正在研究個體對於不同訓練方法所產生的成效的看法。我們需要您的協助，填寫問卷並參與電話訪談，以完成此研究課題。

本問卷將分成三個部分。第一部分是填寫您的個人資料；第二部分是回答一些有關“一般性自我勝任感”的問題；而第三部分則是請您閱讀一段短文，此短文將模擬您接受了一訓練課程，之後回答是否能完成指定的項目。整個問卷過程大約需要您寶貴的 20 分鐘。而在此之後，我們將就問卷題目及您問卷的作答進行電話訪談，此訪談也將佔用您大約 20 分鐘的時間。

首先，參與此研究是屬於自願性質。您可以在沒有任何脅迫壓力下選擇接受或拒絕參與這個研究，且不會影響損害到任何您自身的權益。換句話說，拒絕參與本研究，除了對您不會有任何的處分外，也不會造成個人任何權益的損害。也就是你可以隨時拒絕參與本研究而不會受到任何處分或造成個人任何權益的損害。

第二，本研究是低風險的。唯一可預見的風險是個人資料外洩，而我們將採用各種保護措施來降低這個風險。例如在問卷調查中不會向您索取可識別之個人資料。另外，所有問卷的作答內容將以保密的方式處理，而研究結果則以彙總式的數據呈現。對於要參與電話訪談的每一個人，我們會馬上以代碼編號處理。這些代碼編號及他們的聯絡資料將會以密碼加密的方式保存在我們的筆記型電腦中，並在研究結束後全部刪除。

第三，我們主要在研究個人對於不同訓練方法所產生的成效的看法。研究的結果對於人力資源發展在理論及應用方面將有很大的貢獻。亦即，研究的結果可以作爲訓練者在設計訓練課程時的參考。此外，研究的結果亦可以使訓練者和研究者知道哪一個訓練方法可以產生較高的“自我勝任感”以及哪些因素會影響訓練的成效。

最後，對於參與此研究並無任何報酬鼓勵。

誠如前面所說，填寫問卷的時間大約為 20 分鐘。如果您願意參與我們的研究並接受電話訪談，請留下您的連絡資料和訪談時間，在問卷填寫完後與問卷一併交回給Workforce Development & Education School of Physical Activity and Educational Services
我。如果您願意參與我們的研究但是不希望接受電話訪談，請在『電話訪談聯絡資料／訪談時間表』中的『否』打勾，並在問卷填寫完後與問卷一併交回給我。倘若您不願意參與我們的研究，麻煩您保持安靜離開本教室。

本人再次保證您的個人資料將會以保密的方式處理。同時，您可以隨時放棄參與我們的研究。例如：如果問卷上及電話訪談中的問題讓你覺得不舒服或是你現在不方便回答問題，您都可以隨時放棄參與我們的研究。

我會在這裡協助你們填寫問卷。如果您對問卷有任何疑問，請舉手告知，本人將為您解答。或者您也可以利用電子郵件與我們聯絡，我的 e-mail 信箱為 huang.235@osu.edu，或俄亥俄州立大學的 Ronald Jacobs 博士 (e-mail：Jacobs.3@osu.edu，聯絡電話：002-1-614-292-0581)。此外，假如您想瞭解您參與本研究所應有的權利，或是想和非本研究團隊的人討論與本研究課題相關的事宜或有任何抱怨，您可以與研究負責中心辦公室(Office of Responsible Research Practices, ORRP)的 Sandra Meadows 小姐聯絡，電話是 002-1-614-688-8641。

再次感謝您的參與及寶貴時間！
Appendix D

TRAINING OPTION A
We are studying how individuals perceive the effectiveness of different training approaches. The results of this study will add knowledge in theoretical and practical areas of human resource development. Please complete the following questionnaire, which will take you approximately 20 minutes. The questionnaire is divided into three parts. Part I asks for some information about yourself. Part II asks you to respond concerning your general self-efficacy. Part III asks you to read a brief scenario and then respond to the extent which you might be able to achieve certain training outcomes.

Please note that there is no compensation or other incentive to participate in this research study. In addition, participation is voluntary, which means that you can choose to participate or not to participate in this study without any duress or pressure from any source. In other words, refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled, and that you may stop participation at any time without penalty or loss of benefits to which you are otherwise entitled. Furthermore, this study is of low risk. The only foreseeable risk is the breach of confidentiality, which will be minimized by protective measures.

All responses to this survey will be kept confidential. Only aggregate data will be reported in the study results.

If the questions in this study, both survey and interview, make you feel uncomfortable or the time required to answer the questions is not convenient for you, you can withdraw from the study at any time. If you have any questions, please contact Dr. Ronald Jacobs at Jacobs.3@osu.edu or WenRou Huang at huang.235@osu.edu. Also, for the questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you can contact Ms. Sandra Meadows in the Office of Responsible Research Practices (ORRP) at 002-1-614-688-8641.

Thank you very much in advance for your participation. Your cooperation is highly appreciated.

Sincerely,

Wen-Rou Huang, MA, MLHR
Ph.D. Candidate
The Ohio State University
Email: huang.235@osu.edu
I. PARTICIPANT INFORMATION

Instructions: Please respond to the following questions about your background.

1 How long have you worked in banking?
   □ Less than one year: Number of months ______
   □ One or more years: Number of years ______

2 How long have you worked for your present organization?
   □ Less than one year: Number of months ______
   □ One or over one year: Number of years ______

3 How long have you been in the present position?
   □ Less than one year: Number of months ______
   □ One or over one year: Number of years ______

4 What is your educational level?
   □ High school diploma
   □ Some University/College
   □ University/College degree
   □ Master’s degree
   □ Ph.D.

5 How many company-sponsored classroom training programs have you attended in the past year?
   □ None
   □ One to three
   □ More than three

6 Have you received on-the-job training from a peer or supervisor in the past year?
   □ Yes: Estimate the number of days/hours ______
   □ No

7 Have you ever attended training on conducting performance reviews for subordinate employees?
   □ Yes: How long ago ______
   □ No
### PART II. GENERAL SELF-EFFICACY

**Instructions:** Please respond to the following questions regarding your general self-efficacy.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. When I make plans, I am certain I can make them work.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>2. One of my problems is that I cannot get down to work when I should.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>3. If I cannot do a job the first time, I keep trying until I can.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>4. When I set important goals for myself, I rarely achieve them.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>5. I give up on things before completing them.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>6. I avoid facing difficulties.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>7. If something looks too complicated, I will not even bother to try it.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>8. When I have something unpleasant to do, I stick to it until I finish it.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>9. When I decide to do something, I go right to work on it.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>10. When trying to learn something new, I soon give up if I am not initially successful.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>11. When unexpected problems occur, I don’t handle them well.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>12. I avoid learn new things when they look too difficult for me.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>13. Failure just makes me try harder.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>14. I feel insecure about my ability to do things.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>15. I am a self-reliant person.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>16. I give up easily</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>17. I do not seem capable of dealing with most problems that come up in life.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>
PART III. TRAINING SCENARIO

Instructions: Read the following training scenario, then respond to the questions that follow.

Your organization has announced that it plans to implement a new performance review process. As a manager, you will be expected to use the new process when you evaluate the performance of your subordinate employees.

A training program has been developed to help you understand the reason for using the new performance review process, the components of the process, and specific techniques to use when actually conducting the review.

The following describes how you will receive the training. You will be assigned to a trainer who will provide the training one-on-one. Your trainer will give you a training module which contains all the information necessary to learn about the new performance review process. The module can also serve as a reference after the training. Then, your trainer will explain how the one-on-one training will be conducted and the expected outcomes of the training.

At the beginning of the training session, the trainer will ask you to sit with him in a quiet conference room. The trainer will explain why it is important for the organization to use the new performance review process, the key concepts of the process, and the five steps of the process. Then the trainer will ask that you and he engage in several role play situations so that you can practice using the techniques associated with each step of the process. During the role plays, the trainer will act as the employee and you will act as the manager. Following each role play, the trainer will provide you with feedback on how well you used the techniques and respond to any of your questions. When you feel capable of performing the techniques associated with the process, the trainer will ask you to conduct a role play with another trainer, and then he will observe you and then complete an evaluation form that documents whether you have achieved the training objectives. The training program will require about four hours of your time.
**Instructions:** Based on the preceding training scenario, rate your confidence to achieve the following training outcomes:

<table>
<thead>
<tr>
<th>Training Outcome</th>
<th>Level of Confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Appreciate the importance of using the new performance review process</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>2. Believe that you will be effective in using the new performance review process</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>3. Believe that you will be committed to using the new performance review process</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>4. Understand the concepts associated with the new performance review process</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>5. Understand each step to implement the new performance review process</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>6. Demonstrate to others in the class that you can explain the concepts and each</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>step in your own words</td>
<td></td>
</tr>
<tr>
<td>7. Demonstrate to others in the class that you can perform the steps of the new</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>performance review process</td>
<td></td>
</tr>
<tr>
<td>8. Coach others in their ability to perform the steps of the new performance</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>review process</td>
<td></td>
</tr>
<tr>
<td>9. Provide feedback to management to improve the new performance review process</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

Thank you for taking the time to complete this questionnaire.  
Your assistance in providing this information is very much appreciated.
日期

我們正在研究個人對於不同訓練方法所產生的成效的看法。研究的結果對於人力資
源發展在理論及應用方面將有很大的貢獻。請各位花大約 20 分鐘的時間填寫下列
問卷。本問卷總共分成三個部分，第一部分是填寫您的個人資料；第二部分是回答
一些有關 “一般性自我勝任性” 的問題；而第三部分則是請您閱讀一段短文，此短
文將模擬您接受了一訓練課程，之後回答是否能完成指定的項目。

參與此研究並無任何報酬鼓勵。此外，參與此研究是屬於自願性質。您可以在沒有
任何脅迫壓力下選擇接受或拒絕參與這個研究，且不會影響損害到任何您自身的權
益。換句話說，拒絕參與本研究，除了對您不會有任何的處分外，也不會造成個人
任何權益的損害。也就是你可以隨時拒絕參與本研究而不會受到任何處分或造成個
人任何權益的損害。另外，本研究是低風險的。唯一可預見的風險是個人資料外洩，
而我們將採用各種保護措施來降低這個風險。

您的作答內容將以保密的方式處理，而研究結果則以匯總式的數據呈現。

如果問卷上及電話訪談中的問題讓你覺得不舒服或是你現在不方便回答問題，您都
可以隨時放棄參與我們的研究。假如您有任何的問題，請與 Ronald Jacobs 博士
(e-mail：Jacobs.3@osu.edu) 或黃文柔 (e-mail：huang.235@osu.edu) 聯絡。此外，假
如您想瞭解您參與本研究所應有的權利，或是想和非本研究團隊的人討論與本研究
課題相關的事宜或有任何抱怨，您可以與研究負責中心辦公室 (Office of Responsible
Research Practices, ORRP) 的 Sandra Meadows 小姐聯絡，電話是 002-1-614-688-8641。

再次非常感謝您的參與，我們非常感激您的配合及幫忙。

恭祝 萬事如意！

Wen-Rou Huang, MA, MLHR
Ph.D. Candidate
The Ohio State University
Email: huang.235@osu.edu
一．受訪者資料

指示：請回答下列有關您工作經歷的問題。

1 您在金融業服務了多久？
   □ 不滿一年：月數 ______
   □ 一至數年：年數 ______

2 您在目前的單位服務了多久？
   □ 不滿一年：月數 ______
   □ 一至數年：年數 ______

3 您在現職服務了多久？
   □ 不滿一年：月數 ______
   □ 一至數年：年數 ______

4 您的教育程度為何？
   □ 高中畢業
   □ 大學肄業
   □ 大學畢業
   □ 碩士
   □ 博士

5 過去一年您參加過多少個公司補助的訓練課程？
   □ 無
   □ 一至三個
   □ 三個以上

6 過去一年您是否曾參加由同事或主管指導的在職訓練？
   □ 是：請估算天數/時數 ______
   □ 否

7 您是否曾參加有關執行下屬員工績效評量的訓練？
   □ 是：多久之前 ______
   □ 否
第二部分. 一般性自我勝任感

指示：請回答下列有關您的一般性自我勝任感的問題。

<table>
<thead>
<tr>
<th>項目</th>
<th>非常同意</th>
<th>非常不同意</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 我能夠擬定確實可行的計畫。</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>2. 不能在必要時付諸行動，是我的缺點之一。</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>3. 工作時即使第一次失敗，我仍會繼續嘗試，直到成功為止。</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>4. 我為自己設定的重要目標，鮮少能達成。</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>5. 我常會半途而廢。</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>6. 我不喜歡面對困難。</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>7. 感覺很複雜的事物，我連試都不願試。</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>8. 遇到討厭的事，我仍會堅持完成。</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>9. 一旦決定要做，就努力做到底。</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>10. 學習新事物時若無法一舉成功，我很快就會放棄。</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>11. 我無法妥善處理突發問題。</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>12. 感覺太困難的新事物，我敬而遠之。</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>13. 我是愈挫愈勇的人。</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>14. 我對自己的能力沒什麼信心。</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>15. 我凡事都靠自己。</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>16. 我很容易放棄。</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>17. 我覺得生活中有許多問題似乎都難以處理。</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>
第三部分. 訓練情境

指示：請閱讀下列訓練情境，然後回答後續的問題。

您的公司（機構）宣布要實施新的績效評量程序。公司希望身為經理的您使用新程序評量下屬員工的績效。

公司研擬了訓練計畫，以協助您了解使用新績效評量程序的原因、程序的要素、以及實際執行評量時所需的特定技巧。

以下說明此項訓練的流程。公司會為您指定一對一授課的講師。講師會提供訓練課程計劃書，內含所有了解新績效評量程序所需的相關資訊。此課程計劃書在訓練結束後亦可作為參考之用。接著，講師會解說一對一訓練的執行方式，以及預期的訓練成果。

首先，講師會找一間安靜的會議室，然後開始對您講授訓練課程。講師會說明使用新績效評量程序對公司的重要性、此程序的主要概念，以及程序的五項步驟。接著，講師會邀您就各種情境進行角色扮演，以讓您能夠使用每個程序步驟的相關技巧進行練習。在角色扮演時，講師會扮演員工的角色，而您則是經理。每完成一項角色扮演，講師就會評估您的技巧運用是否得宜，並回答您所提出的問題。若您自認為各項程序相關技巧都已娴熟運用，講師會要求您與其他講師進行角色扮演，並從旁觀察，然後將您的訓練目標完成度記錄在評量表中。此訓練計畫約需四小時的時間。
指示：根據前述訓練情境，評估您達成下列訓練成果的信心度：

<table>
<thead>
<tr>
<th>訓練成果</th>
<th>信心度</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>高</td>
</tr>
<tr>
<td></td>
<td>低</td>
</tr>
<tr>
<td>1. 了解使用新績效評量程序的重要性</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>2. 相信您將可如預期有效使用新的績效評量程序</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>3. 相信您會確實使用新的績效評量程序</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>4. 了解新績效評量程序的相關概念</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>5. 了解新績效評量程序的每個施行步驟</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>6. 在課堂上向其他學員表明，您可以透過自己的方式解說相關概念與步驟</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>7. 在課堂上向其他學員表明，您可以執行新績效評量程序的步驟</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>8. 指導他人獨立執行新績效評量程序的步驟</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>9. 對管理部門提供意見回應，以改進新的績效評量程序</td>
<td>1  2  3  4  5  6  7</td>
</tr>
</tbody>
</table>

感謝您撥冗完成此問卷。
Appendix F

TRAINING OPTION B
Date

We are studying how individuals perceive the effectiveness of different training approaches. The results of this study will add knowledge in theoretical and practical areas of human resource development. Please complete the following questionnaire, which will take you approximately 20 minutes. The questionnaire is divided into three parts. Part I asks for some information about yourself. Part II asks you to respond concerning your general self-efficacy. Part III asks you to read a brief scenario and then respond to the extent which you might be able to achieve certain training outcomes.

Please note that there is no compensation or other incentive to participate in this research study. In addition, participation is voluntary, which means that you can choose to participate or not to participate in this study without any duress or pressure from any source. In other words, refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled, and that you may stop participation at any time without penalty or loss of benefits to which you are otherwise entitled. Furthermore, this study is of low risk. The only foreseeable risk is the breach of confidentiality, which will be minimized by protective measures.

All responses to this survey will be kept confidential. Only aggregate data will be reported in the study results.

If the questions in this study, both survey and interview, make you feel uncomfortable or the time required to answer the questions is not convenient for you, you can withdraw from the study at any time. If you have any questions, please contact Dr. Ronald Jacobs at Jacobs.3@osu.edu or WenRou Huang at huang.235@osu.edu. Also, for the questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you can contact Ms. Sandra Meadows in the Office of Responsible Research Practices (ORRP) at 002-1-614-688-8641.

Thank you very much in advance for your participation. Your cooperation is highly appreciated.

Sincerely,
Wen-Rou Huang, MA, MLHR
Ph.D. Candidate
The Ohio State University
Email: huang.235@osu.edu
I. PARTICIPANT INFORMATION

Instructions: Please respond to the following questions about your background.

1. How long have you worked in banking?
   □ Less than one year: Number of months ______
   □ One or more years: Number of years ______

2. How long have you worked for your present organization?
   □ Less than one year: Number of months ______
   □ One or over one year: Number of years ______

3. How long have you been in the present position?
   □ Less than one year: Number of months ______
   □ One or over one year: Number of years ______

4. What is your educational level?
   □ High school diploma
   □ Some University/College
   □ University/College degree
   □ Master’s degree
   □ Ph.D.

5. How many company-sponsored classroom training programs have you attended in the past year?
   □ None
   □ One to three
   □ More than three

6. Have you received on-the-job training from a peer or supervisor in the past year?
   □ Yes: Estimate the number of days/hours ______
   □ No

7. Have you ever attended training on conducting performance reviews for subordinate employees?
   □ Yes: How long ago ______
   □ No
### PART II. GENERAL SELF-EFFICACY

**Instructions:** Please respond to the following questions regarding your general self-efficacy.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Strongly Agree</th>
<th></th>
<th>Strongly Disagree</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>When I make plans, I am certain I can make them work.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>One of my problems is that I cannot get down to work when I should.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>If I cannot do a job the first time, I keep trying until I can.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>When I set important goals for myself, I rarely achieve them.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>I give up on things before completing them.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>I avoid facing difficulties.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>If something looks too complicated, I will not even bother to try it.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>When I have something unpleasant to do, I stick to it until I finish it.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>When I decide to do something, I go right to work on it.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>When trying to learn something new, I soon give up if I am not initially successful.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>When unexpected problems occur, I don’t handle them well.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>I avoid learn new things when they look too difficult for me.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Failure just makes me try harder.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>I feel insecure about my ability to do things.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>I am a self-reliant person.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>I give up easily</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>I do not seem capable of dealing with most problems that come up in life.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PART III. TRAINING SCENARIO

Instructions: Read the following training scenario, then respond to the questions that follow.

Your organization has announced that it plans to implement a new performance review process. As a manager, you will be expected to use the new process when you evaluate the performance of your subordinate employees.

A training program has been developed to help you understand the reason for using the new performance review process, the components of the process, and specific techniques to use when actually conducting the review.

The following describes how you will receive the training. You will be assigned to a training session along with 20 other managers. The trainer introduces himself and gives each of you a training manual which summarizes the presentation notes and the concluding activity. The training manual can also be used for reference after the training. Then the trainer will explain the schedule for the training session.

At the beginning of the training session, the trainer introduces the topic of the training session. The trainer will explain why it is important for the organization to use the new performance review process, the key concepts of the process, and the five steps of the process. Then the trainer will introduce the practice component of the training session. Trainees will be asked to work with a peer trainee and each trainee will be expected to demonstrate how to use the techniques associated with each step of the process. The trainer will observe each pair of trainees as they practice with each other. Following the practice sessions, the trainer will ask two to three trainees if they would conduct a role play with him in front of the other trainees. Following the role plays, the trainer will facilitate a discussion about using the performance review process. Finally, the trainer will ask if trainees feel capable using the process back on the job. Each trainee will receive a certificate that you have achieved the training objectives. The training program will require about eight hours of your time.
**Instructions:** Based on the preceding training scenario, rate your confidence to achieve the following training outcomes:

<table>
<thead>
<tr>
<th>Training Outcome</th>
<th>Level of Confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.</strong> Appreciate the importance of using the new performance review process</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td><strong>2.</strong> Believe that you will be effective in using the new performance review process</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td><strong>3.</strong> Believe that you will be committed to using the new performance review process</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td><strong>4.</strong> Understand the concepts associated with the new performance review process</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td><strong>5.</strong> Understand each step to implement the new performance review process</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td><strong>6.</strong> Demonstrate to others in the class that you can explain the concepts and each step in your own words</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td><strong>7.</strong> Demonstrate to others in the class that you can perform the steps of the new performance review process</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td><strong>8.</strong> Coach others in their ability to perform the steps of the new performance review process</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td><strong>9.</strong> Provide feedback to management to improve the new performance review process</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

Thank you for taking the time to complete this questionnaire. Your assistance in providing this information is very much appreciated.
Appendix G

TRAINING OPTION B: CHINESE VERSION
我們正在研究個人對於不同訓練方法所產生的成效的看法。研究的結果對於人力資源發展在理論及應用方面將有很大的貢獻。請各位花大約 20 分鐘的時間填寫下列問卷。本問卷總共分成三個部分，第一部分是填寫您的個人資料；第二部分是回答一些有關“一般性自我勝任感”的問題；而第三部分則是請您閱讀一段短文，此短文將模擬您接受了一訓練課程，之後回答是否能完成指定的項目。

參與此研究並無任何報酬鼓勵，此外，參與此研究是屬於自願性質。您可以在沒有任何曾迫壓力下選擇接受或拒絕參與這個研究，且不會影響損害到任何您自身的權益。換句話說，拒絕參與本研究，除了對您不會有任何的處分外，也不會造成個人任何權益的損害。也就是你可以隨時拒絕參與本研究而不會受到任何處分或造成個人任何權益的损害。另外，本研究是低風險的。惟一可預見的風險是個人資料外洩，而我們將採用各種保護措施來降低這個風險。

您的作答內容將以保密的方式處理，而研究結果則以匯總式的數據呈現。

如果問卷上及電話訪談中的問題讓你覺得不舒服或是你現在不方便回答問題，都可以隨時放棄參與我們的研究。假如您有任何的問題，請與 Ronald Jacobs 博士 (e-mail：Jacobs.3@osu.edu) 或本人黃文柔 (e-mail：huang.235@osu.edu) 聯絡。此外，假如您想瞭解您參與本研究所應有的權利，或是想和非本研究團隊的人討論與本研究課題相關的事宜或有任何抱怨，您可以與研究負責中心辦公室(Office of Responsible Research Practices, ORRP)的 Sandra Meadows 小姐聯絡，電話是 002-1-614-688-8641。

再次非常感謝您的參與，我們非常感激您的配合及幫忙。

恭祝 萬事如意！

Wen-Rou Huang, MA, MLHR
Ph.D. Candidate
The Ohio State University
Email: huang.235@osu.edu

Workforce Development & Education
School of Physical Activity and Educational Services
一. 受訪者資料

指示：請回答下列有關您工作經歷的問題。

1 您在金融業服務了多久？
   □ 不滿一年：月數 ________
   □ 一至數年：年數 ________

2 您在目前的單位服務了多久？
   □ 不滿一年：月數 ________
   □ 一至數年：年數 ________

3 您在現職服務了多久？
   □ 不滿一年：月數 ________
   □ 一至數年：年數 ________

4 您的教育程度為何？
   □ 高中畢業
   □ 大學肄業
   □ 大學畢業
   □ 碩士
   □ 博士

5 過去一年您參加過多少個公司補助的訓練課程？
   □ 無
   □ 一至三個
   □ 三個以上

6 過去一年您是否曾參加由同事或主管指導的在職訓練？
   □ 是：請估算天數/時數 ______
   □ 否

7 您是否曾參加有關執行下屬員工績效評量的訓練？
   □ 是：多久之前 ______
   □ 否
第二部分．一般性自我勝任感

指示：請回答下列有關您的一般性自我勝任感的問題。

<table>
<thead>
<tr>
<th>質問</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 我能夠擬定確實可行的計畫。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2. 不能在必要時付諸行動，是我的缺點之一。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>3. 工作時即使第一次失敗，我仍會繼續嘗試，直到成功為止。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>4. 我為自己設定的重要目標，鮮少能達成。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>5. 我常會半途而廢。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>6. 我不喜歡面對困難。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>7. 感覺很複雜的事物，我連試都懶得試。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>8. 遇到討厭的事，我仍會堅持完成。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>9. 一旦決定要做，就努力做到底。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>10. 學習新事物時若無法一舉成功，我很快就會放棄。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>11. 我無法妥善處理突發問題。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>12. 感覺太困難的新事物，我敬而遠之。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>13. 我是愈挫愈勇的人。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>14. 我對自己的能力沒什麼信心。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>15. 我凡事都靠自己。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>16. 我很容易放棄。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>17. 我覺得生活中有許多問題似乎都難以處理。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>
第三部分. 訓練情境

指示：請閱讀下列訓練情境，然後回答後續的問題。

您的公司（機構）宣布要實施新的績效評量程序。公司希望身為經理的您使用新程序評量下屬員工的績效。

公司研擬了訓練計畫，以協助您了解使用新績效評量程序的原因、程序的要素，以及實際執行評量時所需的特定技巧。

以下說明此項訓練的流程。您將與 20 位經理分派在同一個訓練課程中。講師會進行自我介紹，並分發附有授課要點與總結活動摘要的訓練手冊。訓練手冊在訓練結束後亦可作爲參考之用。接著，講師會說明訓練課程表。

訓練課程開始時，講師會先介紹訓練課程的主題。講師會說明使用新績效評量程序對公司的重要性、此程序的主要概念，以及程序的五項步驟。接著，講師會介紹訓練課程的練習活動。課程中會要求學員彼此合作，以展現如何使用每個程序步驟的相關技巧。講師會在每一組學員練習時從旁觀察。練習結束後，講師會徵求二到三名志願者與其進行角色扮演，供其他學員觀摩。角色扮演結束後，講師會就績效評量程序的使用情形進行討論。最後，講師會詢問學員是否有信心將此程序運用在實務上。每位達到訓練目標的學員，都將獲得認證。此訓練計畫約需八小時的時間。
指示：根據前述訓練情境，評估您達成下列訓練成果的信心度：

<table>
<thead>
<tr>
<th>訓練成果</th>
<th>高</th>
<th>低</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 了解使用新績效評量程序的重要性</td>
<td>1 2</td>
<td></td>
</tr>
<tr>
<td>2. 相信您將可如預期有效使用新的績效評量程序</td>
<td>1 2</td>
<td></td>
</tr>
<tr>
<td>3. 相信您會確實使用新的績效評量程序</td>
<td>1 2</td>
<td></td>
</tr>
<tr>
<td>4. 了解新績效評量程序的相關概念</td>
<td>1 2</td>
<td></td>
</tr>
<tr>
<td>5. 了解新績效評量程序的每個施行步驟</td>
<td>1 2</td>
<td></td>
</tr>
<tr>
<td>6. 在課堂上向其他學員表明，您可以透過自己的方式解說相關概念與步驟</td>
<td>1 2</td>
<td></td>
</tr>
<tr>
<td>7. 在課堂上向其他學員表明，您可以執行新績效評量程序的步驟</td>
<td>1 2</td>
<td></td>
</tr>
<tr>
<td>8. 指導他人獨立執行新績效評量程序的步驟</td>
<td>1 2</td>
<td></td>
</tr>
<tr>
<td>9. 對管理部門提供意見回應，以改進新的績效評量程序</td>
<td>1 2</td>
<td></td>
</tr>
</tbody>
</table>

感謝您撥冗完成此問卷。
Appendix H

INTERVIEW CONTACT INFORMATION/AVAILABLE TIME FORM
INTERVIEW CONTACT INFORMATION/AVAILABLE TIME FORM

DO YOU AGREE TO PARTICIPATE IN THE INTERVIEW ACTIVITY?

☐ YES: if yes, please provide your contact information/time available below
☐ NO

NAME: __________________________________________________________

CONTACT INFORMATION: ______________________________________

APPROPRIATE TIME TO CONTACT: ______________________________

If you have any questions, please contact WenRou Huang through e-mail, huang.235@osu.edu, or Dr. Jacobs Ronald, The Ohio State University (email: Jacobs.3@osu.edu, phone: 002-1-614-292-0581). Also, for the questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you can contact Ms. Sandra Meadows in the Office of Responsible Research Practices (ORRP) at 002-1-614-688-8641.

Thank you for your participation in advance. Your assistance in providing the information is very much appreciated.
Appendix I

INTERVIEW CONTACT INFORMATION/AVAILABLE TIME FORM:
CHINESE VERSION
### 電話訪談聯絡資料/訪談時間表

請問您同意參加我們的電訪訪談嗎？

- [ ] 是：如果您願意參加，請在下方提供您的聯絡資料/訪談時間
- [ ] 否

姓名： ____________________________

聯絡方式： ____________________________

訪談時間： ____________________________

假如您有任何問題，請您以 e-mail 與我本人黃文柔 (e-mail：huang.235@osu.edu) 聯絡，或與俄亥俄州立大學的 Ronald Jacobs 博士聯繫 (e-mail：Jacobs.3@osu.edu，聯絡電話：002-1-614-292-0581)。此外，假如您想瞭解您參與本研究所應有的權利，或是想和非本研究團隊的人討論與本研究課題相關的問題或有任何抱怨，您可以與研究負責中心辦公室 (Office of Responsible Research Practices, ORRP) 的 Sandra Meadows 小姐聯絡，電話是 002-1-614-688-8641。

再次感謝您的參與，我們非常感激您對本研究的協助。
Appendix J

INTERVIEW PROTOCOL
Interview Protocol

Hi, is this [Name of potential respondent]? 

This is WenRou Huang, Ph.D. candidate in Workforce Development and Education at the Ohio State University. Thank you very much for completing our research questionnaire a few days ago and for participating in this interview activity. If it is convenient for you, this follow-up interview will take approximately 20 minutes.

Question: Is this a good time for you to answer the questions?

If yes, a good time to do interview

Thank you. Before starting the interview, I want to ensure you that the entire conversation and your personal contact information will be kept confidential. In addition, you have the option to end the call at any time.

Let’s begin with the first question.

If no, not a good time to do interview

That’s ok. Could you tell me when you might be available for the interview?

Fine, I will call you back on [Date and time to call back ________________________]

Thank you very much. I appreciate your time and will talk to you on (repeat date and time of call back).

Good-bye.

End of call
Structured Phone Interview Questions

1. Do you think the description of the training process in the training scenario was clear? If not, why?

2. Do you think the description of the training scenario provided you with an experience comparable to a real training activity? If not, what are the differences?

3. Did the description of the training process in the scenario provide you a clear idea regarding how the training would be conducted?

4. Which part of the training activity in the training scenario helped you generate higher self-efficacy to achieve training outcomes?
   i. Was the characteristics of the trainer an important factor influencing your self-efficacy to achieve training outcomes? why?
   ii. Was the quality of the module an important factor influencing your self-efficacy to achieve training outcomes? why?
   iii. Was the training location an important factor influencing your self-efficacy to achieve training outcomes? why?
   iv. Was the duration of the training program an important factor influencing your self-efficacy to achieve training outcomes? why?
   v. Was the feedback from the trainer an important factor influencing your self-efficacy to achieve training outcomes? why?
   vi. Was the practice an important factor influencing your self-efficacy to achieve training outcomes? why?
Appendix K

INTERVIEW PROTOCOL: CHINESE VERSION
訪談流程

您好，請問您是[姓名]嗎？

我是黃文柔，俄亥俄州立大學人力資源發展教育所的博士候選人，非常感謝您幾天前填寫問卷並答應接受我們的電話訪談。如果您現在方便的話，我們將進行電話訪談，時間大約為20分鐘左右。

問題：請問您現在方便回答我們的問題嗎？

假如是，繼續訪問
謝謝您！在開始訪談前，我想先向您保證所有的對話內容以及您的個人資料將不會外洩，除此之外，您可以隨時結束此電話訪談。
以下開始我們的訪談。

假如不方便訪問
沒關係，請問何時方便再跟您聯絡呢？
OK，我會在[幾個月幾號幾點/時間]再跟您電話聯絡

非常感謝您！謝謝您的寶貴時間，我將會在(重複上述日期時間)再次與您電話聯絡。

再見

電話結束
建構式面談問題

1. 您認為在訓練情境中描述的培訓過程是清楚的嗎？如果您不認同，請問為什麼？

2. 您認為訓練情境的描述是否與提供給您類似於真正的訓練活動的一次經驗？ 如果您不認同，請問差別在哪裡？

3. 訓練情境中的培訓過程的描述是否給您一個清楚的概念了解訓練的執行方式？

4. 在訓練情境裡，訓練活動中的哪個部分會幫助您產生更高的自我勝任感來達到訓練成果？
   i. 會影響您的自我勝任感達到訓練成果的因素中，講師的個人特質是一個重要的因素嗎？ 爲什麼？
   i. 會影響您的自我勝任感達到訓練成果的因素中，訓練課程的品質是一個重要的因素嗎？ 爲什麼？
   ii. 會影響您的自我勝任感達到訓練成果的因素中，訓練地點是一個重要的因素嗎？ 爲什麼？
   iv. 會影響您的自我勝任感達到訓練成果的因素中，訓練計畫的持續性是一個重要的因素嗎？ 爲什麼？
   v. 會影響您的自我勝任感達到訓練成果的因素中，講師的講評是一個重要的因素嗎？ 爲什麼？
   vi. 會影響您的自我勝任感達到訓練成果的因素中，實際練習是一個重要的因素嗎？ 爲什麼？