“To be what we are, and to become what we are capable of becoming, is the only end in life”

—Robert Louis Stevenson (June 1880)

Life skills
A skill is a learned ability to do something well. Life skills are the abilities that individuals learn to help them to be successful in leading a productive and satisfying life. Life skills can help you cope with the world around you.

Training
Training is widely understood as communication that is directed at a defined population for the purpose of developing skills, modifying behavior, and improving competence. Broadly, training focuses exclusively on what needs to be known.

In contrast to informal training (which is ingrained in most instances of human exchange), formal training interventions have stated aims, content, and strategies for instruction. Organizations in both the private and public sectors, regardless of types or nature of organization, agree that training and development is crucial to the progress and development of the business (Noe, 2002).
Human resource management (HRM) literature (Beardwell & Holden, 2003; Cascio, 1998; Cherrington, 1995; Dessler, 2005; Ivancevich, 2003; Mondy & Noe, 2005; Noe, Hollenbeck, Gerhardt & Wright, 2006; Torrington & Hall, 2000; Yong, 2003), viewed training and development as an important activity that contributes to an organization’s overall effectiveness in human resources management and that it is required to build and sustain an organization’s competitive advantage via abilities and knowledge enhancement.

Cheng and Ho (2001) however, stated that training and development is a costly investment. One of the often cited reasons for considering training and development as an unnecessary and expensive cost is that most of the organizations are unsure of the contributions of training and development towards the organization’s overall performance due to lack of assessment (Bramley & Kitson, 1994).

Although training evaluation models are plenty (Cohen, 2005; Hamblin, 1974; Holton III, 2005; Kirkpatrick, 1998; McCarthy & Garavan, 2001; Warr, Bird, & Rackham, 1970), organizations are not adept at using the models to evaluate training and development programs as training evaluation generally involves both objective and subjective measures. Furthermore, most organizations are uncertain as to how training evaluation
could provide sufficient information to attribute the training to consequent transfer of training back at the workplace (Cheng & Ho, 2001). Therefore, it is important to establish the link between training, training evaluation and training effectiveness.

**Importance of Training Evaluation**

According to Rae (1991), though many organizations are concerned with the contribution of training to organizational performance, the feasibility of such corroboration and evaluation was not always ascertained. One of the reasons provided by Huang (2001) is that training evaluation often focused only on the quantity of training provided and not quality.

It has been found that in many areas of training and development, evaluation is difficult, especially management level training or human relations training, as the outcomes are not quantitatively defined (Rae, 1991).

Mulder (2001) concurred that at times, the standards for the required level of quality are not sufficiently defined – other than using superficial scales in an attempt at quantification – which then raises the question of legitimacy and reliability of the training evaluation measures. Torrington and Hall (2000) thus stated that though training evaluation tended to be
nebulous and unsatisfactory, there is still a need for organizations to demonstrate that the training conducted was of value to the organization.

However, Phillips (1991) discovered that a majority of Human Resource Development (HRD) specialists are still reluctant to evaluate the effectiveness of training programs conducted. One of the reasons is that organizations were not able to find a tool for measurement that is both penurious and results-oriented (Huang, 2001).

Huang (2001) thus suggested that perhaps there may not be a strong link between training evaluation and training effectiveness though companies that evaluate training programs are more likely to find a higher degree of effectiveness from the trainings provided by virtue of the fact that there was assessment. The above statement though seems contradictory in nature, has highlighted the challenges and dilemma faced by organizations in the evaluation of training effectiveness.

**Training Effectiveness**

Conducting a lot of training does not mean that the training programs were effective if there were no improvements in productivity. To ascertain the effectiveness of training, a training evaluation is required (Bramley & Kitson, 1994; Cheng
and Ho, 2001; Rae, 1991; Tennant, Boonkrong, & Roberts, 2002). From the results of the training evaluation, the organization will then be able to ascertain more precisely whether the training conducted had been effective. This is because training evaluations are conducted using measurable criteria (Grensing-Pophal, 2004). Unfortunately, most organizations do not conduct comprehensive training evaluations.

According to Bedinham (1998b), even though most managers are comfortable with the evaluation of technical training beyond the initial end of course level, these managers will not be comfortable at the thought of evaluating the effectiveness of non-technical training, such as interpersonal or conceptual skills as these skills are deemed to be non-quantifiable. Broad and Newstrom (2001) however, stated that for training to be effective, the skills and knowledge learnt during training must be transferred to the job.

Salas, Burke, Bowers and Wilson (2001) thus asserted that training evaluation helps to determine whether the training has been effectively transferred on the job. This was emphasized by Grensing-Pophal (2004) that it is important to assess training effectiveness and that training effectiveness should be tied in with actual work performance. However, in order to stimulate and encourage the application of learned skills, incentives must
be available to encourage these trainees to adopt the newly learned skills, knowledge and attitude (Dessler, 2005). Furthermore, the organization climate must be supportive and conducive to the eventual transfer of knowledge and skills obtained (Tracey & Tews, 2005).

**Factors Affecting Training Effectiveness**

Tennant et al. (2002) found that immediate superior support were strongly linked with training effectiveness, thereby indicating that the immediate superiors have important roles to play in determining whether training programs are effective. Chella (2006) further affirmed that immediate superior’s feedback and support would help the participant to harness and apply the skills learnt. In the Malaysian context, correlation studies on training effectiveness have found that a lack of immediate superior support have hampered an organization’s training effectiveness (David, 1997; Karuppaiya, 1996; Pau, 2001; Tee, 2005).

However, to further explicate the effectiveness of training, it is critical to identify and measure the impacts of individual as well as organizational factors that affect training outcomes including learning and training transfer (Baldwin & Ford, 1988; Mathieu, Martineau, & Tannenbaum, 1993; Tannenbaum & Yukl, 1992).
Bandura (2000) stated that self-efficacy will lead the trainees to believe that they are better able to perform the tasks after training but there was no mention of the effect of self-efficacy on pre-training temperament to earn. Yi and Davis (2003) on the other hand, in a study on training interventions had actually controlled for learning motivation and pre-training self-efficiency, thereby allowing them to focus on post-training self-efficacy.

Thus, there are essentially two forms of self-efficacy, which are, pre-training self-efficacy and post-training self-efficacy.

Guthrie and Schwoerer (1994) however, stated that self-efficacy on its own does not directly affect training effectiveness, but when self-efficacy was measured together with perceived better support and perceived training utility, it will have an impact on training effectiveness.

Consequently, it could be deduced from the above that individual characteristics of self-efficacy together with organizational climate of support that include immediate superior backing, will have an impact on training effectiveness.

Apart from the above, Honey and Mumford (1992) found that an individual’s learning style needs to be in line with the training delivery methodologies in order for training to be effective. Unfortunately, Tennant et al. (2002) found that most
organizations do not take into consideration the trainee’s learning styles or preferences that might affect overall training effectiveness.

Additionally, Arthur, Bennett, Edens, and Bell (2003) in a metaanalysis on training effectiveness found that training methodologies adopted, types of skills trained and the choice of evaluation criteria were significantly related to the effectiveness of training programs. Burke and Day (1986) had also highlighted the three key areas coupled with Kirkpatrick’s (1998) 4-levels of training evaluation as factors that correlate with training effectiveness.

Other trainees’ characteristics such as age, gender, work experience and educational background were explored by various authors (Cheng & Ho, 2001; Robertson, Kulik, & Pepper, 2001; Van Der Klink & Streumer, 2002) to determine whether these characteristics affect overall training effectiveness and transfer of training (David, 1997; Karuppaiya, 1996; Lefkowitz, 1994; Luwe, 2003; Pau, 2001), but had been found to produce mixed results.

**The Concept of Conceptual Skills**

Conceptual skill is defined by Katz (1974) as a skill that requires more thinking and conceptualizing as compared to technical, hands-on skills. Yuk (2002) viewed conceptual skills as skills
that focused on ideas and concepts and are considered to be mental capabilities that allow managers to view the organization as part of a larger supra-system.

Although the definition of analytical skills provided by Al-Madhoun and Analoui (2003) had similarities with Katz (1974), for the purpose of the research, the definition provided by Katz (1974) is used as the conceptual skill training conducted as the training intervention relates to thinking and conceptualizing.

Furthermore, according to Peterson and Van Fleet (2004), Katz’s (1974) work was still very much the basis for other researches on managerial skills including Analoui (1996) and all the author’s subsequent researches. Katz (1974) had also found that for managers to be effective, three key skills were required, which are (1) technical skills; (b) interpersonal skills; and (c) conceptual skills. On the other hand, Analoui and Hosseini (2001) opined that tasks, people, self-related and analytical skills were required to be integrated in order to contribute to managerial effectiveness. Analytical skills were linked to the skill set that required thinking and reflection (Al-Madhoun & Analoui, 2003). Hence, Katz (1974) definition of conceptual skill is preferred as it is the foundation for all subsequent researches on conceptual related skills.
Approaches to Effectiveness Research

Two approaches to training intervention effectiveness research can be used to uncover results without committing extraordinary resources. One approach engages triangulation (use of multiple data sources and methods) to gather data from prospective end users and combine qualitative data (e.g., from focus groups, interviews, and observations) with various forms of quantitative data (e.g., those from controlled study situations) [Crabtree and Miller 1992]. Data is then used to assemble a valid argument for the interpretation of results. The other approach to effectiveness research explores cause-and-effect relationships that are pertinent to the learning process and have been established through years of training research, including meta-analyses [Borich 1998]. For the purpose of training assessment, the cause-and-effect relationships of interest are those between the process, outcomes, and impacts of training.

In these relationships, the process variables (e.g., training methods and mediums used) are indicators of the results (e.g., knowledge gained among trainees). The key to pinpointing the essential elements of effective training lies in understanding the correlation of these variables with the intended impact of training [Cohen and Colligan 1998].
The TIER Model

The TIER model is designed to (1) take into account the challenges of identifying factors that make the training-learning-action continuum successful, (2) logically match research efforts with the essence of the question(s) at hand, (3) minimize training and curriculum development liabilities, and (4) concentrate research resources. The TIER model is applicable to training interventions on a variety of topics.

Four Stages of the TIER Model

The TIER model systematically structures training effectiveness research across four stages.

Stages 1 and 2 are components of formative evaluation in which the intentions and processes of training are conceptualized, drafted, and polished.

During these stages, researchers explore instructional alternatives to determine which are most appropriate for study.

Stages 3 and 4 are components of summative evaluation—a systematic attempt to determine whether the fully developed training intervention is meeting its objectives as planned or desired [Scriven 1967, 1991].
The four stages of the TIER model are explained in detail as follows:

Stage 1: Formative Research

In Stage 1, training efforts are conceived, reviewed, and structured. Typically, this stage involves the following research questions:

- What are the needs and how are they determined?
What are the target populations catered to by the training?
How do the goals and objectives of the training relate to identified needs?
How will the attainment of these goals be evaluated?
What instructional approach should be taken?

Stage 1 helps researchers understand the population to be served, its needs, and the goals of instruction. Also in this stage, assessment instruments and training materials are drafted. During formative research, TIER model users collaborate with (1) end users to ascertain preferred communication channels, learning styles, and instructional channels; (2) content experts to provide technical and procedural reviews; and (3) training professionals to perform pedagogic and instructional reviews.

Stage 2: Process Research
In Stage 2, draft training materials, proposed instructional approaches, and research instruments are field tested in pilot sites. Several research questions are typical for this stage.

What modifications are required?
Are the materials educationally and pedagogically sound?
Are the evaluation instruments valid?
Is there enough confidence in the approach to sanction higher-cost enhancements (e.g., video, multimedia) and wider distribution of materials?
The qualitative and quantitative information that is collected from the field testing leads to the alteration of materials and increased confidence in the approaches taken. Two field tests are desirable for refining the curriculum materials, delivery instruments, and assessment instruments before a large-scale, contained evaluation study begins. Feedback from the first field test is used to amend pilot materials for a second study. Information gained from the second test is used to finalize the materials for controlled intervention studies in the next stage of the TIER model. To reduce development costs, complex curricular improvements (such as video) are not prepared until the second study.

Stage 3: Outcome Research

Stage 3 involves a controlled evaluation study. This stage is primarily concerned with the following research questions:

- Does the approach produce intended results such as increased knowledge, appropriately shaped attitudes, and positive behavioral intent?
- Are targeted behaviors changed?
- What are the critical elements of the instructional approach that contribute to desired results?

At the conclusion of this stage, the results of the training effort are documented. These data provide the researcher with
improved appreciation of the various training approaches that can be applied to (1) the people trained, (2) the subject matter addressed, and (3) the instructional methods used.

At this time, hypotheses are formulated about critical elements to be explored through future research. Expanded research may entail (1) modifications to the present study, (2) replication of the Stage 3 study using a different participant population or topic, and (3) assessment of the longitudinal development of initial outcomes.

Stage 4: Impact Assessment

In Stage 4, longitudinal studies are conducted. This final stage emphasizes these research questions:

- Do the approaches under study meet the educational needs identified in Stage 1?
- What are the intended and unintended effects of the training on the learner and his or her environment?
- What are the direct impact on the learner?
- What are the indirect effects on others whom the trainee influences?
- Why are the approaches studied effective or not?

Stage 4 will also examine the impact of study-related materials (e.g., model curricula, published reports) as they are applied to practice. The products of Stage 4 research are similar to those of
Stage 3 except that the focus is on longer-term impacts rather than immediate results.

A research project can consistently work through all stages of the TIER model. Alternatively, research can begin or occur at any stage or subset of stages of the model, depending on the state of the training materials and the nature of the research questions [Loos 1995].

Use of the TIER model will refine and focus the efforts of training evaluation studies. The model will also provide researchers with practical knowledge of training research design and consistency, and with a reliable reference point for launching other investigations.