# Analysis on Literature Review of Competency

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**Abstract**

Currently, human resources management has been viewed as a key strategy to low the cost of human capital and improve an organization's economic growth. The term of "competency" plays the important role in improving job performance and in turn qualifies human resources. Especially, under the climate of globalization, the workplace requires business practitioners to acquire a new set of knowledge, skills, and attitudes to face the diversity and complication of the new business environment successfully. The main purpose of this study was to analyze a review of the literature concerning the development, models, categorization, paradigm shift. Especially, the study collected Taiwanese research patterns of competency. Moreover, the system of Taiwan TrainQuali System(TTQS) was presented as a successful example in application of competency.

**Key Words: Human resource, Competency, Literature Review, TTQS**

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# 職能發展之文獻與分析

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**中文摘要**

近幾十年來，“人”的因素經常是組織成功的重要因素之一；人力資源管理更經常被視為降低人力資本支出，間接促進經濟成長的重要動力。「職能」一辭更在增進組織員工工作績效及優化組織人力資源上扮演重要角色，特別在現今全球化的氛圍之下，職場需要期參與者具備一套持續更新的知識、技能與工作態度，以因應快速變化的商業環境。本研究的主要目的在於回顧職能觀念在學術上的發展及在實務上的應用，並整理分析職能相關的分類模型及現今在職能應用上的典範移轉。另外，以職能的角度觀察職能的發展以及台灣勞委會職訓局推行「台灣訓練品職體系」(TTQS)的設計與成效。

**關鍵字: 人力資源管理、職能、文獻回顧、TTQS**

## Introduction

Today, international business has become a highly competitive environment as it continues to move toward globalization. As comparative advantage theory argue that competitive strength is driven by the ability to maximize profit at a lower cost. Since there is much uncertainty over comparative advantages in today's world economy (Kogut, 1999), human resources management has been viewed as a key strategy to low the cost of human capital and improve an organization's economic growth (Ibrahimkhan, 2006). Current trends in human resource management place emphasis on the development and application of the term competency, particularly the important role it plays in improving job performance, which in turn achieves heightened organizational competitiveness (Velde, 2001; Cardy & Selvarajan, 2006). Facing new challenges, it is necessary to reevaluate what set of knowledge, skills, and attitudes that a professional needs in order to succeed in the rapidly changing global economy. Increasing the competitiveness of an enterprise's workforce represents increasing its opportunities to be successful. This study presents a literature review on job competency in business settings to consider relevant definitions categorization, and models of competency. Attention is also given to the paradigm shift and application in Taiwan of competency.

## Definition of Competency

Early in the 1970s, David McClelland (1973), a professor of Harvard University, proposed the idea of competency as a term used to challenge traditional criteria of assessment which had emphasized intelligence evaluation in the higher education system. His theme provided a conceptual framework that led to many subsequent studies in other fields such as teacher education, vocational education, business management, and human resource management (Spencer & Spencer, 1993). To better understand international trade competencies, this section began by defining and grouping competency, followed by introducing the competency models, then discussing competency in Taiwan and the paradigm shift on competency.

A competency was defined in the literature from various perspectives. The American Heritage Dictionary of English language (2000) provided a general description as "the state or quality of being properly or well qualified" (p. 376). Numerous scholars have attempted to pin down a definition for competency. Quinn,

Faerman, Thompson, and McGrath (1990) indicated that competencies were associated with knowledge and skills for implementing certain assignments or projects effectively. To be effective in a particular competency, one must be able to accomplish the desired results of a job with specific qualifications and personal attributes. Burgoyue (1993) employed a functional perspective to define a competency as how the goals of organizations were best achieved by improving members' performance.

Human resource specialists viewed a set of competencies as a tool to serve as a common language throughout the entire organization to consistently plan personnel, conduct performance reviews, and determine the training program (Kravetz, 2008). Boyatzis (1982) and Klemp (1980) agreed that a person would have effective and/or superior performance in a job if he or she exhibited underlying characteristics conducive to that particular job. Spencer and Spencer (1993) similarly defined competency as "an underlying characteristic of an individual that is causally related to criterion-referenced effective and/or superior performance in a job or situation" (p. 9). They elaborated on their definition, explaining that Underlying characteristics meant "the competency is a fairly deep and enduring part of a person's personality . . . causes or predicts behavior and performance" (p. 9) and criterion-referenced meant "the competency actually predicts who does something well or poorly, as measured on a specific criterion or standard" (p. 9). Furthermore, Spencer and Spencer (1993) applied the idea of competency to develop the Job Competence Assessment Method (JCAM), which encouraged an organization to change its focus from using traditional job descriptions to establishing a competency model by analyzing the key characteristics of people with average to superior job performance. Cardy and Selvarajan (2006) concluded previous researchers' thought as competencies was the characteristics which could significantly differ high-qualified employees from others who showed inferior performance.

Hoffmann (1999) analyzed past literature and summarized three key points in defining a competency: (a) underlying qualification and attributes of a person, (b) observable behaviors, and (c) standard of individual performance outcomes. The most general and detailed definition was proposed by Parry. Parry's definition has been accepted by numerous scholars (Lucia & Lepsinger, 1999):

**A competency is a cluster of related knowledge, skills, and attitudes that affects a major part of one's job (a role or responsibility), that correlates with performance on the job, that can be measure against well-accepted standards, and**

**that can be improved via training and development (as cited by Lucia & Lepsinger, 1999, p. 5).**

Compared to job descriptions that only list responsibilities or expected results of a *job*, competencies are viewed more broadly and included many factors that influenced job success but are not included in the job description. For example, optimism and pessimism are considered attitudinal terms and are not listed in job descriptions (Hayward, 2002). Similarly, personal traits are also different from competencies. People bring their underlying physical and mental traits into the workplace. These traits include qualities such as diligence, which is considered more inherent or learned early in life (Nahavandi, 2006) and not at work.

Likewise, there is a distinction between competencies and knowledge, skills, and abilities (KSAs). Knowledge refers to a body of information about the theoretical and practical understanding of a subject, acquired by a person through experience or education. Skills refer to the application of data or information with manual, verbal, or mental proficiency. Skills can be tested to measure quantity and quality of performance, usually within an established time limit. Examples of skills include typing and computation using decimals (Kravetz, 2008). Ability means the sufficiency of strength to accomplish something, especially the physical and mental quality to perform activities. Examples include planning and implementation. KSAs are fundamental aspects of competencies, but competencies are more behavior-based rather than skill-based. In brief, each competency requires several KSAs. While KSAs may underlie competencies just as personal traits may underlie competencies, the KSAs are not the exact competencies. That is to say, having the KSAs does not automatically mean that one has a certain competency (Kravetz, 2008): one may know how to do a certain task without being able to complete the task proficiently.

Wood and Payne (1998) proposed 12 items as basic criteria for competency-based recruitment and selection: communication, flexibility, achievement orientation, developing others, customer orientation, problem solving, teamwork, analytical thinking, leadership, relationship building, planning skills and organizational skills. In 2001, the European Union identified eight key competencies as the development of indicators which can be used to monitor and evaluate education and training progress across the European Union (as cited by Tu, 2006): (a) native language proficiency; (b) foreign

language proficiency; (c) ability to apply basic math and science; (d) ability to learn by digital function; (e) abilities to learn skills such as time-management, problem-solving, information seeking and applying; (f) social commitment; (g) entrepreneurship such as creativity, planning, achievement motivation; and (h) ability to appreciate culture such as art, music and literature.

A similar set of guidelines was proposed by both the Department of Education Science and Training and the Australian National Training Authority in 2002. The framework was based on the results of the research project conducted in 2001, covering the practice of small, medium and large-sized enterprises' requirements for employability skills. The results were formed as the "Employability Skills Framework" in the 2002 Australia White Paper. The framework contained eight primary skills that work together with the personal attributes, such as: "loyalty, commitment, honesty and integrity, enthusiasm, reliability, personal presentation, commonsense, positive self-esteem, sense of humor, balanced attitude to work and home life, ability to deal with pressure, motivation, and adaptability" (Curtis & McKenzie, 2002, p. 6-7). Curtis and McKenzie (2002) defined the eight employability skills as follows:

1. *Communication skill*s that contribute to productive and harmonious relations between employees and customers;
2. *Teamwork skills* that contribute to productive working relationships and outcomes;
3. *Problem solving skills* that contribute to productive outcomes;
4. *Initiative and enterprise* skills that contribute to innovative outcomes;
5. *Planning and organizing skills* that contribute to long-term and short-term strategic planning;
6. *Self-management skills* that contribute to employee satisfaction and growth;
7. *Learning skills* that contribute to ongoing improvement and expansion in employee and company operations and outcomes; and
8. *Technology* skills that contribute to effective execution of tasks. (p. 7)

## Categorization of Competency

Guglieliemino (1979) suggested that competencies could be categorized based on the characteristics of behaviors. Based on his analysis of previous research findings on top-level management skills, he summarized three managerial competency dimensions: (a) conceptual capacity, including decision making, creativity, and problem-solving; (b) capacity to interact with people utilizing skills such as communication, leadership,

negotiation, analysis, self-growth; and (c) technical expertise such as time management and creation of business plans. His grouping was supported by Derouen and Kleiner (1994). Byham and Moyer (1996) had similar grouping by the into motives, behavior, and knowledge/skills competencies.

Siriwaiprapan (2000) proposed five common domains of employee competency development in his study of Thai human resource practitioners' perceptions of HR initiatives. His five common domains were as follows:

1. *Organizational competence*: capacity to understand and internalize "organization-specific knowledge, such as business types, organizational cultures, policies, procedures, goals and objectives, and etc;" (p. 184).
2. *Social competence*: "basic abilities for social interaction and communication" (p. 191), including skills in making connections, maintaining interpersonal relationships, and taking pleasure in the significance of peer relationships;
3. *Cognitive competence*: "the ability to learn and to perform analytical thinking, planning, and problem solving, which enable an individual to take responsibility for handling contingencies that may arise;" (p. 195)
4. *Self-competence*: "ability to adjust to change, readiness to learn, readiness to develop oneself, readiness and ability to initiate action, trust, endurance, receptiveness, broad-mindedness and self-discipline, self-esteem, individuality, and self-determination" (p. 205); and
5. *Job competence*: the knowledge, theory, methods, and skills to carry out employees' work assignments and to affect their sense of self-efficacy and self-confidence about a certain job.

In the business management field, Agut and Grau (2002) grouped management competency into two categories: technical and generic competencies. Technical competency related to KSAs, "which basically consist of having knowledge about a topic and knowing how to apply it to a job" (Agut and Grau, 2002, p. 33). The example they provided was information technology. On the other hand, generic competency referred to individual characteristics "that involve coping with less routine, programmed, technique tasks that are also part of the job" (p. 33). They provided one example: initiative to implement a new plan.

Development Dimensions International (DDI), a U.S. human resources consulting

firm, proposed four general dimensions based on its long-term experience with the industry: (a) individual performance; (b) effective communication with others; (c) facilitation of individuals or teams to achieve company goals; and (d) outcome-orientation. Furthermore, the relative importance of each dimension varied with place, time, and people. Based on the functions of jobs, DDI recommended that competencies have different layers. Core competencies were needed by all members of an organization if they were to achieve a core competitive advantage for the organization. The second layer was managerial competencies which were required of members of management. For every work unit, it had specific functional competencies based on its unique operational function (Development Dimensions International, n.d.). To develop a successful competency profile, DDI suggested that a competency analysis should include at least four W's, including "what that person knows, what they can do, what they have experience, and what motives them" (Development Dimensions International, n. d., ¶ 1).

In Taiwan, the term of competency has earned scholars' attention gradually. Hong (1997) divided job competencies into six groups: (a) professional capacity which was associated with knowledge and skills for certain occupations; (b) management capacity such as executing capacity, planning capacity, and time management; (c) interpersonal relationship skills such as communication and timework; (d) attitude, including initiative, enthusiasm, and ability to learn; (e) value systems such as decision making and time orientation; and (f) types of intelligence, such as problem solving.

## Competency Models

Throughout the literature, various competency models were proposed according to the perspectives in different fields. Competency based training models have been implemented widely throughout many countries, including the United Kingdom, New Zealand, and Australia. (Tien, Ven & Chou, 2003; Velde, 2004). Three related competency models were introduced in the following phases.

*Iceberg Model.* Spencer and Spencer (1993) proposed the "Iceberg Model" to divide underlying characteristics, which caused behaviors and performance in a job into five categories:

1. *Motives* were consistent thoughts or desires that caused a particular action. They impelled behaviors toward certain actions or goals and not toward others. Example: Achievement motivation.

2. *Traits* referred to physical and mental characteristics related to the ways a person consistently responded in certain ways to situations and messages. Examples: "reaction time and emotional self-control" (p. 10).
3. *Self-concept* referred to an individual's attitudes, values, and self-image, including self-identity and self-confidence.
4. *Knowledge* referred to a body of information usually of a factual or procedural nature needed to understand a certain subject. Example: "A surgeon's knowledge of nerves and muscles in the human body" (p. 10).
5. *Skills* referred to the ability to accomplish a certain mental task such as analytical thinking and conceptual thinking or a physical task such as "a dentist fill[ing] a tooth without damaging the nerve" (p. 11).

According to the iceberg model, knowledge and skills were visible and appeared at the top of the iceberg, as shown in Figure 4. They were relatively easily developed and improved through education and job training. On the other hand, motives traits were more likely to be hidden since they comprised the innermost part of an individual's personality. In Figure 1, motives and traits appeared at the base of the iceberg. Therefore, they were more difficult to develop and reform through school education and job training. Although the authors grouped self-concept into hidden competencies, they indicated that it could still be changed gradually to a certain degree through constant education, consultation, and training.

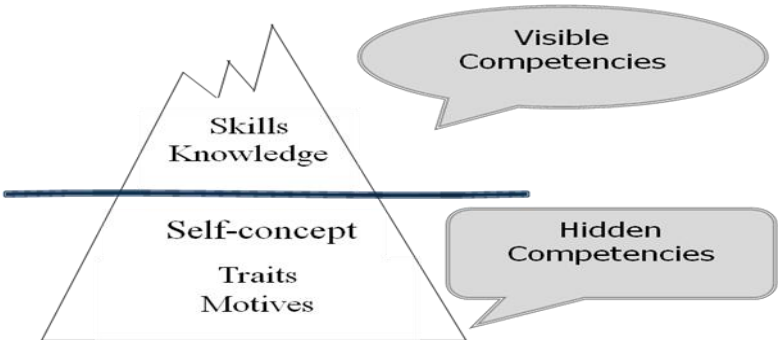



**Figure 1. Iceberg Model.**

*Note*. From "Competence at work: Models for superior performance" by L. Spencer, & M. Spencer, 1993, p.11. Copyright 1993 by John Wiley & Sons, Inc. Adapted with permission of the authors (Appendix L).

*Hard and soft skills.* Hard skills are primarily cognitive in nature, refer to the technical level of performance and usually include professional knowledge and task-oriented skills (Ashbaugh, 2003; Page, Wilson, & Kolb, 1993). Knowledge is the

retention of information about a certain subject. Task-oriented skills are basic prerequisites for a job in which the individual physically interacted with technology during the production of material and tangible products. Hard skills require an intellectual thought process which factors in a person's intelligence quotient (IQ) (Rainsbury, Hodges, Burchell & Lay, 2002). Components of hard skills include formula use, tool use, measuring, and fitness (Costin, 2002).

Soft skills are those skills associated with the behavior necessary for successful interpersonal interaction. Daniel Goleman popularized the emotional quotient (EQ), asserting that soft skills were mainly perceptual or attitudinal and reactionary (Caudron, 1999; Kemper, 1999). Lawrence (2002) thought that soft skills were also needed to be considered as employability skills, including the usage of ingenuity, creativity, intuition, teamwork, self-management skills, problem solving, and communication skills. Based on Lawrence's statement, it was evident that soft skills were more related to Spencer and Spencer's hidden competency. Caudron (1999) and Ganzel (2001) noted that soft skills were more difficult to learn than hard skills. This concept was similar to that Spencer and Spencer (1993) put hidden competency at the base of the iceberg, indicating that they were more difficult to develop and reform through school education and job training.

Much literature emphasized the dichotomy between the hard skills and soft skills, but there was also a great deal of literature that made a case for the union or melding that occurred in the overlapping between hard skills and soft s kills (Caudron, 1999; Mullen, 1997; Strebler, 1997). Figure 6 shows the dichotomy and overlapping between high-end soft skills and high-end hard skills. The items in the middle area are difficult to categorize as strictly hard or soft skills. Moreover, many studies proposed a complementary relationship between soft skills and hard skills in effective job performance (Lin, 2005). This explained why employers not only consider applicants' skills and knowledge but also pay attention to their soft skills such as personal qualities.

In comparison to the idea of the iceberg model, hard skills tends to refer to visible competencies, and soft skills are similar to hidden ones in the iceberg model. As there is an overlapping between hard and soft skills (see in Figure 2), it is difficult to precisely categorize and itemize visible and hidden competencies because of a lack of exact definitions in the literature. Most researchers agreed that knowledge and skills comprised visible competency (Brown, 1993; Byham & Moyer, 1996; Hager & Gonczi, 1996; Li, 2001; Parry, 1998; Raymond, 1999; Quinn et al., 1990; Spencer & Spencer, 1993). Brown (1993) also included creativity in a visible competency. In addition, behavior was perceived as a visible competency by Byham and Moyer (1996). Derouen and Kleiner (1994), Hong (1997), and Li (2001) all agreed that interpersonal

relationships were a form of visible competency. On the other hand, perceptions of content about hidden competencies widely differed among scholars. Attitude could be the most common component (Brown 1993; Hager & Gonczi, 1996; Hong, 1997; Li, 2001; Parry, 1998; Raymond, 1999). Hong (1997), Parry (1998), and Raymond (1999) added value systems into the category of hidden competency. Both Spencer and Spencer (1993) as well as Derouen and Kleiner (1994) perceived conceptual thinking skills as a hidden competency. Motives were classified as a hidden competency by Spencer and Spencer (1993) as well as Byham and Moyer (1996).

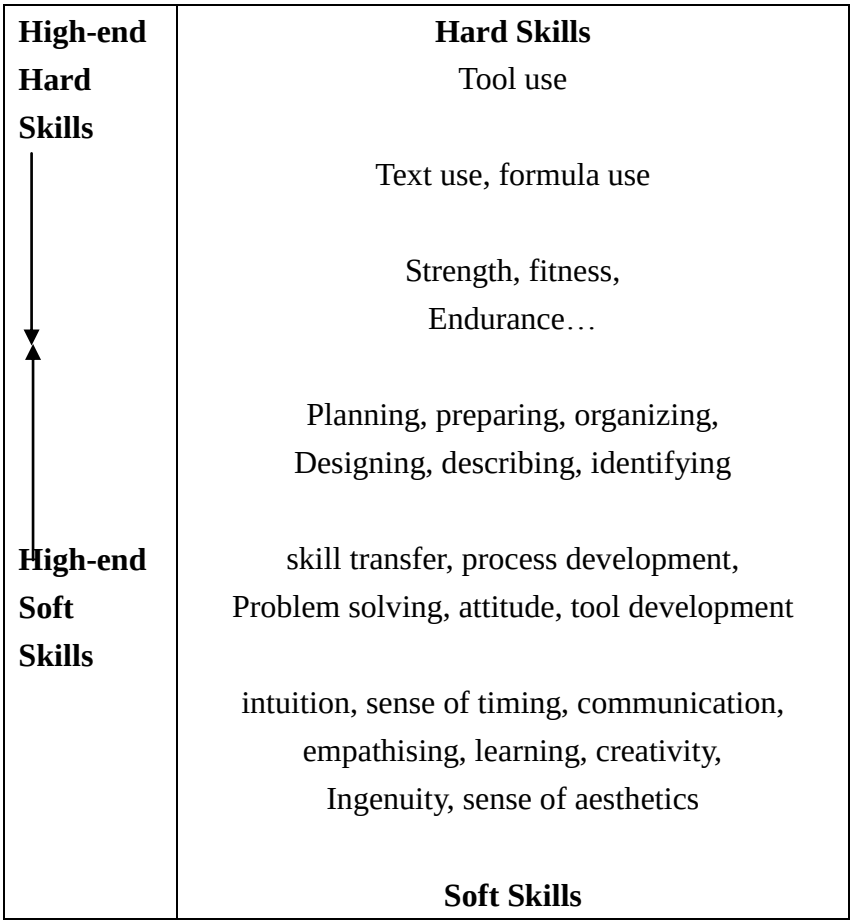



**Figure 2. Soft skills-hard skills continuum.**

*Note*. From "Legitimate subjective observation (LSO) & the evaluation of soft skills in the workplace," by G. P. Costin, 2002, Paper presented at the National Training Framework-Training Partnerships and Regional Development, Albury Convention Centre and Performing Arts Centre, ¶ 3. Copyright 2002 by authors. Adapted with permission of the author (Appendix N).

## Paradigm Shifts on Competency

Currently, several paradigm shifts in the conception and application of competency are occurring. These new paradigms are providing insight into current perspectives about the competency.

In the competition to conduct business at the lowest cost possible, companies have moved towards a performance-based pay system, differentiating employee rewards in accordance with performance, in order to minimize their personnel costs. Companies increasingly reward their workforce, focusing on employees with the greatest potential and those with the skills most valuable to the company (CCH Hong Kong Limited, 2006). According to the 2006 Towers Perrin–China Staff HKHR Council Pulse Survey (CCH Hong Kong Limited, 2006), the report showed that 84% of human resource managers perceived competencies as essential to accomplish the goals of their company. The survey also indicated that more than 75% of companies preferred to pay employees in terms of "key criteria in determining base increase and actual bonus payments" (p. 4) rather than giving "across-the-board/standard increases and payouts" (p. 4). The survey showed a surprising pay gap of 200% to more than 300% between the *average performer* and *high performer* in best practice companies. Furthermore, the survey suggested that the connection between competency potential and rate of pay will be more significant as more and more companies focus on "retention and limit awards under their long-term incentive" (CCH Hong Kong Limited, p. 4).

More and more research has emphasized the importance of soft skills when discussing job competency. Research as early as that of Spencer and Spencer (1993) argued that high-quality performance was not only determined by better technical skills but also by the manifestation of underlying characteristics. Likewise, Buhler (2001) and Ganzel (2001) maintained that soft skills were the key in determining the actual tasks being performed because soft skills such as emotional management ability led to superior performance more than did intelligence. In line with the continuously changing business environment, competent professionals should not only have adequate professional knowledge and be proficient at task-oriented skills, but also be sensitive to changes and adapt to the new challenges in the workplace (Abanteriba, 2006). Hodges and Burchell (2003) presented their worry about undergraduate education as "traditional undergraduate degrees that focus more on cognitive and technical development within a narrow discipline-based theoretical framework, may not be seen as able to produce the

well-rounded, multi-skilled, flexible, and adaptable graduates demanded by today's business organixations" (p. 20).

Siriwaiprapan (2000) observed that thinking skills such as analytical thinking, problem solving, and planning have become more important in tackling contingencies when jobs change unpredictably. As the business environment becomes increasingly knowledge-oriented, "jobs require employees who can think, make decisions, conceptualize, analyze and resolve problems, implement new ideas, communicate well, and adapt to change" (Velde, 2004, p. 69). Therefore, numerous contemporary social movements and educational authorities have become proponents of building strong character, an effort originally proposed by Richard Riley, the former U.S. Minister of Education (Huang, 2003). This concept has led to the rapid growth of voluntary community service programs on Taiwanese campuses. Those programs expect students learn from service practice.

To succeed under the market trends in the global economy, future employees need to be ready for either local or international work opportunities. A growing number of scholars have given international perspectives to the concept of competency. Reich (1991) recognized that the world has become a highly global network, suggesting that a symbolic analytic worker needed to be able to identify, solve, and broker problems. Continuously, Dlabay (1997) suggested that economic, political-legal, technology, culture, and human relations skills were basic courses of international business instruction. Three chief competencies for expatriates, including adaptation, interpersonal relationship, and culture shock management were highlighted by Feng and Pearson (2002). Hodges and Burchell (2003) suggested that highly competitive business environment required graduates to acquire the ability to understand situations in order to communicate effectively. Wu (2004) suggested that technological-vocational graduates should possess "knowledge economics, information technology, intercultural learning, foreign language, and humanity" (p. 5).

## Competency in Taiwan

Over the past decade, the conception of competency has been considered a foundation for human resource management. Also, a balanced scorecard has functioned as a human resource management tool applied to performance assessment. According to

organizational vision and strategies, core competencies have been identified as a base for organizational transactions, because only competent employees are able to achieve the results linked to organizational vision and goals. Under this climate, a national training quality assurance system was established to ensure that Taiwan's workforce training system kept up with the rest of the world and strengthen national competitiveness.

Referring to standards such as the ISO10015 international standards (ISO10015) and the Investors in People (IIP) in the U. K., the Taiwan TrainQuali System (TTQS) was developed by the Bureau of Employment and Vocational Training in 2005. The TTQS Scorecard Evaluation is a governmental training assurance system in which the expected effectiveness of organizational training programs is evaluated as the criteria for governmental grants. It is expected to promote and implement the "functions of 'training specification measurement,' 'training strategy management' and 'organizational communication tool'" (Bureau of Employment and Vocational Training, 2007, ¶ 1).

An organizational TTQS is based on which organizational strategies and business plans would successfully achieve organization-specific business vision and goals. It is important to draw a clear picture of what defined a successful performance for a certain job in a certain organization before it starts to implement the human resources development and training. The TTQS system is a competency-based performance management system; that is to say, competency analysis plays a critical role in connecting organizational strategies and business plans with human resource management. An organization will periodically analyze the deficits in employees' current performance, determined by competencies employees actually have compared to the competencies employees are expected to have. The deficits lead to a need for training. Then the "PDDRO" process cycle is conducted to implement a training program. The PDDRO consists of five components, including planning, design, delivery, review, and outcome, which make up the input-output cycle. These components occur in order, and if implemented successfully, should lead to a diminished performance gap and stronger core competencies. The evaluation process cycle of TTQS is presented in Figure 3.

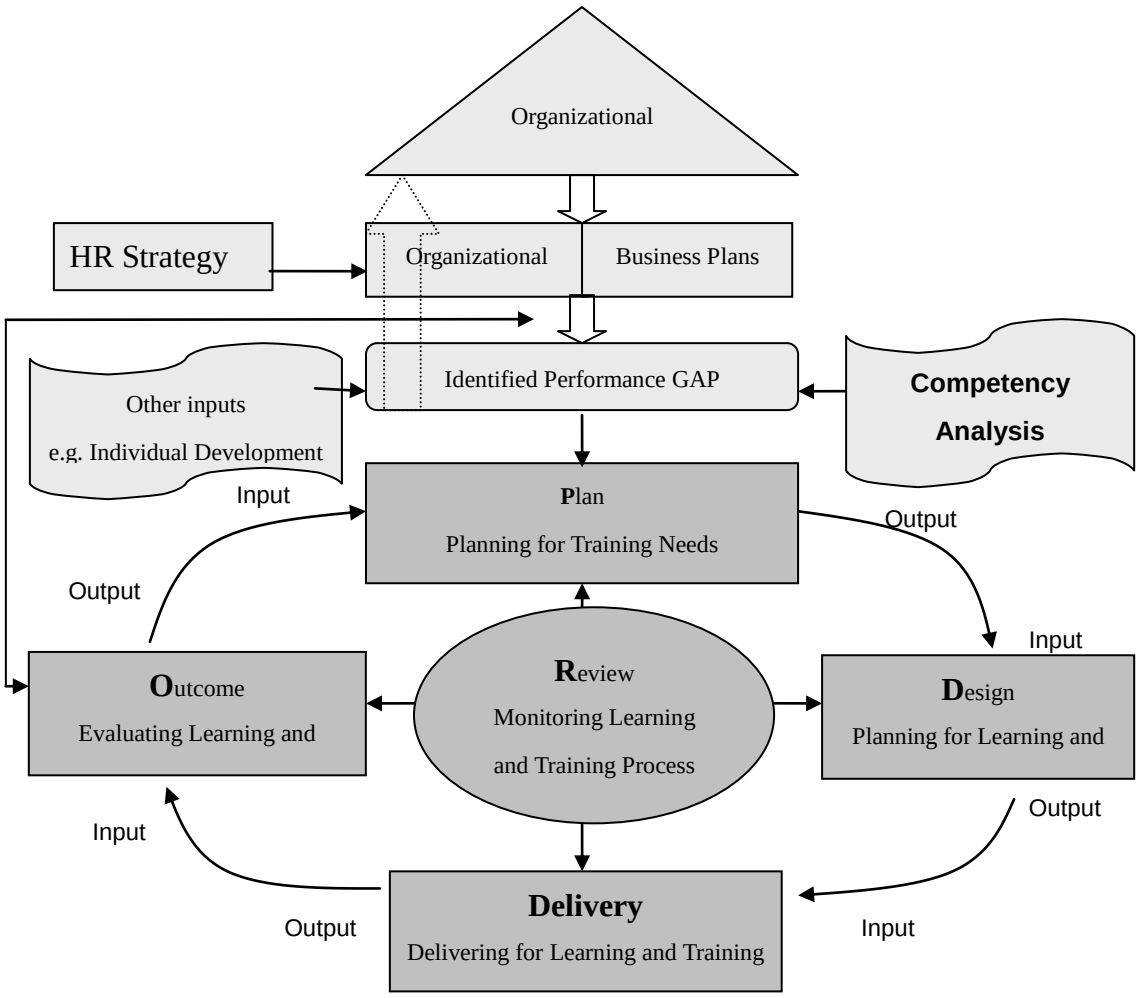



**Figure3 . Evaluation process cycle of TTQS.**

*Note*. The figure is based on "The introduction of TTQS: e-learning-enterprise version" by Lu, C. C., 2007, p. 5. Copyright 2007 by authors. Adapted with permission of the author (Appendix O).

In the academic field, dozens of Taiwanese studies have conducted empirical investigations to assess the success competencies critical for certain occupations such as salespeople (Chen, 1999; M. Y. Li, 1995; S. C. Li, 2001), bankers (Wang, 2007), general managers (Chang, 1998; Chen, 2001; Chiou, 2003; Lin, 1997), hotel managers (Kuo, 2003; Huang, 1998; Li, 2000), and generalized subjects (Hong, 1997; 104 Human Resources Consulting Firm, 2008; Liu, Chiou & Hu, 2006). All literature affirmed the importance of professional knowledge and skills. Besides professional competencies,

studies also placed emphasis on various elements of self-concept and soft skills, such as thinking skills, personal qualities, interpersonal relationships, and managerial competencies in accordance with the job characteristics in each field. The researcher analyzed the frequency of each item in order that was perceived as important in the literature in Table 1. The top 12 important competencies based on the frequency they were counted are: Communication skills、Teamwork、Ability to learn、Implementation、Problem solving、Self-control、Initiative、Enthusiasm、Customer service orientation、Relationship building、Time management、 Leadership.

**Table 1** ***Frequency of Competencies in Literature Review***

| Competency | Literature | Frequency |
|---|---|---|
| Communication skills | Chen, 2001;Chiou, 2003; Chou & Shen, 2004; Hong, 1997; Huang, 1998; Kuo, 2003; Li, 2000; Liu, Chiou & Hu, 2006; Wang, 2007 | 9 |
| Teamwork | Chen, 1999; Chen, 2001; Chou & Shen, 2004; Hong, 1997; Kuo, 2003; Li, 2000; Liu, Chiou & Hu, 2006; Wang, 2007; 104, 2008 | 9 |
| Ability to learn | Chang, 1998; Chou & Shen, 2004; Hong, 1997; Kuo, 2003; Liu, Chiou & Hu, 2006; 104, 2008 | 6 |
| Implementation | Chang, 1998; Chou & Shen, 2004; Hong,1997; Lin,1997; Wang, 2007;104, 2008 | 6 |
| Problem solving | Chen, 2001;Chou & Shen , 2004; Hong, 1997; Liu, Chiou & Hu, 2006; 104, 2008 | 5 |
| Self-control | Chang, 1998; Chiou, 2003; Chou & Shen, 2004; Liu, Chiou & Hu, 2006; 104, 2008 | 5 |
| Initiative | Chiou, 2003;Chou & Shen, 2004; Hong, 1997; Kuo, 2003; 104, 2008 | 5 |
| Enthusiasm | Chou & Shen, 2004; Hong, 1997; Kuo, 2003; Wang, 2007; 104, 2008 | 5 |
| Customer service orientation | Chen, 1999; Chen, 2001; Chiou, 2003; Huang, 1998; Kuo, 2003 | 5 |
| Relationship building | Chen, 2001; Hong, 1997; Lin, 1997; Wang, 2007; 104, 2008 | 5 |
| Time management | Chang, 1998; Chiou, 2003; Hong, 1997; Huang, 1998; Kuo, 2003, | 5 |

| | | |
|---|---|---|
| Leadership | Chou & Shen, 2004; Hong,1997; Huang, 1998; Kuo, 2003; Lin, 1997; | 5 |
| Crisis management | Chen, 1999; Kuo, 2003; Lin, 1997; 104, 2008 | 4 |
| Decision making | Hong, 1997; Lin, 1997; Wang ,2007 | 3 |
| Responsibility | Chou & Shen, 2004; Hong, 1997; Kuo, 2003 | 3 |
| Self-confidence | Chen, 1999; Chou & Shen, 2004 | 2 |
| Expressing | Hong, 1997; Lin, 1997 | 2 |
| Planning skills | Chen, 2001; Hong, 1997; | 2 |
| Ability to allocate | Chiou, 2003; Hong, 1997 | 2 |
| Achievement motivation | Chen, 1999 | 1 |
| Integrity | 104, 2008 | 1 |
| Adaptability | Chou & Shen, 2004 | 1 |
| Career planning | Chiou, 2003 | 1 |
| Optimism | Chou & Shen, 2004 | 1 |
| Diligence | Chou & Shen, 2004 | 1 |
| Self-identity | Chen, 1999 | 1 |
| Time orientation | Hong, 1997 | 1 |
| Interpersonal understanding | Chen,1999 | 1 |
| Inspiring | Hong, 1997 | 1 |
| Goal management | Hong, 1997 | 1 |

In the industrial field, the finding of Liu, Chiou and Hu (2006) that over 30% of Taiwanese employers were not satisfied with the performance of university graduates, and only 20% of them reported being very satisfied. Employers especially criticized not only employees' professional knowledge and skills, but also their ability and motivation to learn, emotional stability, ability to handle pressure, as well as problem definition and solving. Consequently, firms had to spend resources retraining and developing the skills of entry-level employees (Livingstone & Hart, 1998). On the other hand, in the investigation conducted by Liu, Chiou and Hu (2006), many university graduates and current employees complained of being over-educated in schools and underused in their workplace as well as lacking practical experience before entering the workplace.

Based on a study of the 111 Human Resources Consulting Firm in 2007, over 60%

of Taiwanese human resource managers ranked thinking skills and interpersonal relationship skills higher than knowledge and hard skills, and most of them were reluctant to devote efforts and resources to the development of employee's soft skills (Importers and Exporters Association in Taipei, 2008). In addition, according to a recent interview report from the Importers and Exporters Association of Taipei (2008), employers and supervisors in international trade companies preferred that salespeople had a customer service orientation and a goal orientation. Generally speaking, they placed greater emphasis on aspects of employees' personalities, such as initiative, coping with stress, responsibility, and independence, than on employees' academic degrees. Supervisors especially valued an employee's problem-solving abilities.

Being aware of the above problems, the Ministry of Education was devoted to making a series of educational reform policies. As one of the policies, the Ministry of Education, Technological and Vocational Education (2008a) declared that technological-vocational education should cultivate a greater number of graduates prepared to work in high-level technical/managerial fields, in order to cope with changes in the structure of Taiwan's domestic production. This policy also dictated that students should have more intensive training particularly in foreign languages, finance, information, communications, and customer service, to produce employees who were more internationally conscious and globally competitive. Specifically, international trade professionals who encountered international business in their daily tasks would have a number of opportunities to experience cross-cultural communication. It is more important for them to understand the relationships between societies and to develop an awareness of their own culture and other cultures (Gacel-Avila, 2005).

## Conclusion

Since David McClelland (1973) used the term of competency as a criterion of assessment in the higher education system, many subsequent studies about competency have made in other fields such as teacher education, vocational education, business management, and human resource management.

Comparing the term "job descriptions" and "KSAs," competencies are viewed more broadly and more behavior-based. Each competency requires several KSAs. Competencies included many factors that influenced job success but are not included in the job description. Three key points in defining a competency are underlying qualification and attributes of a person, observable behaviors, and standard of individual

performance outcomes. In summary, the purpose of identifying competencies is to provide a well-trained workforce that will work for organizational goals effectively and efficiently.

Even competencies have been categorized in the literature from various perspectives, conceptual capacity, behavior, and knowledge/skills competencies are common groups. According to the iceberg model, knowledge and skills were visible and appeared at the top of the iceberg. They were relatively easily developed and improved through education and job training. On the other hand, motives and traits appeared at the base of the iceberg, because both were more likely to be hidden and comprised the innermost part of an individual's personality. Therefore, they were more difficult to develop and reform through school education and job training.

Hard skills usually include professional knowledge and task-oriented skills. Soft skills are those skills associated with the behavior necessary for successful interpersonal interaction. Comparing to soft skills, hard skills require more intellectual thought process which factors in a person's intelligence quotient (IQ). On the other hand, soft skills were mainly related to the emotional quotient (EQ). In comparison to the idea of the iceberg model, hard skills tend to refer to visible competencies, and soft skills are similar to hidden ones in the iceberg model. As there is an overlapping between hard and soft skills, it is difficult to precisely categorize and itemize visible and hidden competencies because of a lack of exact definitions in the literature.

Currently, several paradigm shifts in the conception and application of competency are occurring. First, companies have moved towards a performance-based pay system, differentiating employee rewards in accordance with performance. Secondly, more and more research has emphasized the importance of soft skills when the global business environment becomes increasingly knowledge-oriented and keeps changing quickly. Thirdly, to succeed under the market trends in the global economy, future employees need to employ international perspectives to the concept of competency. With this trend, the Taiwan Ministry of Education dictated that students should have more intensive training particularly in foreign languages, finance, information, communications, and customer service, to produce employees who were more internationally conscious and globally competitive.

Since 2005, the Taiwan Bureau of Employment and Vocational Training has developed a competency-based performance management system— the Taiwan TrainQuali System (TTQS) Scorecard Evaluation in which competency analysis plays a critical role in connecting organizational strategies and business plans with human resource management. In academic field, the top 12 important competencies based on the frequency they were counted are: Communication skills、Teamwork、Ability to learn、Implementation、Problem solving、Self-control、Initiative、Enthusiasm、Customer service orientation、Relationship building、Time management、Leadership.

According to industrial surveys, Taiwanese employers were not satisfied with the performance of university graduates. Moreover, many university graduates and current employees complained of being over-educated in schools and underused in their workplace as well as lacking practical experience before entering the workplace. Being aware of the above problems, the Ministry of Education has devoted to develop a competency-base curriculum in order to cope with changes in the today's workplace.

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