

## The Impact of Information Technology Graduates' Competencies on the Industry Needs

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### **Abstract:**

*The industry's success is determined much by the skills of its workforce. This requires focusing on how human resource development activities can be used in ensuring the workforce to be equipped with skills and to successfully meet the challenges. The ICT industry of Viet Nam faces challenges that are complex, and new dimensions, such as the increasing workforce diversity and the rate of technological change make it difficult to ensure human resource development efforts to succeed unless the decision-makers make informed choices about the content and methods of delivering the development interventions*

**Keywords:** Information technology, ICT industry, Viet Nam

### **1. INTRODUCTION**

According to international assessment agencies on Information Technology and Communication, Vietnam has information technology and communication development index (IDI) ranking at 86 out of 161 nations and rank 4th position in Southern East Asia (2012). Networked Readiness Index (NRI) of Vietnam ranked at 84 out of 144 nations and 5th position in Southern East Asia in 2012. Regarding to information technology industry, Vietnam ranked at 8th worldwide on software processing activities (according to Tholon Corporation, 2011), stays on top ten nations in Pacific Asia and top thirty worldwide (according to report of Gartner Corporation in 2012). Vietnam has been highly considered on public service and application of information technology on State Agencies. For the norms of electronic Administration/Government, Vietnam has been classified at 4th position in South East Asia and 81 out of 190 nations in 2012.

Regarding human resource quality, Vietnam has ranked at 101 out of 161 nations in 2012 and highly considered on education qualification of mathematics and scientific subjects. Nowadays human resource on information technology is not only very limited in number in Vietnam, but it is also lack in the world. Now the world is in shortage of 4 million engineers on information technology (IT). And in Vietnam demand of human resource on software industry (PM) has been dramatically increasing. From 2011 to 2015, Vietnam is estimated to need about 20.000 - 25.000 engineers on IT. While education and training capacity of human resource on information technology provides about 34.448 engineers, 41.048 ones in 2010 and 2012 respectively. In fact number of qualified IT engineers under employer's requirements are even much smaller.

According to employer's statistics database, Vietnamese IT engineers are very weak in communication skill, professional working style, and English proficiency. Moreover, about 64% of human resource is weak in group working ability. Thus they could not integrate and adapt to employer's standards after being recruited. Up to 71% graduation students have not adapted to technology advance change, 90% foreign language insufficient students. Therefore Vietnamese IT staffs could only utilise 60% their capacity and big obstacles for enterprise's recruitment.

Education in its general sense is a form of learning in which the knowledge, skills, and habits of a group of people are transferred from one generation to the next through teaching, training, or research. It is essential for everyone and the level of education helps people earn respect and recognition. It is a fact that the importance of education is undeniable for every single person. It goes without saying that education has a positive effect on human life. All people need to access to education. Only with the advent of education can people gain knowledge and enlarge their view over the world.

Education plays such a rudimentary role in our society that we cannot even imagine a life without it. It is a determined element for the civilization of human society. Not only does it help us develop healthy

surroundings but it also generates an advance community. As a matter of fact, everything we create today is based on the knowledge that we obtain throughout our life by way of education. This assists scientists in inventing equipment and devices, resulting in a high technology nowadays. The more developed life becomes, the more necessary education is for everyone because the development of a country depends vastly on the standard of education, it must do everything to improve it. Although the educational systems of different countries are not similar but they have to share a common goal which is to provide its citizens a suitable and proper learning. Education is absolutely beneficial for the society on the whole. It is a life-long process to each person that needs to be reinforced throughout life. However, we need an education system that may eradicate illiteracy and may provide the common man an access not only to basic education but also to higher and technical education.

Viet Nam's competitive advantage in the global economy depends on qualified and skilled workforce. A troubling gap, however, currently exists between the skills and knowledge of the country's current and projected workforce and the demands of jobs expected to grow most rapidly during the next decade.

From 1st of October to 15th of October 2012 in Hanoi, the 11th steering committee of the party held the 6th meeting to discuss and draw the resolutions on building project "Fully and fundamentally innovate the education and training in the market economy which is oriented to the socialist and international integration; and on building project "Develop science and technology to support the industrialization and modernization in the market economy which is oriented to the socialist and international integrations."

The steering committee of the party identified that for a secured leading of the party and for the consideration of the whole nation as well as the efforts of the teachers, managers and scientist communities are the reasons that the science and technology of the nation obtained important achievements on the quantity and quality of the education in all levels, including management, scientific research and applications, market and services for the science and technology, and international collaboration.

The industry's success is determined much by the skills of its workforce. This requires focusing on how human resource development activities can be used in ensuring the workforce to be equipped with skills and to successfully meet the challenges. The ICT industry of Viet Nam faces challenges that are complex, and new dimensions, such as the increasing workforce diversity and the rate of technological change make it difficult to ensure human resource development efforts to succeed unless the decision makers make informed choices about the content and methods of delivering the development interventions.

Training Needs Assessment provides decision making information on the competency gaps of the training audiences, training providers and courses available, training gaps, appropriate delivery methods, training strategies, recommendations and strategic vision as a way forward for the ICT industry.

Training, education and development areas are focused with a Competency Based Training approach in the skill development of the ICT industry workforce. The nature of 'a never ending cycle' in training and the role of human resource managers in planning, monitoring, reviewing and evaluating the training outcomes for enhanced and effective work performance emphasize the need for a continuous strategic training process for the industry. The horizontal and vertical career movements in search of higher exposure in gaining strong profiles and the transitory trend of 'keep learning keep moving' of the workforce identifies the need for faster learning techniques and acknowledging IT worker as an industry resource rather than an organization resource. The multiple professional expertise's required in terms of the industry specific technical nature of the ICT capabilities for effective discharge of functions is identified for the industry. The horizontal and vertical career movements in search of higher exposure in gaining strong profiles and the transitory trend of 'keep learning keep moving' of the workforce identifies the need for faster learning techniques and acknowledging IT worker as an industry resource rather than an organization resource. The multiple professional expertise's required in terms of the industry specific technical nature of the ICT capabilities for effective discharge functions is identified. In building a competent ICT workforce to meet the industry's challenging opportunities, this report

presents a detailed list of key findings, recommendations and a way forward that include; Requirement of greater congruence between training organizations and the ICT industry need for training strategy to be implemented as an evolving process and ICT to initiate an accreditation process for training courses as well as on the training entities.

Non-technical skills lack in greater proportions across the industry of which effective communication skills in the English language is highlighted Industrial standardization and accreditation of the courses and course curriculums, evaluation mechanisms with the participation of the training institutes and the industry is recommended for skill standardization.

Career and transitory trends of individuals identified as seeking greater exposure for building high profiles for future progression rather than titles that require deployment of faster, economical training methods with the increasing demand for value-added services that require higher competencies in both modern technical and non-technical areas.

Potential need to incorporate industrial placements to IT related degrees and professional qualifications to give individuals prior exposure to fast-pace the work environment.

Information Technology was noted at TNU, The University is mandated to pursue training high quality human resource, conducting researches on scientific technologies and management, verifying and proposing solutions and sustainable development policies, and contributing to the socio-economic development of the region towards industrialization and modernization. It is the vision of TNU to become a world class University within Vietnam and the Southeast Asia in providing higher education in the fields of agriculture and forestry, teacher education, technology, economics, business administration, medicine and pharmacy, information and communication technology, foreign languages, among others.

Based on the situation above, the researcher decided to conduct a study on Relevance of Information Technology graduates' competencies to the industry need.

## **2. LITERATURE REVIEW**

**Adaptability:** according to Andresen and Gronau, adaptive ability in the field of management organization is defined as ability to change something or self-change consistent with surrounding environment. In ecosystem, adaptive ability is described as ability in response to sudden environment disorder.

**Curriculum:** All syllabus programs for individuals or even groups implementing domestically or internationally are scheduled and instructed by universities. Those teaching programs will plan all relevant aspects from knowledge, skills, education progress, attitude, expected education values as well as learning result report, material description, and implementation schedule to achieve expected learning results.

(John Kerr) All the learning which is planned and guided by the school, whether it is carried on in groups or individually, inside or outside the school. Outlines the skills, performances, attitudes, and values pupils are expected to learn from schooling. It includes statements of desired pupil outcomes, descriptions of materials, and the planned sequence that will be used to help pupils attain the outcomes.

The total learning experience provided by a school. It includes the content of courses (the syllabus), the methods employed (strategies), and other aspects, like norms and values, which relate to the way the school is organized.

The aggregate of courses of study given in a learning environment. The courses are arranged in a sequence to make learning a subject easier. In schools, a curriculum spans several grades.

Curriculum can refer to the entire program provided by a classroom, school, district, state, or country. A classroom is assigned sections of the curriculum as defined by the school. For example, a fourth grade class

teaches the part of the school curriculum that has been designed as developmentally appropriate for students who are approximately nine years of age.

- Curricula remain relevant to employers:

Close integration of employer needs and University training programs offer several advantages, including the standardization of curriculum, credentials, processes, and procedures” (Bozell and Goldberg 2009), making expectations clear for both employers and students. Occupational skill certification programs and awarding of a credential applicable to several employers across an industry sector, for example, can provide a uniform way for businesses to communicate the skills required for specific jobs and for community colleges to standardize their training (Martinson 2010)

This approach also ensures that college curricula remain relevant to employers’ needs and can adapt to quickly shifting workplace realities. According to Carnevale and Desrochers (2001, 26), “By integrating their Community colleges need and value various types of employer involvement. Current and predicted changes in the economy and workforce demands, however, argue for even closer, more substantive collaboration between the two to develop curriculum and training programs.

Competencies: Competencies is defined as an aggregated characteristic of individuals to ensure successful activities fitting with specialization of given cases. Capacity is derived from natural human basis and educational process. Capacity is not only formed naturally, but also it mainly comes from education and training process.

Spencer and Spencer view competency as a characteristic of an individual, that is causally related to job performance (1993). Competencies can be accumulated within an individual and represent a capacity to perform at some future point (Boam & Sparrow, 1992; Page, Wilson & Kolb, 1993). Essentially, these definitions relate to enduring characteristics possessed by an individual that, under normal.

Joseph (1997), in a survey of 280 New Zealand graduate employers, found the top ranked competencies in descending order were: willingness to learn; having a positive attitude; being motivated; having good communication skills; and, possessing the ability to work independently.

Hence, the literature suggest that employers of graduates now place major emphasis on generic, behavioral competencies, both in the recruitment of graduates for employment, as well as their performance on the job (Raymond, McNabb & Matthaei, 1993; Weisz, 1999). As a consequence, undergraduate courses must seek to develop these competencies in order to meet the needs of business (Haber, 1993).

Weisz (1999) found evidence of a link between degree programs that included work-based cooperative education and graduate employment, and found that employers expect that generic competencies must be developed prior to employment.

Interestingly, Weisz (1999) noted little correlation between academic achievement and levels of generic skills, suggesting that employability is not necessarily related to academic ability.

Joseph and Joseph (1997) reported that employers believe that educational institutions provide relevant employment experience for their business students, but remarkably, the attributed generic competencies showed a low level of importance.

However, the level of competency expected of graduates by their employers, decreased below their perceived level of importance, suggesting that employers expect these competencies would be developed elsewhere in the curriculum and not necessarily through industry involvement.

Raymond, McNabb and Matthaehi (1993), in a survey of teaching methods to develop competencies for the workplace, found both employers and students ranked cooperative education as the most important educational method, and pointed to a critical need for student thinking and ability to learn.

In summary, there have been a number of studies reported in the literature that point to what employers consider to be important in graduates, but there is little recent research on employers' perceptions of the level of competency that graduates bring to the workplace.

Definitions of attitude: Attitude is defined as a positive or negative assessment of human, object, events, activity, initiative or anything in your surrounding environment.

An attitude can be defined as a positive or negative evaluation of people, objects, event, activities, ideas, or just about anything in your environment, but there is debate about precise definitions. Measuring attitudes: Many measurements and scales are used to examine attitudes. Attitudes can be difficult to measure because measurement is arbitrary, meaning people have to give attitudes a scale to measure it against, and attitudes are ultimately a hypothetical construct that cannot be observed directly. Following the explicit-implicit dichotomy, attitudes can be examined through direct and indirect measures.

- Attitude structure: attitude contains cognitive, affective, and behavioral components. Empirical research, however, fails to support clear distinctions between thoughts, emotions, and behavioral intentions associated with a particular attitude.
- Attitude function: Another classic view of attitudes is that attitudes serve particular functions for individuals. That is, researchers have tried to understand why individuals hold particular attitudes or why they hold attitudes in general by considering how attitudes affect the individuals who hold them.
- Attitude formation: attitude formation is the study of how people form evaluations of persons, places or things. Theories of classical conditioning, instrumental conditioning and social learning are mainly responsible for formation of attitude.
- Attitude change: Attitudes can be changed through persuasion and an important domain of research on attitude change focuses on responses to communication. Experimental research into the factors that can affect the persuasiveness of a message include: Emotion and attitude change
- Attitude-behavior relationship: The effects of attitudes on behaviors represent a significant research enterprise within psychology. Two theoretical approaches have dominated this research: the theory of reasoned action and, its theoretical descendant, the theory of planned behavior, both of which are associated with Icek Ajzen. Both of these theories describe the link between attitude and behavior as a deliberative process, with an individual actively choosing to engage in an attitude-related behavior. An attitude can be defined as a positive or negative evaluation of people, objects, event, activities, ideas, or just about anything in your environment, but there is debate about precise definitions.
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- Jung's definition: Attitude is one of Jung's 57 definitions in Chapter XI of Psychological Types. Jung's definition of attitude is a "readiness of the psyche to act or react in a certain way" (Jung, [1921] 1971:p 687). Attitudes very often come in pairs, one conscious and the other unconscious. Within this broad definition Jung defines several attitudes. The main (but not only) attitude dualities that Jung defines are the following.

- Consciousness and the unconscious. The "presence of two attitudes is extremely frequent, one conscious and the other unconscious. This means that consciousness has a constellation of contents different from that of the unconscious, a duality particularly evident in neurosis" (Jung, [1921] 1971: p 687).
- Extraversion and introversion. This pair is so elementary to Jung's theory of types that he labeled them the "attitude-types".
- Rational and irrational attitudes. "I conceive reason as an attitude" (Jung, [1921] 1971: p 785).
- The rational attitude subdivides into the thinking and feeling psychological functions, each with its attitude.
- The irrational attitude subdivides into the sensing and intuition psychological functions, each with its attitude. "There is thus a typical thinking, feeling, sensation, and intuitive attitude" (Jung, [1921] 1971: p 691).
- Individual and social attitudes. Many of the latter are "isms".

In addition, Jung discusses the abstract attitude. "When I take an abstract attitude..."(Jung, [1921] 1971: p679). Abstraction is contrasted with creationism " CREATIONISM. By this I mean a peculiarity of thinking and feeling which is the antithesis of abstraction" (Jung, [1921] 1971: p 696). For example: "I hate his attitude for being Sarcastic."

Graduates competencies: Studies of Competencies Required of Graduates While most employers recognize the importance of graduates' personal

characteristics, there is little agreement on the balance expected between these and their discipline specific technical knowledge (Harvey, Burrows & Green, 1992).

Various authors have proposed a number of competencies required or expected of graduates. For example, Maes, Weldy and Icenogle (1997), consider oral communication, problem-solving skills and self-motivation to be the three most important competencies required of graduates. Stasz (1997) likewise considered problem-solving, teamwork, communication skills, and personal qualities, as the most important competencies, but suggests that the workplace context determines their relative importance.

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- **Competencies:** Dreyfus and Dreyfus introduced nomenclature for the levels of competence in competency development. The causative reasoning of such a language of levels of competency may be seen in their paper on Calculative Rationality titled, "From Socrates to Expert Systems: The Limits and Dangers of Calculative Rationality The five levels proposed by Dreyfus and Dreyfus were:

1. Novice: Rule-based behaviour, strongly limited and inflexible
2. Experienced Beginner: Incorporates aspects of the situation
3. Practitioner: Acting consciously from long-term goals and plans
4. Knowledgeable practitioner: Sees the situation as a whole and acts from personal conviction
5. Expert: Has an intuitive understanding of the situation and zooms in on the central aspects

### **Benefits of Competencies**

Competency models can help organizations align their initiatives to their overall business strategy. By aligning competencies to business strategies, organizations can better recruit and select employees for their organizations. Competencies have become a precise way for employers to distinguish superior from average or below average performance. The reason for this is because competencies extend beyond measuring baseline characteristics and or skills used to define and assess job performance. In addition to recruitment and selection, a well sound Competency Model will help with performance management, succession planning and career development.

**Selection:** The use of behavioral interviewing and testing where appropriate, to screen job candidates based on whether they possess the key criteria which are necessary for job competency profile.

**Training & Development:** Development of individual learning plans for individual or groups of employees based on the measurable “gaps” between job competencies or competency proficiency levels required for their jobs and the competency portfolio possessed by the incumbent.

**Performance Management:** Provides regular measurement of targeted behaviors and performance outcomes linked to job competency profile critical factors.

**Succession Planning:** Careful, methodical preparation focused on retaining and growing the competency portfolios critical for the organization to survive and prosper. **Need:** Need is a spiritual status of human; or it can be defined as a human's requirement, demand, expectation on material and spirit for survival and development. Depending on difference of individual's perception, living environment, psychophysiological characteristics, each person has different demand or expectation. Demand is an incentive

factor for human development. More urgent human demands, more dormant they are. On management aspect, controlled demand means individual control.

A need is something that is necessary for organisms to live a healthy life. Needs are distinguished from wants because a deficiency would cause a clear negative outcome, such as dysfunction or death. Needs can be objective and physical, such as food, or they can be subjective and psychological, such as the need for self-esteem.

Doyal and Gough's definition: each person has an objective interest in avoiding serious harm that prevents the endeavor to attain his or her vision of what's good, no matter what that is exactly. This attempt requires the ability to participate in the societal setting in which an individual lives. More specifically, each person needs to have both physical health and personal autonomy. The latter refers to the capacity to make informed choices about what should be done and how to implement that. This requires mental health, cognitive skills, and chances to participate in society's activities and collective decision-making.

How are such needs satisfied? Doyal and Gough pointed out eleven broad categories of "intermediate needs" that define how the needs for physical health and personal autonomy are fulfilled:

Adequate nutritional food and water Adequate protective housing

A safe environment for working A supply of clothing

A safe physical environment Appropriate health care Security in childhood

Significant primary relationships with others Physical security

### **Economic security**

Safe birth control and child-bearing Appropriate basic and cross-cultural education

- Maslow's Hierarchy of Needs:

Maslow (1943 and 1970) describes human being as a creature which is never satisfied. For human, satisfaction is temporary. If one's need is satisfied, there are other needs that will appear to be satisfied, and so on. Maslow's concepts that needs for human being is subordinate from child and composed with many consecutive levels. Maslow's hierarchy of needs theory is composed of five levels. Maslow's hierarchy of needs is often stated as a diagram consisting of five levels: the four lower levels are grouped together as being associated with physiological needs, while the top level is termed growth needs associated with

1. Psychological needs.
2. Physiological needs
3. Love and belonging
4. Esteem
5. Self-actualization

- Every job has a requirement of specific set of competencies to undertake it efficiently, and the individuals who would perform the job need to be placed with those competencies. One of the interesting and worth mentioning aspect of this term is that it focuses not on what a person can do but on what a person can learn. This forward looking approach makes it quite popular amongst training providers and recruitment experts.



Competencies with their specific behavioral indicators facilitate the demonstration of appropriate skills and behaviors, it is not a set of tasks performed like a robot neither it is an underlying capacity which is never demonstrated.

Competency also includes motivation and self-knowledge, a desire and willingness to demonstrate effective performance. So, with this information we can proceed to defining Competency:

A set of individual performance behaviors which are observable, measurable and critical to successful individual and company performance Individual characteristics of a person which result in an effective and superior performance in a job.

There has been a lot of debate on the aspect that whether competencies are unique to a particular job or they are generic in nature. A little example would help the understanding, does 'Management' require the same set of behaviors to be demonstrated across the organization, job function, location etc by the managers or they differ across organizations, cultures, functions and settings

According to the McBer research, apart from identifying 12 characteristics related to managerial effectiveness, seven were found to be threshold competencies.

It is worth to spare a few minutes understanding what a threshold competency is: It is summarized as a quality that a person needs in order to do a job; it might be as simple as being able to speak in the native language. It is different from the competency in a manner that it does not offer any aid in distinguishing superior performance from average to poor performance.

So, every job at any level in the organization would have a threshold competency, the bare minimum required to perform the job.

To gather a better understanding of competencies, it would be interesting to have a look at the work of some of the pioneers of the field. To begin one can always resort to the exemplary work done by McBer and the competency dictionary developed by him. Some of the generic competencies that were included in the list were:

Achievement Orientation Analytical Thinking Conceptual Thinking Customer Service Orientation Developing Others Defectiveness

### **Flexibility**

Impact and Influence Information Seeking Initiative Integrity Interpersonal Understanding

There are several more, but looking at the above list, one can notice that these competencies are applicable across businesses and functions and hence called generic competencies.

The above lists leads to an obvious conclusion that there might be specific types of competencies as well, and surely competencies are also categorized into:

**Leadership Competencies:** Are managerial and cognitive competencies, e.g. analysis and problem solving, managing execution, adapt and learn etc.

**Functional Competencies:** Are those which are required within specific functions, e.g. knowledge of products, labor laws, inventory distribution systems, local food safety and handling regulations.

**Knowledge:** Knowledge or understanding can be defined as theoretical and practical perception on objects or subjects. It can be invisible knowledge such as skills or practical ability. Or it can also be visible such as theoretical understanding on objects. It can be in formality or system. Although there are variety of knowledge theory, standard definition of knowledge that is accepted by all academics is not available.

According to, Robert Reid, knowledge (1896). Thomas Jefferson Building, Washington, D.C. (See also: Epistemology), “The eventual demarcation of philosophy from science was made possible by the notion that philosophy's core was "theory of knowledge," a theory distinct from the sciences because it was their foundation... Without this idea of a "theory of knowledge," it is hard to imagine what "philosophy" could have been in the age of modern science.”

Further, he said that Knowledge is a familiarity with someone or something, which can include facts, information, descriptions, or skills acquired through experience or education. It can refer to the theoretical or practical understanding of a subject. It can be implicit (as with practical skill or expertise) or explicit (as with the theoretical understanding of a subject); it can be more or less formal or systematic. In philosophy, the study of knowledge is called epistemology; the philosopher Plato famously defined knowledge as "justified true belief." However, no single agreed upon definition of knowledge exists, though there are numerous theories to explain it. Knowledge acquisition involves complex cognitive processes: perception, communication, association and reasoning; while knowledge is also said to be related to the capacity of acknowledgment in human beings.

- (Dreyfus, 2004: 2) The Dreyfus brothers identified five stages at which the acquisition and also the application of skills are different; they call these “novice”, “advanced beginner”, “competent”, “proficient”, “expert”.

Management and educational services: Over the last decade, education is increasingly being seen as an avenue to success. Education and training have not only helped develop human capabilities, but have created social opportunities for those who until then had little access to them.

The management of educational services has become necessary, due to the fact that competition today has become so severe. Even the best of the students feel they need some professional help, not just in their studies, but in charting out their career plans. Parents are prepared to pay what is necessary, as they realise that it is an investment in their children's future. Tutorials and coaching classes for school students, for the Board exams have seen the maximum growth. Coaching classes are popular today because they are cheaper and more affordable than private tuitions.

Educational management consultancies have come up in a big way too. Today there are various types of consultancies and agencies, which provide information, guidance and counselling on various aspects. These range from career counselling, to preparing for scholarships or studying abroad.

Personal skills and qualities: Skill is capable of subjects in smoothly implementing one or series of actions based on its understanding (knowledge and experience) to achieve expected results.

These are important to employers, colleges, work based learning providers and universities. Many application forms now ask people to state their skills and qualities in addition to their qualifications and previous experience.

Professional capacity: Specialized capacity is defined as specific ability in given fields such as organizable ability, music perception, business ability, painting, mathermatic capacity. General capacity and specialized capacity have mutual relationship. General capacity is basis of developing specialized ability.

Five levels Professional capacity (Guskey, 2000a). Effective professional development evaluations require the collection and analysis of the five critical levels. With each succeeding level, the process of gathering evaluation information gets a bit more complex. And because each level builds on those that come before, success at one level is usually necessary for success at higher levels.

### **Five Levels of Professional Development Evaluation**

#### **1. Participants' Reactions**

2. Participants' Learning
3. Organization Support & Change
4. Participants' Use of New Knowledge and Skills
5. Student Learning Outcomes

Personal qualities that employers want:

Here are some personal qualities that employers typically rate highly:

- **Adaptability and flexibility:** Nearly half of employers in a recent survey gave a high rating to “openness to new ideas and concepts.” They also like candidates who can work independently or as part of a team, changing gears when required, whether multitasking or adapting working hours and locale.
- **Professionalism and work ethic:** Employers seek productive workers with positive work ethics who stick with challenges until they meet them.
- **Positive attitude and energy:** The last to be picked and promoted are candidates who show gloomy outlooks and emotional immaturity. Exhibit a sunny outlook and energetic, organized behavior.

Popular skills that employers want: (By Joyce Lain Kennedy)

A round up of several surveys suggests skills that employers often admire. The following list is representative but not comprehensive:

- **Effective communication:** Employers seek candidates who can listen to instructions and act on those instructions with minimal guidance. They want employees who speak, write, and listen effectively, organize their thoughts logically, and explain everything clearly.
- **Computer and technical literacy:** Almost all jobs now require an understanding, ranging from basic to advanced, of computer software, word processing, e-mail, spreadsheets, and Internet navigation.
- **Problem-solving/Creativity:** Employers always want people who can get them out of a pickle. Problem-solving ability can aid you with making transactions, processing data, formulating a vision, and reaching a resolution. Employers need the assurance that you can conquer job challenges by thinking critically and creatively.
- **Interpersonal abilities:** Relationship-building and relationship- management are high priorities with many employers. These skills confirm that a candidate can relate well to others, both co-workers and customers.
- **Teamwork skills:** The ability to work well with others while pursuing a common goal is a long-running favorite of employers. But so is the ability to work with minor supervision.
- **Diversity sensitivity:** In today’s world, cultural sensitivity and ability to build rapport with others in a multicultural environment is highly valued by employers.
- **Planning and organizing:** Workplace life requires prioritizing and organizing information. Employers value people who, metaphorically, dig a well before they’re thirsty.
- **Leadership and management:** Leadership consists of a strong sense of self, confidence, and a comprehensive knowledge of company goals. These are qualities that motivate and inspire, providing a solid foundation for teamwork.

Employers continue to look for assurances that you can in some way either make money for them or save money for them. Skills useful in saving money are universally desired, including by the nonprofit organizations.

Qualities & Skills Employers Look For:(by Rick Suttle, Demand Media)

Job candidates must have a number of qualities and skills to meet the demands of employers in the 21st century. Companies need employees who can contribute as soon as they are hired. These workers must be highly ethical and respectful of the multicultural differences in their co-workers, as companies are held to these high standards by shareholders and government agencies. If you possess and can demonstrate some of the qualities and skills desired by employers, you have a better chance of getting a job.

**Communication Skills:** Communication is the skill most highly desired by employers, according to Quintessential Careers. Communication skills include the ability to listen, write and speak effectively. For example, as a market research manager, you may meet with marketing and advertising managers to determine what information they need from customer surveys. You can then write questionnaires that help you obtain this information. Similarly, professionals must be able to write proposals, emails and reports that others can understand. And as a manager, you must be able to communicate with subordinates, peers and executives, and occasionally deliver one of those stellar presentations.

**Problem-Solving Skills:** Companies face many complex issues because of competition, changing technologies, consumer tastes and government regulations. Consequently, employees must have problem-solving skills to identify issues, devise reasonable alternatives and develop solutions for problems. For example, as a production manager, you might need to include additional nutritional information on food packages to meet new government regulations - and accomplish this by staying within your budget. Regardless of the field you're in, the business environment is constantly changing. And whether you're developing counter ads to deflect aggressive competitive advertising or creating a new high-tech product because yours is becoming obsolete, you will be constantly solving problems as an employee.

**Computer Skills:** Computer skills are essential for employees because practically everything these days involves computers. You use computers to announce meetings by email, write proposals, create project logs and reports and devise financial spreadsheets. You also use various software packages depending on your field. Sales reps and other employees who frequently travel use computers to stay linked to employers and deliver daily sales figures and other important information.

**Honesty:** Employers want to hire honest people. Honesty can be demonstrated by past actions. For example, you might have been responsible for your company's payroll, or handle lots of money as a restaurant manager. Some companies go to greater extremes to ensure employee honesty, mandating polygraph tests before they hire workers. Honest employees are crucial to a company's success, especially in the age of corporate scandals.

**Self-Motivated:** Hiring managers want self-motivated people who don't have to wait for the boss to tell them what to do. You are driven to complete tasks on your own. Bosses have many projects to complete by certain deadlines and can't always micromanage subordinates or they'd never get their own work done.

**Relevance and satisfaction:** (Filak & Sheldon, 2003). The relevance of job satisfaction and motivation are very crucial to the long-term growth of any (The level of response for each of the Bloom's taxonomy) Knowledge: count, define, describe, draw, find, identify, label, list, match, name, quote, recall, recite, sequence, tell write educational system around the world. They probably rank alongside the professional knowledge and skills, center competencies, educational resources and strategies as the veritable determinants of educational success and performance. Professional knowledge, skills and center competencies occur when one feels effective in one's behavior. In other words, professional knowledge, skills and competencies can be seen when one is taking on and mastering challenging tasks directed at educational success and performance.

**Skills:** Skills are the learned ability to carry out a task with pre-determined results often within a given amount of time, energy, or both. In other words the abilities that one possesses. Skills can often be divided into domain-general and domain-specific skills. For example, in the domain of work, some general skills would include time

management, teamwork and leadership, self-motivation and others, whereas domain-specific skills would be useful only for a certain job. Skill usually requires certain environmental stimuli and situations to assess the level of skill being shown and used.

People need a broad range of skills in order to contribute to a modern economy. A joint ASTD and U.S. Department of Labor study showed that through technology, the workplace is changing, and identified 16 basic skills that employees must have to be able to change with it. Labor skills, Life skills, People skills, Social skills, Soft skills, Hard.

Skills, Communication skills, Deskillling, Skills and Competences, skill acquisition, Game of skill, transferable skills analysis, online skill-based game.

- Dreyfus model of skill acquisition is a model of how students acquire skills through formal instruction and practicing.

This leads to five roles:

1. Novice: non-situational recollection, decomposed recognition, analytical decision, monitoring awareness
2. Competence: situational recollection, decomposed recognition, analytical decision, monitoring awareness
3. Proficiency: situational recollection, holistic recognition, analytical decision, monitoring awareness
4. Expertise: situational recollection, holistic recognition, intuitive decision, monitoring awareness
5. Mastery: situational recollection, holistic recognition, intuitive decision, absorbed awareness.

Social activities: social activity - activity considered appropriate on social occasions, group action - action taken by a group of people, association - the act of consorting.

### **Training program**

According to education dictionary issued by Encyclopedia Publishing House in 2001, definition of syllabus program is understood as “official documents regulate training goals, objectives, requirements, knowledge contents and skills, overall structure, teaching and learning schedule, practice plan annually. In addition the program also regulates ratio of body units, practical and theoretical knowledge, approach, method, facilities, certificate of merit, diploma, education and training level”.

According to Wentling (1993): 'The training program is an overall design for a training activity (training course) that said entire training content should indicate what can be expected in humans to learn after training, outline the procedures necessary to implement training contents, training methods and how to test, evaluate learning outcomes and all the ones that are arranged in a time expression closely. '

Tyler (1949) argues that: structured training program must have four basic parts:

1. Training Objectives
2. Training contents
3. Training methods or training processes
4. How to evaluate training results

On the basis of the general education program (or curriculum), it is regulated by the education authorities, educational institutions and organizations to develop training programs in detail. Detailed training program (or

Curriculum) is a detailed design process taught in a specific training courses that reflect the objectives, contents, structure, order and how to implement and assess teaching activities for the training of subject, topics, chapters, sections and lectures. Training program by the training facility was built on the basis of training programs approved by the competent authority.

Such that training programs or curriculum not only reflect the training contents, but also is a written or expressed overall design components of the training process, conditions, methods, procedures for, and evaluate training activities to achieve the training objectives.

Under the Vietnam Education Act 2005, educational program prescribed by Article 6, Chapter I: "The education goals of education, defined standards of knowledge, skills, scope and structure of the educational content, training methods and organizational forms of education, how to assess the educational outcomes for subjects in each class, each level of education or training level. "

The Framework for each sector training programs for collegial and university levels include the structure of the course content, length of training, the percentage of time allocation between disciplines, between theory and practice, and field trips. Based on the framework programs, colleges, universities determine their school's curriculum (Article 41 of the Education Act 2005).

According to the Vietnamese Law on Higher Education (2012, Article 36): The level of training colleges and universities include: goals, standards of knowledge and skills of students after graduation; training content, assessment methods for each subject and field of study, the level of training; ensure continuity requirements between the qualifications and other training programs.

- Training to meet the satisfaction of students and the requirements of employers.

The problem on "Training to meet student's satisfaction and requirements of the employer" is not new to higher education in Vietnam. In the meeting conduct for the school year 2009 - 2010 among rectors' universities & colleges and leaders of the Ministry of Education and Training, it was said that the "product" field of higher education did not meet the increasing demand of labor market and the key issues of higher education is "to improve the quality and accelerate the training for students' satisfaction and requirements of the employers"

The concept of "Training to meet the satisfaction of students and the requirements of employers" can be interpreted in two ways: first, the university must be properly trained professions that society needs with no extra training to avoid expenditure. Second, it can be trained to meet the satisfaction of students and the requirements of the employer for acceptance are qualified graduate students in order to meet the expectations of users.

For the higher education service to meet satisfaction of students and the requirements of employers, first of all, universities should coordinate with the Ministry of Education and Training in setting out a program with individual field of study and should not impose a common curriculum for all schools, thus, avoiding a lot of courses/subjects that do not meet the required curriculum.

An effort to meet the satisfaction of students and the requirements of employers actually takes effectively, in the Action Plan for the period 2011 - 2016, the Ministry of Education and Training emphasized the goal to 2015, all of the training in accordance with credit training system. In addition, the Ministry of Education and Training also set a target to perform a stratified University, in 2015 formed groups including: research-oriented universities, universities of career-oriented applications, and the community colleges. Since then, the training in university will be intensive to meet the needs of the recruitment agency, thus, avoiding the retraining further of professional after graduation.

### **Eight Levels:**

Level 1 Qualifications recognize basic knowledge and skills and the ability to apply learning with guidance or supervision. Learning at this level is about activities which mostly relate to everyday situations and may be linked to job competence.

Level 2 Qualifications recognize the ability to gain a good knowledge and understanding of the subject area of work or study, and to perform varied tasks with some guidance or supervision. Learning at this level involves building knowledge and/or skills in relation to the area of work or the subject area and is appropriate for many job roles.

Level 3 Qualifications recognize the ability to gain, and where relevant is applicable to a range of knowledge, skills and understanding. Learning at this level involves obtaining detailed knowledge and skills. It is appropriate for people wishing to go to university, people working independently, or in some areas supervising and training others in their field of work.

Level 4 Qualifications recognize specialist learning and involve detailed analysis of a high level of information and knowledge in an area of work or study. Learning at this level is appropriate for people working in technical and professional jobs, and/or managing and developing others. Level 4 qualifications are at a level equivalent to Certificates of Higher Education.

Level 5 Qualifications recognize the ability to increase the depth of knowledge and understanding of an area of work or study to enable the formulation of solutions and responses to complex problems and situations. Learning at this level involves the demonstration of high levels of knowledge, a high level of work expertise in job roles and competence in managing and training others. Qualifications at this level are appropriate for people working as higher grade technicians, professionals or managers. Level 5 qualifications are at a level equivalent to intermediate Higher Education qualifications such as Diplomas of Higher Education, Foundation and other degrees that do not typically provide access to postgraduate programs.

Level 6 Qualifications recognize a specialist high level knowledge of an area of work or study to enable the use of an individual's own ideas and research in response to complex problems and situations. Learning at this level involves the achievement of a high level of professional knowledge and is appropriate for people working as knowledge-based professionals or in professional management positions. Level 6 qualifications are at a level equivalent to Bachelor's degrees with honour, graduate certificates and graduate diplomas.

Level 7 Qualifications recognize highly developed and complex levels of knowledge which enable the development of an in-depth and original responses to complicated and unpredictable problems and situations. Learning at this level involves the demonstration of high level specialist professional knowledge and is appropriate for senior professionals and managers. Level 7 qualifications are at a level equivalent to Master's degrees, postgraduate certificates and postgraduate diplomas.

Level 8 Qualifications recognize leading experts or practitioners in a particular field. Learning at this level involves the development of new and creative approaches that extend or redefine existing knowledge or professional practice.

Work ability: Ilmarinen & Tuomi (2004), work ability may be understood as 'how good is the worker at present, in the near future, and his ability to do his/her work with respect to the work demands, health and mental resources'. This definition is based on a so called 'concept of work ability' according to which, work ability is the result of the interaction of the worker and his or her work. Work ability may also be described as the balance of the workers' resources and the work demands.

### **3. CONCLUSIONS**

According to the Ministry of Education and Training (Education and Training), currently there are 236 universities nationwide, including 50 IT training schools; Every year, about 50,000 IT students graduate.

However, the number of graduates compared with the needs of IT business development is not much. The growth rate of IT enterprises and job demand is huge, by 2020, 100 thousand qualified IT bachelors are required. However, in the survey of 50,000 IT bachelors, only 30% can work immediately and have the right job, the rest 70% have to retrain. Associate Professor, Dr. Hoang Minh Son, Rector of Hanoi University of Technology, said that the demand for human resources in recent years has increased by 47% per year, but IT human resources only increased by 8% per year. Meanwhile, the quality of training IT human resources has not met the demand with the rate of 72% working in graduation with lack of practical experience, 42% lack of teamwork skills ... Vice Chairman of News Association Studying in Ho Chi Minh City Fee Anh Tuan said that Vietnam has nearly one million employees working in the IT industry, but domestic IT training programs have not met development needs, especially training engineers. High Quality. Many businesses and recruitment units have an enrollment rate of about 10 to 15% of the total number of candidates. After graduation, IT human resources often have to retrain at least three months to meet the practical requirements. One of the shortcomings in IT training is that technology development is too fast, requiring skills of workers to change ... That poses a challenge that needs regular updating, improvement and improvement. diverse coordination in training and improving the quality of IT human resources.

Many education experts believe that the problem posed with schools needs to link with businesses to improve the quality of IT human resources. Schools need to renovate curriculum design stemming from the needs of the market with a spirit of service, not offering what it is. According to the Minister of Education and Training Phung Xuan Nha, from the reality of the market, schools need to design lifelong learning programs, change training methods in the direction of reducing academic knowledge, increasing students' travel. internship and practice in IT enterprises. Universities need to connect with businesses like the system of medical training schools linked to hospitals. The Ministry of Education and Training as well as related state management agencies are responsible for accompanying businesses and schools, advising the Government and the Prime Minister to adopt reasonable mechanisms and policies. The problem of connection between businesses and schools is not new, but needs to become the natural and personal needs of the parties. The school provides human resources; Enterprises consider the school as a partner or partner.

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