Examining Fresh Graduates' Perception of Employability in the Information Technology Industry in Vietnam

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Abstract

The purpose of this paper is to explore the perception of Information Technology (IT) fresh graduates on employability in Vietnam. The research is based on primary data from responses in in-depth interviews from 10 fresh graduates working in the IT industry for at least 3 months. A generic qualitative approach and the employability framework of Hillage & Pollard guide this research. Interview protocol is also provided for semi-structured interviews. The findings show a strong awareness of employability among fresh graduates in terms of the assets they own like knowledge, skill, attitudes; deployment; presentation; and context of the labor market. However, the findings also point out a huge area of knowledge and soft skills which need improvement to enhance graduates' employability. They are advanced IT knowledge, cross-sector knowledge, and a lot of soft skills such as presentation skill, communication skill, management skill, problem solving skill, logical and critical thinking skill, self-study skill, information search-skill, asking question skill, foreign language skill, and adaptation skill. The study provides valuable implications to employers, educators and new young employees in fresh graduates' employability enhancement by pointing out weak areas for improvement.

Keywords: Fresh graduates, Employability, Information Technology, Vietnam

INTRODUCTION

Employability is an issue drawing attention from not only recruiters but also higher education institutions, employees (Holmes, 2016, Jackson & Wilton, 2017). Moreover, Understanding graduate employability is a very important issue because there are different contexts for the issue. There are also different perspectives to look at employability: from companies' perspective, from graduates' perspective and from universities' perspective (Guilbert et al., 2016, Selvadurai, Choy, & Maros, 2012).

In many developing economies, intellectual capital is mobilized by governments through a stable and heavy investment in higher education (Hayden & Lam, 2006). People put their money and trust into higher education with hope that they will be made

employable and skilled to work in the industry closely linked with the major they have learnt.

Cameron, Dhakal, & Burgess (2017) pointed out a mismatch between skill sets and labor market needs, which leads to poor productivity and unemployment in Asia Pacific countries including Vietnam (Pham, 2013). Among important issues mentioned, Cameron, Dhakal, & Burgess (2017) also pointed out a necessity for a transformation in mindsets of young graduates in these nations. Moreover, in the research of human resource management in Vietnam, Nguyen, Teo, & Ho (2018) also pointed out a necessity to deploy country-specific human resource management approaches reflecting Vietnam's contextual values. This makes the research in Vietnam context is highly appreciated. Especially, with the generic qualitative approach used in this study, the explored findings can bring chances to contribute new ideas to the existing literature of The Vietnamese context.

Moreover, there have been calls for cooperation between HEIs and companies to improve employability of fresh graduates (Tran, 2016, Tran, 2014, Thang & Wongsurawat, 2016, Tien, 2018) because of the loose connection between organizations in charge of providing labor and companies using labor. Therefore, fresh graduates should be paid more attention.

IT industry demands more than just IT skills because many soft skills such as communication skills, interpersonal skills, managing yourself, attitude, aptitude, teamwork, cultural fit and so on (Stevens & Norman, 2016). Job-specific skills are important, but cognitive skills like problem solving and critical thinking, and behavioral skills are appreciated by Vietnamese employers (Bodewig & Badiani-Magnusson, 2014).

Statement of the problem

Weak employability has been pointed out by many scholars (Benson, Morgan, & Filippaios, 2014), which is due to loose connection and cooperation between educators and employers. There have been many investigations showing that the employment situation is becoming quite harsh and more serious (e.g. Ito, 2013) and even after they are recruited, it is unlikely that they can satisfy the demands and needs of their employers (Tran, 2015)

As far as employability skills are concerned, there have been many studies which pointed out a gap between the perceptions of students and the expectations of employers (Nguyen et al., 2005, Rosenberg, Heimler, & Morote, 2012). Although there has been evidence showing an impressive increase in achievements in Vietnamese graduates, a lack of employees with adequate skills is still a hinder for Vietnamese businesses (Bodewig & Badiani-Magnusson, 2014).

The problem is that education in Vietnamese universities is too general without any connection with workplace contexts and no focus on organizational cultures, demands and concerns (Tran, 2014, Collet, Hine, & Du Plessis, 2015). Therefore, for intensive-knowledge sector as IT industry, there are huge mismatches between what fresh graduates own and what employers expect. In IT industry, requirements of employers keep increasing because of quick changes in IT demands from customers and users. So, there is a serious problem in “readiness of IT or computer science graduates from the point of views of software industry.” (Almi, Rahman, Purusothaman, & Sulaiman, 2011, p542). In other words, there is a gap between the requirements of IT industry and graduates' readiness.

There are different people from different sides who are concerned with the problem. However, this research only focuses on employability from fresh graduates' perspective because fresh graduates are those who can take action to improve their own ability to

protect themselves in this changing world in this changing industry.

The purpose of this study is to explore the perception about employability of fresh graduates in IT industry in Vietnam. Specifically, the study aims to address the following research questions:

1. How do IT fresh graduates in Vietnam perceive their employability after several months of working
2. What kind of assets and obstacles IT fresh graduates in Vietnam mention as explaining factors for their employability?

LITERATURE REVIEW

Context of Employability research in Vietnam

Recently, Seven Asia Pacific countries including Australia, Singapore, Indonesia, Malaysia, Philippines, Taiwan and Vietnam are identified to be witnessing challenges in attracting and retaining employees with desired qualifications, skills and capabilities (Priksat et al., 2016).

In Vietnam, students have to complete 12 years of studying. At the age of 18, they finish high school and take an entrance exam to universities. Top universities are state-owned ones recruiting fresh graduates who gain high marks for their entrance exams. “Vietnamese HEIs are tasked with training an industry-ready workforce for an emerging market economy with a socialist orientation.” (Thang & Wongsurawat, 2016, p.147). However, curriculums of universities are out of date and traditional teacher-centered teaching style has been applied for so many years, which leads to a weak link between HEIs and industries (Tran, 2012). When talking about a vision in 2020 for HEIs in Vietnam, Hayden & Lam Thiep (2006) pointed out a mismatch between the labor force provided by higher education institutions and labor force required by employers, leading to an oversupply of poorly trained new young recruits. There are also arguments whether employability is the issue of personal employees or employers or problems of HEIs (Tran, 2015)

The traditional role of universities in Vietnam was to prepare graduates to take on a position in a centrally planned economy which required obedience rather than creativity. However, this has been no longer suitable, especially after the “Doi Moi” (Vuong, 2010) – the Vietnamese Government Reforms. Now the traditional product of universities is challenged by the requirements for a variety of skills from fresh graduates, posing obstacles against the employability of new young recruits (Tran, 2015). Moreover, universities are often criticized for the poor commitment of theirs to enhancing student employability assets. (Tran, 2014).

Particularly, the complaints about both IT graduates’ technical skill and foreign languages skills are becoming more and more severe. The number of HEIs training IT major has been an increase while the number of employable IT fresh graduates are still low. The main reason is “finding suitable employment opportunities have become an increasingly serious challenge for both the HEIs and their graduate students.” (Thang & Wongsurawat, p.147, 2016)

Key Concepts of Employability

Employability and its components

Employability is a term which is utilized in many various contexts with a wide range of meanings. Firstly, employability is defined as “a contested concept in terms of its use in

both theory and policy” by McQuaid & Lindsay, p.191, 2005). Secondly, It can be described as employees’ capacity to “acquire transferable competencies and individual capacities that enable them to adapt to, be innovative in and steer their own careers in a dynamic work environment.” (Botha & Coetzee, p.9, 2017). Thirdly, employability is also referred to as individuals’ ability to make transitions in labor market (Brown, Hesketh, & Williams, 2003, McQuaid & Lindsay, 2005). Making transitions in this case can be understood like when fresh graduates shift from academic period to working period in their life to start their working journey or when fresh graduates move from one company to another one.

Employability is the term to illustrate “the capability to gain initial employment, maintain employment and obtain new employment if required.” (Hillage & Pollard, p.1, 1998). This definition is used in this research because it considers the broader context of the issue of employability with not only attributes created before the working period of fresh graduates, but also the things they achieve during their career to contribute to their employability. Based on this broader view, employability can be viewed in the context of other issues such as moving into new employment in the labor market like moving from one job to another, so factors such as job search, labor demand. Moreover, the skills or personal attributes of narrow concept are also involved in this broader view.

Previous studies have identified a number of dimensions of employability. One of the common dimensions is work-readiness because employability goes beyond skills graduates need to go their jobs. Employability is affected by many factors such as professional identity, educational qualifications, labor markets and conditions, opportunities offered by employers (Rothwell & Arnold, 2007). According to Cavanagh, Burston, Southcombe, & Bartram (2015), work-readiness is illustrated in skills of writing, speaking, inquiry/research, critical thinking, creative problem solving and team work.

Another dimension is career decision making, career decision making is very important because it is true that getting a job is not difficult but maintaining the job to develop careers is more important. Especially for fresh graduates who have just begin their journey, it is more and more necessary to have good career decision making skill (Coetzee & Beukes, 2010, Zinser, 2003). Besides, skill enhancement dimension is what most scholars pay attention to because there are many skills which fresh graduates haven’t mastered have been proved too important to ignore. Without such kinds of skills, these graduates cannot maintain their jobs as well as develop their career (Bodewig & Badiani-Magnusson, 2014, Collet et al., 2015, Nghia, 2018b). Other dimensions such as work search or employment maintenance are also considered an integral part of employability.

When looking at employability, there are three perspectives that prior researchers have followed: from employers’ perspective, educators’ perspective and fresh graduates’ perspective. Ju, Pacha, Moore, & Zhang (2014) compared educators’ perspective and employers’ perspective on fresh graduates’ employability. Educators are those who are responsible for providing good quality labor force to employers while employers are those who offer jobs to graduates with certain requirements based on the requirements of labor market. Therefore, the match between two perspectives from educators and employers is very important (Deepa & Seth, 2013, Husain, Mokhtar, Ahmad, & Mustapha, 2010). Perspectives of fresh graduates are also important because they are main actors who contribute to their employability (Singh & Singh, 2017). And with this thesis, I explore employability from fresh graduates’ perspective to make the picture more complete.

Pool & Sewell (2007) proposed a simplified model of key factors contributing to the employees’ employability. The model which is named CareerEDGE/CEDGE was proposed to “provide a clear, practical model that would allow this multi-faceted concept to be

explained easily and could be used as a framework for working with students to develop their employability.” (Pool, p.318, 2016). These factors are called CEDGE standing for career, experience, degree, generic skills and emotional intelligence. Based on this simple model, the five factors after being reflected and evaluated will contribute to self-efficacy, self-confidence and self-esteem, which are the key to the employability.

Figure 2. 1. CEDGE model – the key to employability (Source: Pool & Sewell, 2007)

With a conceptual model of graduate attributes, Bridgstock (2009) argues that employability involves far more than possession of the generic skills attributes and acknowledges the importance of self-management and career-building skills to lifelong career management and enhanced employability. Based on this model, self-management and career-building skills are underpinning traits and dispositions of employability because they are the core in the acquisition, display and use of discipline-specific skills and generic skills.

Career management

International management of work, learning and other aspects of life
Through reflective, evaluative and decision making processes

Career management skills

Figure 2. 2. The Conceptual model of graduate attributes

(Source: Bridgstock, 2009)

The problem with the two above models is that they only focus on job-specific skills, soft skills and groups of skills needed while context in which fresh graduates use their skills is ignored. That is the reason why we selected the model of Hillage and Pollard (1998) as a guide for the study.

Research Gaps

Regarding employability research, there are three perspectives which are societal perspective, company perspective and individual perspective (Thijssen, Van Der Heijden, & Rocco, 2008). However, in Vietnam, there are some studies regarding employability mostly through societal and company perspectives with a strong focus on the improvement of curriculum in high education institutions (Thang & Wongsurawat, 2016, Tran, 2012, Tran, 2014, Tran, 2015, Tran, 2016, Nghia, 2018b). ***In this paper, the author wants to explore employability from fresh graduates' perception.***

Besides, there are personal factors leading to failure to get a job: lack of skills, lack of supportive infrastructure etc. Therefore, a broader approach should be used to address employability (McQuaid & Lindsay, 2005). Therefore, ***fresh graduates' perception is explored to find out more about attributes and barriers contributing to their employability.***

Most studies in Vietnam context look at employability in the studying period of students when they are still studying in university (Cavanagh, Burston, Southcombe, & Bartram, 2015, Bodewig & Badiani-Magnusson, 2014, Nghia, 2018b, Álvarez-González, López-Miguens, & Caballero, 2017, Tran, 2016, Feldmann, 2016). Meanwhile, in this study, fresh graduates' employability perception is explored after new young recruits have done their job for at least 3 months. ***The three above gaps explain why the author wants to explore employability from fresh graduates' perception in IT industry in Vietnam.***

Hillage and Pollard's model of employability

Hillage & Pollard (1998) put forward a set of components of employability including assets, deployment, presentation and context. The employability in this model can be summarised as the following table:

Table 1.1. Hillage and Pollard's employability Components

Employability	Factors	
Assets	<ul style="list-style-type: none"> - Knowledge - Skills - Attitudes 	
Deployment	<ul style="list-style-type: none"> - Career management skills 	<ul style="list-style-type: none"> - Self-awareness (diagnosing occupational interests and abilities) - Opportunity awareness (knowing what work opportunities exist and their entry requirements such as labor market knowledge) - Decision-making skills (to develop a strategy of getting from where you are to where you want to be) - Transition skills
	job search skills	access to formal and informal networks
	strategic approach	being adaptable to labor market developments and realistic about labor market opportunities, including willingness to be occupationally and locationally mobile
Presentations (Ability to demonstrate "employability" assets and present them to the market in an accessible way)	<ul style="list-style-type: none"> - Presentations of CVs including record of achievements - Qualifications (academic and vocational) - References and testimonies - Interview techniques - Work experience/track record 	

Employability	Factors	
Context	- Personal circumstances	- Caring responsibilities - Disabilities - Household status
	- External circumstances	- Macro-economic demand - Pattern and level of job opening in labor market - Labor market regulation and market rules - Employers recruitment and selection behaviour

(Source: Hillage & Pollard, 1998)

There are two reasons for choosing this employability model. This is very first model of employability. In Vietnam, the IT industry is emerging with the effects of 4.0 technology, which makes it still suitable to use this model (Pfeiffer, 2015). Secondly, with the focus of context, this model is efficient enough to meet calls of recent research on HRM (Nguyen, Teo, & Ho, 2018).

Moreover, there are quite four areas in the models for the author to explore the perception of fresh graduates' perception of employability. Based on this model, the employability of an individual counts on four aspects: assets, deployment, presentations, and context. Among those aspects, the aspect of context is very interesting because it is the factor that is closely linked with both almost all aspects of life and with employability (Clarke, 2008, Arcidiacono, 2015, Tomlinson, 2017, Harten, 2016).

In the model, the **inter-relationship** between **assets** and **deployment** is pointed out. There is a level at which employees are aware of their skills, knowledge, attitudes and its link to effects of the available recruitment opportunities on their willingness to take up some training or activities to improve their skills.

The third aspect is **presentation** which means the ability of employees in showing their employability assets by presenting them the market in an accessible way. They can use CV, qualifications, references and testimonies, interview techniques and work experience while **context** depicts in terms of both *personal circumstances* and *external factors*.

METHODOLOGY

Research Design

The study employed a qualitative research design which is suitable as a method to explore and understand things like a phenomenon, a process, or the perspective by (Caelli, Ray, & Mill, 2003). Qualitative data was collected for the authors to get understanding of fresh graduates' perceptions of employability. One-on-one interviews were appropriate because this method allowed the author to use semi-structured interviews and open-ended questions to trigger interviewees' thoughts and opinion (John W. Creswell, 2014). Each

interview lasted for approximately forty-five minutes.

Sample

Qualitative data was collected using convenience sampling to understand the perception of IT fresh graduates in Vietnam better because it brings advantages when it is impossible for randomization to be applied and there is a limitation of resources, time and workforce (Wu Suen, Huang, & Lee, 2014). Besides, the adequacy of sampling is reached when saturation has been reached. This means that the depth of information is reached (Bowen, 2008). Data are collected until nothing surprising or new is generated or until there are fewer surprising things and emerging patterns, which is when saturation is reached (Green & Thorogood, 2018 Bauer & Gaskell, 2000). Therefore, in this study, at any point of interview process, if it seemed that no new patterns of information or no new information were found, the author would end the interview.

The target population from which data for this study was derived was from IT industry. These individuals were fresh graduates who have been working in IT industry for more than 3 month of internship period.

A brief oral explanation of the study and other terms used in the interview was delivered to participants before the interviews and participants were given opportunities to ask further questions before and after the interviews. Participants signed in Consent Form and were informed that they could withdraw from the study at any time during the interview process. The interviews were conducted in Vietnamese and the interviews were recorded and transcribed and translated into English. The convenient sampling method was deployed and there were 3 female participants and 7 male participants in the survey. All the participants have the experience of 3 months to 1.5 years. They have graduated from a variety of universities in Hanoi ranging from top universities to low-quality universities in Hanoi with the major of Information Technology. They are 1 tester, 1 fresher, 7 developers and 1 engineer in different private companies, joint stock companies and corporations in Hanoi now.

Data collection method and data collection procedures

A three-part interview protocol was developed by the author was used to collect data from participants based on the protocol rule of (John W. Creswell, 2014). The interview protocol for this semi-structured interview consists of open-questions that serve to elicit responses. The interview protocol includes the following components: a heading (date, place, interviewer, interviewee), instructions for interviewer to follow to reach standard procedures, and three parts of questions. The first question part of the interview protocol was named initial questions including ice-breaker questions about educational level and other easy issues to make interviewees feel relaxed while providing background information for the research data. The second part of the interview protocol was named main questions. The questions in this part were aimed at exploring the perception of fresh graduates in IT industry in Vietnam about their employability regarding four aspects of assets, deployment, presentations and context. The last part of questions was named ending questions. The aim of this part was to invite interviewees to tell more about their opinions, ask their questions if they have any.

Pilot interviews arranged for two experts and a senior IT graduate to address the face validity of the interview questionnaires. The purpose was to have more chances to revise, edit and change interview questions to be more effective. The interview questions were improved after the three mock interviews before being used to ask participants.

All data from the one-on-one interviews was collected by sticking to the following

steps (Moustakas, 1994):

1. The researcher developed a set of questions or topics to guide the interview process
2. The researcher conducted and recorded a 45-minute one-on-one interview that focused on the main topic.

Regarding individual anonymity, names of the participants are kept confidentially.

Data analysis and interpretation procedures

In this qualitative research, raw data was collected in terms of audio taped interviews and transcripts of the interviews. After that, data was organized and prepared for analysis by using **excel files with tables**, which was followed by the reading of all data by the researcher. The next step was coding the data which was done by putting the data into different themes and descriptions. The last two steps were interrelating themes/descriptions and interpreting themes/descriptions from which findings were presented with necessary implications.

DATA COLLECTION, DISCUSSION, FINDINGS AND RECOMMENDATIONS

Vietnamese fresh graduates' perception of employability after working for several months in IT industry

Knowledge: Basic, advanced, and cross-sector IT knowledge

Basic technical knowledge is the first thing which comes to the mind of fresh graduates because of its importance so that they can learn very quickly and understand things easily and pass a test of basic IT knowledge for fresh graduates so as to be selected for any interviews. *Advanced knowledge* is not a must to learn deeply into what they need to use. *Cross-sector knowledge* is very essential because it can become a barrier or a booster for fresh graduates' performance.

"what we need is base knowledge about programming" (P.1)

"I am designing pieces of accounting software, so I need a deep understanding of accounting." (P.4)

Soft Skills: There are many soft skills are pointed out based on the perception of fresh graduates.

Answering interview question skill help students show off what candidates have (their assets) to meet what employers really need. Besides, *Skill in doing test* is given as a criterion contributing to fresh graduates' employability. This skill helps them to overcome the very first step in the recruiting process of employers. *Job Search Skill* is important for fresh graduates to find one with good environment, good perks and policies so that they do not have to quit their jobs quickly.

"However, doing test well, perform well in the interview and having the ability to work well are more important." (P.6)

"I need to find employers who can create the best conditions for me to work." (P.3)

Logical and critical thinking skill is considered to be the most important, even more important than basic IT knowledge **because** basic IT knowledge is only useful if it is

accompanied with logical and critical thinking so that fresh graduates can understand well what need to be done to complete assigned tasks. *Self-studying skill* is needed in IT industry. The main reason is that there are always new things arising in IT industry, which makes it vital for fresh graduates update new things every day by self-learning both offline and online. *Information-searching skill* complements and goes with self-studying skill because it is a tool to self-study.

“The most important thing is logical thinking and self-study skill. When we upgrade a program language, commands are changed, so we need to self-study to update to catch up with new high-tech changes.” (P.1)

Communication skill contributes to answering well in interviews and is an effective tool for fresh graduates communicate with other co-workers in the department, ask them questions and consult them to improve their work performance.

“First is expertise, followed by attitudes and communication skills.” (P.9)

Asking question skill plays a very important roles in doing tasks smoothly because those who have just graduated from universities lack experience and have to task a lot of questions. However, not all new young employees know how to ask question effectively. For example, developers of accounting programs have to ask business analysts and team leaders a lot of questions related to accounting rules and accounting calculations so that they manage to find out mistakes and correct them. Being good at this skill helps them to save time and work more effectively.

“I have to meet business analysts in the company to ask a lot, which is very time-consuming.” (P.4)

Foreign languages skills are becoming more and more important to fresh graduates because of globalization. English has been a popular language so far, but Japanese emerges to be as important as English due to more cooperation between Vietnamese enterprises with Japanese ones.

“... attitudes towards work need to be good with good body language and spoken language, and foreign languages, including English and Japanese” (P.7)

Skill to work under pressure is given as a need for fresh graduates to work in IT industry because they have to work from 8 to 12 hours a day. Sometimes they have to work non-stop with harsh focus on correcting mistakes of products. So, working under pressure seems to be the typical attribute of fresh graduates in IT industry in particular and all IT employees in general.

“My ability to work under pressure is highly evaluated by my boss.” (P.4)

Adaptation skill is needed for the transition period of new young employees. They have just left universities and become worker, so they have a transition from academic life to working life. Some of them struggle with this transition, so adaptation skill can increase their employability. Adaptation skills can be strengthened by *socializing skills* and *communication skill*.

“After that, we will show our internship experience like when doing internship, we were good at socializing, adapting well to the new working environment” (P.6)

Teamwork skill improves fresh graduates' employability because in IT field, since they were students, they had to work in teams for most projects and subjects at school.

When become interns of companies, these new young staff also have to work in teams to run projects. Therefore, this is a skill closely related to their career. That is the reason why this is a skill that employers look for.

"During 4 years, most of the subjects I have learnt required me to work in teams...We mainly gained benefits from teamwork." (P.4)

Management skill is needed for fresh graduates to manage time for tasks they have to do, and later when they are promoted to team leader position, they have to manage personal in their teams.

"At the moment, I have to be in charge of many tasks, so I have to work under pressure and face difficulties in managing time" (P.5)

Attitudes

Attitudes is the thing that all fresh graduates are aware of because this criterion seems to be the key to all issues. First of all, with good attitudes, new young employees can show how eager and willing they are when learning new things; understand things and absorb knowledge; be proactive in studying and working. They can perform beyond the requirement of employers and have better chance for cooperation and development.

"... When having good attitudes towards the work, I will be proactive to do the tasks, and investigate deeply, not just do what my boss requires me to do. That is the thing that employers expect." (P.3)

CV and prizes

CV is the place where employees can illustrate all assets they possess including internship experience or experience they got in projects at university. That is the reason why CV is listed as a factor in fresh graduates' perception of employability. Besides, *getting prizes* in IT competitions locally and internationally is also highly evaluated by employers. Those with prizes will get job offers easily.

"... a CV can be written in flexible ways as long as it illustrates basic information and needed skills for the job." (P.10)

"Students with national prizes, international prizes in IT will be offered shorter period of internship, around only from 1 to 2 weeks." (P.4)

Internship experience

Internship experience is a must in IT industry. Fresh graduates need to attend an internship period before they are accepted as permanent staff of companies, in both small-size and big-size companies. Moreover, those with internship experience will find more chances to be invited to attend interviews and more opportunities to get a job offer.

"Besides, we can persuade them by program languages we have learnt or doing the internship in that company." (P.2)

Personal characteristics

Confidence and Honesty, creativity and activeness are listed as important characteristics which persuade HR managers to recruit new graduates even when they are short of experience and advanced IT knowledge.

"I think confidence is important...being designers requires a lot of creativity" (P.9)

Characteristics of IT labor market in Vietnam

A shortage of qualified IT employee is an obvious issue that all participants can feel in IT industry in Vietnam. Although the number of IT new graduates each year is very high, many of them do not want to work soon, others cannot meet the requirements of companies. *Internship period* is the typical activity of current IT fresh graduates. Even when students do not choose to become interns while studying at university, the position offered to them when they have just graduated is still an intern. *Employment of companies* in IT industry at the moment is quite various. They invest time in coming to university campuses to take part in job fairs, open days to introduce to students the information of their companies. Sometimes, companies cooperate with universities to place an order of a specific number of graduates with specialized requirements and specifications. Therefore, it is totally easy for new graduates to get access to information related to the jobs they want to apply for.

“Recruiters in IT industry need applicants due to a shortage of IT workers...IT employees need skills to work so only using what is taught at universities is of course not efficient. When you haven’t done internship anywhere, the job you can get is only intern.” (P10).

Basic IT knowledge is the thing most new graduates have. Therefore, some companies tend to choose students graduating from famous universities, so fresh graduates from prestigious universities in the country find it easier to get accepted than other from private and small universities.

“It’s true that employers now pay more attention to good universities.” (P.1)

Quality of courses at university

Huge Workload at university trains students to work under pressure, raise their awareness of the role of logical and critical thinking in their future job in IT industry with the dizzy changes of this sector. *Additionally*, workload and requirements of courses at universities require students to spend most of their time working in teams. This helps to boost their skill in working in teams.

“Universities also create chances for me to train myself to work under pressure and self-study well.” (P.5)

Basic IT knowledge and theories taught at university is various and covers many aspects in IT industry. *However*, advanced and cross-sector knowledge is not taught at universities. *Effectiveness* of soft skill courses at IT universities is quite low. Students learn many soft skill courses such as presentation skills, communication skills, management skills, communication skills, problem-solving skills. However, students have to learn online all theories related to these skills, and then they take written tests to get 50% of mark for passing the courses. This way of learning and teaching does not bring much effectiveness. Not all universities have practice rooms where students can come exchange knowledge and experience and receive instruction from senior students about possible positions which they can apply for in the future such as testers, developers, engineers, freshers and so on. Moreover, *sizes of classes* at universities in Vietnam in general and in IT universities in Vietnam in particular are very huge. There are about 80 students each class. So sometime, this high number has bad effects on quality of teaching and studying.

“I learnt presentation skills at university, but it was not effective because there were 80 students in my class so, the quality of the class was not high.” (P.8)

Many students have to take part in *extra courses outside universities* to improve their

employability. Courses they take part in are English courses, self-study courses, web designing courses which are hold both offline and online. However, not all students have money and conditions to take courses like these. Some self-study on youtube.com or google, but the problem is sometimes they do not have clear orientation in their mind, so self-studying online like this does not bring much effectiveness.

"I took a course at IT Plus in 6 months. It was about website designing. Now it is the emergence of website designing in IT industry. So there are a lot of opportunities for website designers to get a job." (P.8)

Decision about career choice

Choosing positions such as developers, testers and so on depends on students' interest and feeling. For example, they choose to become developers because they feel that their characteristics are suitable for the job. Moreover, fresh graduates choose to work for one position because they have experienced internship period, they find it suitable for them to continue working in current positions. They do not spend too much time on the process of deciding which job to do, they do internship as a trial and they will decide their job after internship period.

"I only managed to answer some of their questions, but I was still accepted as an internship. After intern period, I didn't have to take part in interview, I was accepted as a permanent staff." (P.4)

Obstacles face new IT graduates

Mismatches in fresh graduates' perception before and after doing the job bring them some difficulties. *Getting high marks* at university was considered to be enough for working, which turns out to be quite wrong when students go to work. Having ability to work is built by a combination of many things such as putting knowledge into practice, working habit, working behavior, socializing. And their ability to work needs improving all the time to meet the changing demands of society and of the sector.

"When I was a student, I thought getting high mark was very important for students like us. However, when taking part in interviews and after working here for several months, I found out that getting high marks only helped me to have nice CV. However, doing test well, perform well in the interview and having the ability to work well are more important." (P.6)

The old teacher-focused education in Vietnam sometimes make it boring for students to learn, and some of them may think that basic IT subjects are unnecessary, and they ignore these subjects. However, when going to work, they realize that base knowledge they have learnt at university is the key to any advanced knowledge and is lever for any improvement they want to have. Besides, *self-studying without clear orientation* is a huge problem because learning without clear intention makes it hard for fresh graduates to remember. *Lack of orientation* demotivates new young employees.

"I am not clear about the development plan that I want, I do not know what I want...I haven't had long-term plan." (P.7)

Advanced IT knowledge in their own working field such as ability in programming skills based on certain system and server, international certificate, or foreign languages: Japanese first and then English. New graduates know a lot of *programming languages*, but they do not know well any specific one. However, at work, they only use one specific programming language, but they need to use it professionally and well. For example, for

some companies, they only use Visual basic while at school they learn C#, PHP, Node Js ect.

Cross-sector knowledge is the thing fresh graduates do not have. For example, they are accounting program developers, and they do not have knowledge of accounting rules and accounting calculations. So, they have to ask business analysts a lot of questions and learn a lot so that they can correct mistakes of software and improve accounting software. It is sometime very time-consuming.

With weaknesses of soft skill courses at universities, many new young employees in IT industry lack *self-study skill, reading material skill, logical thinking skill, presentation skill, even communication skill, job searching skills*.

Regarding professional and business contacts, most fresh graduates haven't used them at work, and they think in the future, they may use them. It means that, they do not communicate much for their future development, especially those outside their companies.

Adaptation ability is weak, so students find it hard to get used to a new environment because they have just dealt with a transition from being a student to being a full-time employee. So, they feel stressful, especially for those who work in companies requiring high security and secrets of software, fresh graduates find it hard to get used to such kind of working environment.

Working in big companies, new graduates do not have an overview of the whole process because they are just in charge of a small part in the whole process. This makes new graduates feel worried and bored because they do not have chances to broaden their view and experience horizontally.

Multi-taking in small companies is a factor making fresh graduates stressful because they cannot manage their time effectively. A lack of workforce leads to multi-tasking of staff. However, new young employees have to adapt to a new working environment and learn main tasks and they feel stressful.

Findings

Fresh graduates' perception of employability

Fresh graduates have good awareness of employability. In their mind, employability is a combination of **knowledge, skills and attitudes** (Hillage & Pollard, 1998). In details, knowledge is divided into **basic** IT knowledge and **advanced** IT knowledge, cross-sector knowledge. Skills include a set of skills: **skills needed before getting a job offer**: job-search skill, answering interview question skill, test doing skill; **skills needed during doing the job to maintain and develop the job**: logical and critical thinking skill, self-studying skill, information-searching skill, asking question skill, foreign language skill, skill to concentrate and working under pressure, adaptation skill, communication skill, and teamwork skill, management skill (Collet et al., 2015). **Attitudes** sometimes are even more important than skills and knowledge, because attitudes have effect on how fresh graduates learn, how successfully they use their skills and knowledge and how successfully they improve their skills and knowledge. Therefore, attitudes is the most influencing factor (Artess; Mellors-Bourne, Robin; Hooley, 2018).

Besides knowledge, skills, and attitudes, employability also includes other components such as **CV, prizes, internship experience and good personal characteristics**. CV is considered as a tool for fresh graduates to show that what they

have suit with what employers need (Rothwell & Charleston, 2013). IT field is a field which requires a lot of creativity, so having prizes in IT competition is highly evaluated by employers. Internship experience is very valuable because there have been changes and new things arising in IT industry, therefore in order to fulfil IT vacancies, the first thing fresh graduates have to get is internship experience. If they do not have internship experience, a vacancy for them then is internship position (Shoenfelt, Stone, & Kottke, 2013 Jackling & Natoli, 2015). Finally, with special characteristics of IT industry it is necessary for new graduates to have confidence, honesty, creativity and activeness if they want to work in IT industry (Bates & Phelan, 2002).

Fresh graduates' assets and obstacles

Table 1. 2. IT Fresh graduates' assets and obstacles

		A	O			A	O
Knowledge	Basic IT knowledge	✓		Skills	Question asking skill		✗
	Advanced IT knowledge		✗		Foreign language skill (Japanese, English)		✗
	Cross-sector knowledge		✗		Adaptation skill		✗
Skills	Team work skill	✓			Orientation		✗
	Working under pressure	✓		Career management skill	Diagnosing occupational interest and ability		✗
	Job-searching skills	✓			Transition management		✗
	Doing test skill	✓		Presentation	CV, qualifications, interviews, references	✓	
	Logical and critical thinking skill		✗	Context	Personal circumstances	✓	
	Problem-solving skill		✗		External circumstances – labor market	✓	
	Presentation skill		✗		Fame of universities		✗
	Communication skill		✗	Attitudes	Willingness to learn	✓	
	Time-management skill		✗		Willingness to get a job		✗
	Self-study skill		✗	A: Assets O: Obstacles			
	Information searching skill		✗				

(Source: interview results, 2019)

As can be seen from the table, obstacles outweigh assets, which bring them many difficulties. Most of the knowledge IT fresh graduates own is basic knowledge which needs to be compensated with advanced IT knowledge and cross-sector knowledge. Besides, there is also a dearth of skills such as cognitive skills, academic skills or soft skills (Thang & Wongsurawat, 2016). Without clear orientation and good adaptation skills make fresh graduates encounter many difficulties because self-studying does not bring much benefits when they do not know why they have to learn or what they learn for. Being weak at career management skills prevent IT fresh graduates from finding suitable and sustainable jobs which they can contribute to for a long period of time. Moreover, it is interesting that fame of universities also affect the employability of fresh graduates in IT industry, which is every

typical feature of Vietnamese labor market. The poor attitude of not wanting to work when graduating makes things more serious, especially when labor market really needs people to fill in vacancies.

Recommendations

Contribution to the framework

In the framework proposed by Hillage & Pollard (1998), there are 4 main components: **assets, deployment, presentation and context**. Regarding **assets**, knowledge, skill, attitudes are the valuable assets. However, it would be better if these things are classified into more details into basic knowledge, advanced knowledge, cross-sector knowledge. The main reason is that, basic IT knowledge is a must. However, if there is an absence of advanced knowledge and cross-sector knowledge, employees cannot do their job well. Cross-sector knowledge is an issue arising from data collected from interviews. For example, an IT fresh graduate chooses to work as an accounting software developer needs to have a deep understanding of accounting knowledge to complete his/her work well.

Moreover, some factors are absent from the framework such as prizes and personal characteristics. Prizes symbolize for academic achievements when fresh graduates were at universities. Personal characteristics are very important because skills, and knowledge can be trained while personal characteristics are not (Civelli, 1998, Forrier & Sels, 2003). Therefore, **presentation** area of the framework should be added factors such as prizes/academic achievements besides CV, interviews etc.. while **context** component needs to involve personal characteristics.

Recommendations for fresh graduates

Fresh graduates should identify the newest trend and newest programming language used in their companies. After that, they should learn online or offline to deepen their knowledge. Moreover, they need to improve their cross-sector knowledge so that when developing programs, they have enough knowledge like accounting rules and calculation when developing accounting programs.

Regarding assets and deployment, fresh graduates should take part in many job interviews. As a result, they know more about expectations of companies, required knowledge, skills. Besides, fresh graduates should improve making-decision skills and job-search skills by investigating information online, through friends, and making informed decisions.

Fresh graduates should take part in review meetings of companies with positive attitudes. Beside review meeting in companies, fresh graduates can self-evaluate to see which skills they are bad at. The best way to deal with this is searching online, asking senior staff, asking friends, or taking courses. At present, fresh graduates lack a lot of soft skills such as logical and critical thinking skill, self-studying skill, information-searching skill etc. It is impossible for fresh graduates to improve all of their skills at once. They need to set a priority and solve one by one. Moreover, new graduates can take part in some courses to get some international certificates to broaden their minds and knowledge.

Last, fresh graduates should spend time taking part in IT seminars and workshop to update their knowledge and IT trends; broaden their network. By doing this, they can also take full advantage of their professional contact and business contact to develop their career.

Recommendations for universities

Universities should put first priority to improve qualities of teaching courses so that students can learn practical skills before going to work. For example, universities can invite staff/leaders/managers of IT companies to teach some modules at universities. Secondly, universities should update curriculum so that updated knowledge is taught, and IT fresh graduates have access to new and trendy knowledge for their first work. For subjects such as foreign languages or soft skills, face-to-face classes are needed. Turning to foreign languages, Japanese should be a subject of their curriculum to meet the emerging demand of the market. Moreover, universities should also reduce the size of class from 80 to around 40 so that students can have more interactions, lecturers' attention and better higher quality.

+ Students have to take extra courses in some IT centers outside campus. However, it would be better if universities can offer these extra courses on campus so that students can consider taking these courses based on their own interests and orientations.

Recommendations for companies

Companies should recruit from June to August when students finish their last period at university and graduate from university. In order to reach students, companies had better send recruiting information into the mail system of universities with email addresses ending edu.vn. Furthermore, companies should cooperate with universities to lengthen internship period while universities should have stricter control on students' internship activities. The purpose of this is to bring better quality for internship period. Students have enough time to learn and figure out how working environment is in reality. Besides job fairs, open days, companies can hold conferences and workshops or competitions at universities to increase the interaction between companies and students.

When new young recruits start working in companies, companies should organize some first orientation lessons. Companies' experts are invited to come and share with new recruits differences between practical working environment and studying environment. Finally, companies can also prepare and print a document such as working manual to show fresh graduates what they need to learn, what they need to read, what are their daily tasks.

Limitations and further study

The limitation of the research is that only determinants from individual aspects were considered in the research and the sample was also limited to one industry that is IT industry and to one country, in Vietnam. However, the research brings valuable implications for not only students, but also educators and employers in the areas of employability enhancement. In order to get more information, future research can focus on comparing employability from two angles from fresh graduates and employers or even comparison among three angles from fresh graduates, employers and educators to have more comprehensive view of employability in Vietnam.

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