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# **Employment issues among Malaysian information and communication technology (ICT) graduates: A case study**

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**In the 21st Century, there has been a growing concern about the role of higher education institution and how well they are satisfying the employers' needs. Malaysian Prime Minister mentioned that only 23% of the workforce is highly skilled in year 2010. This percentage is much lower compared to other developed countries. It was stressed that, there is a need to improve the composition of highly skilled workers to at least 37% by 2015, to become a developed nation. The purpose of this paper is to highlight the causes of unemployment among ICT graduates in Malaysia and the need for changes in the curriculum. Data were collected based on quantitative and qualitative study. Questionnaires were used to gather information from 296 current undergraduate students and 248 graduated students. These students are from public University in Malaysia. Besides distributing questionnaires, short interviews were also carried out. This paper concludes that the higher education institutions need to reengineer their curriculum in order to keep them updated in-line with employers need in the job market.**

**Key words:** Employment, higher education institution, curriculum.

## **INTRODUCTION**

Recent HEI graduates from both developed and developing countries have experienced a great deal of difficulty in finding jobs. Today's global environment in general and the universities in particular face growing pressures that will further strain their capabilities and restrain their ability to meet growing stakeholder demands. As we enter the 21st Century, there is a great deal of discussion in the business and education sector about the type of skills our youth need to acquire to survive and flourish in this century. The current higher education institutions (HEI) model of pedagogy for ICT courses, which is at the heart of the modern university, is becoming obsolete. With globalization and rapid technological advances, the job market has become more mobile and competitive than ever. As a discipline,

ICT always changes with rapid advances in technology, shifting job descriptions effects job success in the field. The ICT graduates should possess the required skills and training by their HEI to perform well at the entry-level position and to have a basis for continued career growth as a professional. Education is the driving force of a country's development.

However, preparing the students to meet the challenges of the future depends on the HEI curriculum. It is a vital part of HEI's mission. In order to deal with the cutting edge competition, the HEI has to adopt new challenges in search for excellence. In 21st Century, the employers are looking for job-seekers with the talented competencies and skills ability to learn and think freely, have analytical thinking and problem solving, creativity, communication teamwork and ability to work within various groups. Therefore, HEI should provide the accurate knowledge, skills and expertise students needed to succeed in work. One of the main objectives of Malaysian Ministry of Higher Education is to produce

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competent graduates to fulfill national and international manpower needs with 75% of the graduates employed in their relevant fields within six months within their graduation (The Star, 2011).

### Higher education institution

HEI are places where people go to reinforce their employability and to enhance their competitiveness in the labor market (Kazi, 2010; Yogeswaran, 2005). Recent HEI graduates from both developed and developing countries have experienced a great deal of difficulty in finding jobs. This phenomenon is also seen in Malaysia (Salas-Velasco, 2007; Bai, 2006; Kim and Lee, 2006). Malaysian education is overseen by two government ministries namely the Ministry of Education for matters up to the secondary level and the Ministry of Higher Education for tertiary education. Malaysian HEI functions as the storehouses of knowledge which produce the nation's trained workforce. So, HEI should be efficient as well as capable of fulfilling employment needs. According to Malaysian economic analysts, every increment of RM29.15 million in this country's gross domestic product (GDP) can only provide about 1,000 work opportunities. As much as 80 times more of this value is required to provide about 80,000 job opportunities in order to overcome the current unemployment problem.

### Employability

In recent years, many countries including Malaysia have reported a rise in graduate unemployment. According to a report released by Ministry of Higher Education on the statistics of employment among graduates in 2009, out of 155278 graduates, only 45% were employed. This is supported with the fact that among the total labour force of 12576400, 3.4% are unemployed (Statistics of Labour force Malaysia, 2011). The irony is that both the unemployment rate among the Malaysian ICT graduates and the rate of importing foreign workers with ICT qualifications are increasing. Based on the statistics outcome of Ministry of Higher Education on the reasons of unemployment among graduates in 2009, it is obvious that majority of the unemployed graduates are looking for jobs but could not get one. Thus, the issue arise here is the factors leading to the decrease in demand for these graduates.

### MATERIALS AND METHODS

Responses were analyzed using mixed method which consists of both qualitative and quantitative method. Qualitative research design was chosen for this study because it offers naturalistic inquiry. Quantitative research was carried out to gather the data from the large samples through proper sampling method in an inexpensive way. The first set of questionnaires were given to 296

current undergraduate students and the second set of questionnaires was given to 248 graduated students from one of the public universities. These students were attached to Faculty of Computer Science and Information Technology (FCSIT). The questionnaire was prepared based on Likert-scale, where one and two represent strongly agree and agree. Three means neutral, four and five represents disagree and strongly disagree. Besides distributing questionnaires, interviewing was also carried out to get an in-depth thought on these topics.

### Research objectives

There are three main objectives of this study. The first research objective is to investigate the causes of unemployment in Malaysia among the ICT graduates. Secondly, it examines the HEI curriculum from the current students and graduated students' perspectives. Finally, there is a discussion on the need for changes in the current HEI curriculum, especially, ICT course curriculum.

### Research findings

Data were analyzed using statistical analysis to answer research objectives. The following are the results from the studies, presented according to the research objectives.

### *Demographics of current student and graduated student*

All the 296 current undergraduate degree respondents were from different majors at FCSIT. Their entire courses were taught in English. Among the current students whom took part in the study of questionnaire, 70.8% of them were female. Majority of the respondents which contributed were Muslim students, 49.2%. 93.8% of the current students were Malaysian students. On the other hand, all the 248 graduated students responded in the second questionnaires graduated from the same faculty as the current students. The graduates are from year 2000 until 2010. Among the responders, 58.8% were females and majority of them (73.8%) were Muslim students.

### *Overall current and graduated students' opinion on unemployment issues*

**Mismatch of qualifications with employers' needs:** Mismatch of qualifications with employers' needs means that knowledge taught in HEI and what is expected by the employers in the job market does not match. When the current students were asked on the causes of unemployment among fresh graduates in Malaysia, majority of the respondents strongly agreed that, lack of experience are the major cause of unemployment (mean= 1.08), followed by capacity to communicate well in English (mean = 1.94), lack of interpersonal skills (mean = 2.93) and least respondents feel that lack of ICT

proficiency contribute to unemployment (mean = 3.73). On the other hand, majority of the graduated students feel that lack of ICT proficiency contribute the most to unemployment (mean = 1.64), followed by capacity to communicate well in English (mean = 2.50), lack of interpersonal skills (mean = 2.93) and a mean of 3.43 respondents strongly does not agree that lack of experience as the major cause of unemployment. This shows the current students' expectation is reverse to the graduated students whom are working. So, HEI need to provide the right direction to their students. Malaysian National Bank (2002) survey argued that there was increase in graduate unemployment due to mismatch of graduates skills with the requirements of the employers. Asma and Lim (2000) and Yogeewaran (2005) also argued on the issue of mismatch between what the local HEI are producing and what the Malaysian job-market seeks.

**Lack of demand and supply information on labour market:** Lack of appropriate and updated labor market information to HEI is another basis for the mismatch between demand and supply. 89.19% of the current students and 87.1% of the graduated students feel that lack of demand and supply information on labour market is one of the causes of unemployment. Khoo (2001) mentioned that, there were mismatch in graduates' skills and the employer's expectation due to lack of information on the transition between higher education institutions and job market.

**Lack of students' exposure to the real job market:** The partition between HEI and the industry is imposed upon students by the educational systems. Similarly, social and cultural norms play a role in whether students are exposed to work environment. In Malaysia, a number of HEI does not prepare their students well for them to face the real working environment. 60.14% of the current students and 88.71% of the graduated students feel that lack of exposure also lead to unemployment. The graduated and the current students feels that the current curriculum does not give a chance for the student to get to know what is required in the job market in order for them to engage themselves in their future.

**Lack of proper career guidance and information:** As we look at the current students view on academic support such as the advices received from the HEI on choosing their courses, it was shown that majority of the students were either disagree or neither agree nor disagree. This is supported with the mean of 3.92 and standard deviation of 0.82. This is further supported by the graduated students with a mean of 3.69. 62.84% of the current students decided their course based on their friend's advices, 32.77% based on their parents advices and only 4.39% choose a course based on the HEI advice. Results from the graduated students also indicate that only 1.21%

chooses a course based on the HEI advice. Cheah and Tay (2011) argued that employees would be more engaged in their jobs if they are supported by their supervisors and if they are empowered to make decisions. Besides that, 48.65% of the current students disagree and 23.99% strongly disagree to the statement that they get feedback from their seniors whom returned from internship course on their industrial training experience. 20.61% of the current students strongly agree and 52.03% agree that it will be very useful for them if the faculty could update them on their seniors' feedback working experience during their industrial pertaining.

**Lack of soft skills:** Soft skills are nontechnical skills such as communication, management and leadership which are required for successful practice. As the current students' soft skills were tested, majority of the current students (mean of 3.03) are not confident with their soft. The graduated students (60.48%) strongly agreed that soft skills are important in securing a job in the job market. 50.40% of the graduated students were not confident with their soft skills before they graduated. 12.50% of the current students and 8.78% of graduated students feel that although the graduates possess excellent results, they are unable to communicate effectively because they lack confidence and have a poor command of English. 25.81% of the graduated students' biggest concern when applying for a job is their level of readiness to work. They worry about whether they are well equipped with the knowledge to take on work responsibilities. Institute for Democracy and Economic Affairs (2011) chief executive stressed that, if the students do not have a good command in English, he/she claims that they have zero chance of succeeding in the global market. Increasingly, even local companies are demanding English proficiency too (The Star, 10 April 2011). They also claimed that most of the employers are looking for graduates who are creative, inventive and bold to success in the job market. 78.63% of the graduated students agreed that their university life should not be judged solely by the degree obtained at the end of their studies, but rather by the various experiences or knowledge they pick up through co-curriculum activities on and off campus. 72% of the respondents also agreed that it is students' responsibilities to prepare for the competition in the global market.

According to the executive director of the Malaysian Employers Federation (MEF), the main complain from employers was the standard of English among graduates. MEF executives director said that employers preferred to hire staff who could communicate well in English who can grow the company, as globalization has changed the current nature of job (The star, 10 April 2011). This is supported by the survey for executives 2010 that good communication skills which contributes 68% was the main attribute sought by employers. The managing

director of the top Malaysian headhunter agencies (Kelly services (M) Sdn Bhd) argued that the workforce index survey released in 2010 highlighted that communication skills is one of the top five most desired skills within the corporate sector. The agency has found that an average of six out of ten Malaysian graduates could not communicate effectively in English during interviews. The agency also claimed that many graduates are able to transfer their academic knowledge or articulate their thoughts during interviews due to poor command of English and this has cost them jobs in the corporate sector. They also pointed out that graduates here also commonly make gross grammatical errors in their resumes, and some even use text messaging slang in their job applications (The Star, 10 April 2011). Asif (2011) argued that self awareness, self regulation, motivation, empathy and social skills help employees in participation in decision making. Ali (2011) mentioned that employees as a result of social interaction, interpersonal learning and experience sharing learn the essential and key traits of performing tasks which makes them more valuable for their organization.

A case study conducted by the National Research Institute for Higher Education found that generally employers require their employees to have good communication skills with personal attributes and knowledge in ICT (IPPTN, 2007). Woo (2006) argued Malaysian graduates lack the basic skills and knowledge that they were supposedly trained in their HEI. The Minister of Human Resource (2006) said that most graduates do not interact actively when working in a team and are less committed to their work.

#### **Lack of students' exposure to the real job market:**

Social and cultural norms play a role in whether students are exposed to work environment. As the graduated students were asked on their business functions such as how well their courses helped them to understand the business environment and learn about the business functions, only 27.42% of the graduated students agreed that their university education curriculum are relevant to their present job. 88.71% of the graduated students agreed that, they find difficulties to adapt themselves to the working environment as they are lack of exposure to the real job market. This is supported by John (2000) that, learning is maximized if the context for learning resembles the real-life context in which the to-be-learned material will be used. Ted (2005) explains that, by placing course content in the context of a real-world scenario helps a student remember specific details of a lesson because the context gives the information meaning. Dearing (1997) also supported with the fact that introducing real-life work experiences into the Higher Education curriculum will improve their labour market prospects. This is supported with the fact that, a number of Malaysian universities are not producing "work ready" graduates because the country's education system is too exam-oriented. In recent years, many companies do not

trust new graduates, who may have learned 'mountains of' theories but lack of practical abilities.

**Not challenging course syllabus:** In general, ICT syllabus in Malaysian HEI emphasize on final examination. Only a small fraction of the marks will be allocated for the coursework which consist of assignments and projects. In some HEI, the coursework also equipped with quizzes and test. When the current students were asked on their preparation during their study, majority of the students do not agree to the current way of teaching and learning with a mean of 4.06 followed by standard deviation of 0.64. This is supported by the graduated students with a mean of 3.28. This shows that the current class activities are not quality enough to test the students' knowledge. As the current students were evaluated with the current way of assessment, majority of the students are neither agree nor disagree with a mean of 3.63. This is supported by the graduated students with a mean of 3.17. 71.37% of the graduated students and 68.15% of the current students strongly agreed that the students are memorizing mountains of theories rather than exploring and getting to know new information on the latest happening in the market related to their ICT courses. 4.39% of the current students and 3.63% of the graduated students feel that not challenging course syllabus is one of the factors that cause unemployment in the job market. 54.84% of the graduated students claimed that they focus more on theoretical knowledge in the practical courses compared to hands on experience.

**Industrial training/internship course:** The questionnaire received positive feedback from the current students when they were asked on the importance of internship course with a mean of 2.32 followed by a standard deviation of 1.01. 66.53% of the graduated students agreed that the industrial training should be at least six months with a quality hands on experience which is related to their course of study. Holmes and Miller (2000) argued that employers are now looking for graduate with not only academic capabilities, but also developed the key skills that will enable a successful and expeditious transition from education into employment. Purcell et al. (1999) said that the importance of work experience in enabling graduates to obtain appropriate employment. Louise (2009) discovered that the working experience during their studies definitely help them to secure a job after their studies. 85.48% of the graduated students strongly agreed that internship course is very helpful to broaden the horizons of students by increasing their awareness of the world around them. 83.06% of the graduated students also agreed that internship course could enhance students' academic performance and develop interpersonal skills and leadership skills.

**Students' attitude:** 65.73% of the graduates responded that the graduates are not committed enough, not

prepared to face challenges and not bold enough to take risk. Eleni (2008) mentioned that, there should be lifelong learning for enhancing their flexibility in the labour market. This is further supported by Lee (2000) that the students need lifelong learning to succeed in their career. It may be inferred from the graduated students' perspectives that graduate inability to adapt and learn new things with their wrong attitudes to learning may have led to the lack of graduate readiness for employment. To overcome this problem, the graduated students suggested for longer industrial training period for the graduates, more collaboration between universities and industries, and also enhancing communication skills and personal qualities, interpersonal skills, thinking skills and ICT skills in the University curriculum. Academic qualifications alone cannot help them to secure a job. The curriculum of the institutions of higher learning should be developed in accordance with the development of technology. Tay (2011) mentioned that the behaviours, attitudes and work values of employees may be influenced by their historical, economic, social and cultural experiences which they would have leaned in their HEI. Liang and Maggie (2011) argued that employee satisfaction is one of the key factors that influences an organization's performance and is thus critical to the organization's success.

**Lecturers and curriculum:** 64.92% of the graduated students strongly agreed that the HEI should look into the background and skills of the academic staff in their institute to maintain the knowledge delivery quality to their students. 87.90% of the graduated respondents supported that, in order to succeed in twenty-first century, the students need to be self-directed learners. This could be achieved by going beyond the basic mastery of skills and curriculum to explore and expand one's own learning and opportunities to gain expertise. Besides that, they also need to demonstrate initiative to advance skill levels towards a professional level and demonstrate commitment to learning as a lifelong process.

Setting curriculum outline in higher education is not a one man show. There are many factors involve in generating the course curriculum. In fulfillment of the government's agenda that emphasizes on human capital development, accurate and careful planning should be carried out, especially at the HEI level. The traditional thinking that a university is a knowledge provider needs to be distorted so that graduates will be alert of skills required at rapidly changing job market.

81.85% of the graduated students agreed that the lecturers need to adopt collaborative learning as the core model of pedagogy. The respondents agreed that the lecturers who want to remain relevant will have to abandon the traditional lecture and start listening to and conversing with students. This can be done by shifting from a broadcast style to an interactive one. In doing so, the lecturers could encourage students to collaborate

among themselves and with others outside the university. 86% of the students also strongly agreed that the lecturers should encourage students to discover for themselves and to engage in critical thinking instead of simply memorizing the professor's store of information.

**Teacher-centred and not student-centred:** 84.46% of the current students strongly agreed that their HEI are teacher centered and 94.35% of the graduated students agreed that their learning environment also more towards teacher-centered. Literature on teacher-centred and student-centred approaches and their implications in tertiary education was extensive. Less well-known was literature on characteristics that distinguish these approaches. Barr and Tagg (1995) argued that the teacher-centred pathway generally aim to 'transfer or deliver knowledge from faculty to students', whereas institutions with a student-centred approach or learning paradigm focus more on creating 'environments and experiences that bring students to discover and construct knowledge for themselves'.

When a number of current students and graduated students were interviewed, they suggested few other causes of unemployment among ICT graduates such as students do not explore to the job market, they are good with theoretical and not practical, students focus only on study and ignore soft skills, university do not emphasize on industrial skills, cannot satisfy the company culture, lack of experiences, lack of skills, lack of working experience, students do not update their skills, employers have high requirement on the fresh graduates and end with disappointment, university courses are not tailored towards industry demand, but are rather theory based. There should be a drastic change in the attitude of education, its intentions, curriculum and pedagogy in order to prepare our HEI students to face the twenty-first century job market to match the employee's qualifications with employers' needs.

### **The need for changes in curriculum**

The competitions on the development of new technologies are increasing tremendously which forces the graduates to develop their skills and technological options as early as possible. With the expected Malaysian economic growth rate of over 5.5%, thousands of highly skilled and qualified graduates will be required across all industrial sectors. This is supported by Malaysian Prime Minister in the tenth Malaysia plan (2010) that only 23% of the workforce is highly skilled. This percentage is much lower compared with other developed countries. The Prime Minister stressed that, there is a need to improve the composition of highly skilled workers to at least 37% by 2015, to become a developed nation. The Prime Minister also added that there is a shortage in skilled manpower. This is supported

with the fact by Malaysian Principal Statistics of Labour Force that, the labour market rose in January 2011 with an increase of employed and unemployed persons to 12.15 million and 421,800 persons, respectively. However, the percentage increase in unemployed persons was higher (7.8%) than the employed persons (4.2%). Thus, the unemployment rate increased from 2.9% in October 2010 to 3.4% in January 2011. According to the Malaysian Ministry of Human Resources, almost all the universities today focus on how to increase the students' quality and skills through university and industry collaboration. Changing nature of work increases the need for 21st century skills preparation.

Today's economy means multiple jobs and on-going development to build transferable skills and competencies. Ngambi (2011) argued that today's global environment in general and the universities in particular face growing pressures that will further strain their capabilities and inhibit their ability to meet growing stakeholder demands. Most of the Malaysian universities course contents are referring to textbook. To be a successful university in 21st Century, 77.42% of the graduated students strongly agreed that the academic journal should be disintermediated and the textbook need to be eliminated. The respondents also strongly agreed that in an interactive coursework, not a single textbook should be used to present this content to students, constituting a platform for every subject, across disciplines, among institutions and around the world. 80.24% of the graduated students strongly agreed that the content should be multimedia and not only text which includes of networked and hyperlinked.

Studies have shown that as more people come to possess higher education degrees, undergraduates must attempt to add value to their primary academic credentials to distinguish themselves from others with similar degrees in a competitive labor market (Tomlinson, 2008). Some students proposed to add minors to their course major. Liefner and Schiller (2008) have found that higher education graduates with double majors or minors were more likely to find a job than those without these credentials. Laurillard (2002) claims that academic knowledge is best achieved in university learning experiences which are dialogic (between teacher and learner, or learner and learner) and which involve exposition, argument, interpretation and reflection on experience of the world. Emerging technologies by students and incorporated wisely into university curricula, can enhance high quality, face to face learning experiences, where articulated knowledge is constructed and student achievement of intellectually challenging outcomes is effected (Beverley and Veronica, 2007).

Research in the field of teacher-centred and student-centred has found that for tertiary teachers with a teacher-centred approach, students are seen as incapable of constructing their own knowledge and

therefore, teachers should act as knowledge presenters; whereas, at the other end of the continuum, teachers with a student-centred approach view student learning as about integrating, reorganizing and modifying what students have learnt, or about changing students' existing conceptions of the world (Postareff and Lindblom, 2008).

HEI cannot be a standalone system in today's market as it cannot handle these new expectations and demands. It is the task of HEI to bring the new requirements of ICT industry demands to their students. Weidong and Wang (2008) also argued that establishing joint labs is a newer form of university-industry collaboration; serve as a new way of improving the quality of teaching and training high-quality talents, which means it is a beneficial supplement to traditional higher education. The Industry and HEI collaboration also provide the University the taste of the "real world", gaining a valuable practical experience and feeding back that knowledge to students (Karim and Bashur, 1997).

## Conclusion

HEI play a very important role in producing good quality workforce for industry while industry makes full use of these products to become more competitive in the local and foreign market. From this study, it is clear that the current students and graduated students are not satisfied with the current teaching and learning. As there are a number of factors that causes unemployment among the graduates in the job market, there should be an immediate action taken by the HEI. HEI need to re-engineer the current curriculum to supply quality graduates to satisfy the employers' need in the job market.

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