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GRADUATE EMPLOYABILITY IN ASIA






GRADUATE EMPLOYABILITY IN ASIA

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Acronyms

ACS	Alumni and Career Services
ADB	Asia Development Bank
AEC	ASEAN Economic Community
APEID	Asia-Pacific Programme of Educational Innovation for Development
ASEAN	Association of Southeast Asian Nation
BLES	Bureau of Labor and Employment Statistics
BPO	Business Process Outsourcing
CCAC	Co-curricular Activity Centre
CEDF-IT	Cebu Educational Foundation for IT
CGPA	Cumulative Grade Point Average
CHED	Commission on Higher Education
CSO	Civil Society Organization
FMM	Federation of Malaysian Manufacturers
FSP	Finishing School Programme
HEI	Higher education institution
ICT	Information and Communication Technology
IIUM	International Islamic University Malaysia
ILO	International Labour Organization
IPPTN	Institut Penyelidikan Pendidikan Tinggi Negara
IT	Information Technology
LFS	Labour Force Survey
MEF	Malaysian Employers Federation
MNC	Multi-national Corporations
MoHE	Ministry of Higher Education
MTPDP	Medium-Term Philippine Development Plan
MUET	Malaysian Universities English Test
NCCAC	Non-credit Co-curricular Activity Centre
NGO	Non-governmental Organization
NSCB	National Statistical Coordination Board
NSO	National Statistics Office
PBL	Problem-based Learning
PRC	Professional Regulation Commission
PSDC	Penang Skills Development Centre
PWD	People with a Disability
RAP	Rapid Assessment Process
SME	Small Medium Enterprise
SMI	Small medium industry
UI	Universitas Indonesia
UiTM	Universiti Teknologi MARA
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNESCO	United Nations Educational, Scientific and Cultural Organization
UTM	Universiti Teknologi Malaysia
UUM	Universiti Utara Malaysia

Preface

We live in a rapidly changing world with diverse demands and challenges. Governments are increasingly looking to universities to produce human resources with the right kind of capacities, skills and knowledge to meet 21st century needs. They also call on universities to facilitate the shift to knowledge-based economy and high-technology through effective linkages between research and industry to ensure that their countries have a competitive edge in the global market.

Preparing young people to enter the labour market has therefore become a critical responsibility for universities. However, the relevance of their programmes and the employability of their graduates are posing an increasing challenge for the universities, particularly in view of two sets of statistics: enrolment and youth unemployment rates. According to UNESCO's data, enrolment in tertiary education more than doubled over the past two decades from 68 million in 1991 to 151 million in 2008. At the same time, the financial crisis that began in 2008 has resulted in increasing unemployment, as highlighted in ILO's Global Employment Trends reports. The global unemployment rate was 6.2 percent in 2010 compared to 5.6 percent in 2007. According to the 2012 report, young people continue to be the hardest hit by the job crisis with 74.8 million youth being unemployed in 2011, an increase of more than 4 million since 2007.

With many economies being reported as not generating sufficient employment opportunities to absorb growth in the working-age population, a generation of young productive workers will face an uncertain future unless something is done to reverse this trend. To increase the graduates' chances of obtaining decent jobs that match their education and training, universities need to equip their students with the necessary competencies to enter the labour market and to enhance their capacities to meet specific workplace demands.

UNESCO Bangkok with the support of Japanese Funds-in-Trust and UNESCO Jakarta coordinated a study on the employability of university graduates in selected countries in Asia. While there is no one-size-fits-all formula, findings from the study can help governments and universities in developing policies and approaches to make their graduates more employable and responsive to labour market demands. Emerging economies in Asia had weathered the 2008 financial crisis fairly well. However, as the global economy is expected to continue its slowdown in the short-term, governments in this region recognize the challenges posed by an ever increasing competitive environment. I hope this report will contribute to their efforts in meeting these challenges.

On behalf of UNESCO Bangkok and UNESCO Jakarta, I would like to thank the authors for their efforts in preparing the case studies in their respective countries. I would also like to acknowledge the contributions of Mr. N.V. Varghese from the UNESCO International Institute for Educational Planning (IIEP) and other participants of the Regional Seminar on Diversification of Post-secondary Education and the Employability of University Graduates held in March 2010 who commented on the preliminary findings of the research study.

Gwang-Jo Kim
Director
UNESCO Bangkok

Employability of graduates in Asia: an overview of case studies

Lay Cheng Tan and Erika French-Arnold

The global economy favours knowledge and technology. Higher education is increasingly being viewed as central to national strategies for securing shares in the global market and universities as the repositories of valuable human capital to support national development.

The contribution of universities to economic development can be seen in three areas: (i) producing and accumulating human capital; (ii) generating, disseminating, and applying knowledge; and (iii) innovating and inventing new information and technology. The accelerating shift to high-technology industries and an information technology economy requires sustained human resource development and training. Therefore, an appropriate higher education system is critical for preparing a competent workforce.

Reflecting the priority given to develop a knowledge-based economy, tertiary education enrolment had increased fivefold from 28.6 million in 1970 to 152.2 million in 2007.[1] Unfortunately, employment rates had not kept pace with this trend. The global unemployment rate increased from 5.6 percent in 2007 to 6.2 percent in 2010.[2] This has created a highly competitive environment for young people aged 15-24 years, as can be seen from high youth unemployment rates: 11.8 percent in 2007, 12.8 percent in 2009, 12.6 percent in 2010 and 12.7 percent in 2011.[3] These statistics are worrisome because the youth represent the productive labour force of the countries. If not gainfully engaged for extended periods of time, many governments will have to deal with a host of issues and challenges facing a lost generation.

The number of unemployed graduates is partly caused by imbalances in the economy. The financial crisis and economic downturns in recent years are certainly reasons for the reduction in the number of jobs, but supply-side factors also contributed to the high numbers of unemployed graduates. The kind of skills required for graduates to enter the labour market need to be clearly understood so that higher education institutions (HEIs) can foster these skills in their students. Relevance of their programmes plays an important part in helping their graduates find employment.

Supported by the Japanese Funds-in-Trust, UNESCO initiated a study to examine the employability of university graduates in selected countries in Asia and the Pacific. The study aimed to analyze the factors that have an impact on graduate employability, and to identify policies and strategies that have been put in place by universities to prepare and train their graduates to meet the demands of the workplace. The study also attempted to highlight the plight of graduates with degrees in information and communication technologies (ICT). Given the prevalence of technology in all aspects of our lives and the rapid development in the field, the capacity of universities to adapt and update their programmes and curriculum accordingly is of particular concern.

This report features three case studies on graduate employability from Indonesia, Malaysia and the Philippines, and a fourth on the employability of ICT graduates in Malaysia. The studies were conducted by researchers based in the countries following some guiding principles which could be adjusted to meet country-specific conditions and priorities:

- The studies were to focus on the 1st degree-undergraduate level and targeting new graduates (0-12 months after graduation).
- The emphasis was on the employability of graduates, rather than graduate unemployment.
- Previous graduate employment research and studies were referred to as far as possible to build on their findings and experiences.

1 UNESCO-UIS. 2009. *Global Education Digest 2009. Comparing Education Statistics Across the World*. UIS, Montreal.
2 ILO. 2010. Global Employment Trends for Youth. August 2010. ILO, Geneva.
3 ILO. 2011. *Global Employment Trends, 2011. The Challenge of a Jobs Recovery*. ILO, Geneva; ILO. 2012. *Global Employment Trends, 2012. Preventing a Deeper Jobs Crisis*. ILO, Geneva.

Findings

Concept of employability

There is general consensus that employability refers to a wide range of attributes and competencies that enable the job seekers to gain and maintain employment such as, but not limited to, the following:

- Communication skills
- Logical, analytical and problem solving skills
- Personality, confidence, and integrity
- Flexibility and adaptability
- Innovation and creativity
- Team spirit

Attempts to use a broader framework for employability take into consideration the roles of both individual characteristics and labour market conditions. The model developed by McQuaid and Lindsay (2005)[4] contains three interrelated components that influence employability:

- Individual factors that include attributes (e.g., basic social skills), competencies (e.g., motivation, confidence), transferable skills (e.g., literacy, numeracy, problem-solving, communication, adaptability, teamworking skills), qualifications and educational attainment.
- Personal circumstances that relates to the individual's social and household circumstances (e.g., family and caring responsibilities, access to resources).
- External factors that cover labour demand conditions (e.g., macroeconomic factors, vacancy characteristics, recruitment factors) and enabling support factors (e.g., accessibility of public services and job-matching technologies).

Seen through this lens, employability is thus an outcome of multiple factors, and dialogues on employability and employment need to include more stakeholders in addition to HEIs and students.

Graduate unemployment rates and job preferences

Data from the Indonesian Ministry of Manpower and Transmigration show that from 2007-2009 the number of people seeking jobs exceeded the number of job vacancies for HEI graduates. With a high percentage of graduates looking for jobs, e.g., 26.7 percent in 2009, Malaysia also faces high graduate unemployment rates. The Philippines has no recent data on unemployment of new graduates per se, but the number of unemployed college graduates in general has been increasing according to data from 2007 to 2009. According to the Malaysian study, graduates of technical studies and ICT were more likely to be employed, but even they found it hard to find jobs as reported in the ICT case study from Malaysia, with 39.3 percent being unemployed at the time of the survey in 2008.

The oversupply of graduates in some fields was an issue. Students enrolled in over-subscribed programmes, leading to a glut of graduates unable to find jobs in their areas of specialization, such as nursing and information technology in the Philippines. The lack of work experience, particularly in the cutting-edge industries of the IT sector, was another factor tending to limit graduate employment prospects. Faced with these difficulties, many ended up underemployed or employed in areas for which they were not trained. Graduates in Indonesia indicated a preference for working in the private sector. In fact, most of the IT graduates surveyed in Malaysia (79.6 percent) were working in the private sector, while 20.4 percent were with the government or with government-linked companies.

4 McQuaid, R.W. and Lindsay, C. 2005. The concept of employability. *Urban Studies*, Vol. 42, No. 2, pp. 197-219.

Different perspectives

The results demonstrated differing perspectives among the graduates, universities and employers. Graduates generally believed their education and skills were sufficient. The universities considered their students to be well prepared for the transition to the workplace. Unfortunately, the employers concluded that new graduates lacked vital skills for employment, citing unrealistic expectations and demands for higher salaries as examples.

Such incongruent perspectives must be addressed for effective solutions to enhance the employability of graduates. No graduates, HEIs or employers will argue against having professionals who are knowledgeable and skilled, and at the same time possess desirable attributes. Several suggestions have been made to reduce the gaps.

Bridging the gaps

Academic qualifications are essential, but the aptitudes and attitudes of job seekers are equally, if not more, important to employers. A high grade point average alone does not guarantee employment. It is therefore crucial for graduates to cultivate qualities most sought after by their potential employers. These are what the researchers classified as "++ factors": they include motivation, an ability to think "outside the box", problem are solving and communication skills, and an ability to work both as part of a team and independently. It is also vital that graduates liable to work in many different jobs and industries throughout their entire career seek to constantly improve and update their skill, and willing to learn new technologies. Any sign that they possess some of these qualities might persuade employers to offer them jobs. Young people therefore have a responsibility to prepare themselves for a changing world by improving their knowledge and skills to meet the demands of employers and the realities of the workplace.

In economies with limited job opportunities, entrepreneurship is seen as a viable option for new graduates to chart their own future by setting up an own businesses. To overcome barriers such as the shortage of start-up funds, insufficient knowledge of business practices and lack of motivation, it is necessary to design courses for entrepreneurship, organize extracurricular activities, and provide government support and funding as further encouragement. This paradigm shift is seen in both Indonesia and Malaysia. The Indonesian government has introduced an entrepreneurship skills programme and provides seed capital for new graduates to start up their own businesses. The Malaysian government has initiated a combination of conventional discipline-related courses and entrepreneurship courses to include subjects such as small business management, competencies such as English language, team work and analytical skills to expose students to skills to help them start their own business, create jobs for themselves and others. ICT graduates will benefit substantially from such training in entrepreneurship in view of the potential for innovative start-ups in the industry.

There is strong support for industries to play a bigger role in improving the employability of graduates, both within or outside the formal curriculum structure. Linkages between universities and industries offering work-based projects and internships can also help universities to acquire valuable information to update their curricula, and students to gain practical work experience. Employers need to facilitate on-the-job training, particularly for specific skills or new applications and technologies.

Conclusions

The concept of employability gives rise to questions such as: Should employability be the primary basis that shapes the direction of universities? Is a university's purpose to be defined solely by the expectations of employers? It is contentious to argue that the quality of higher education should be measured solely in terms of the employment rate of graduates, and that is not the intention of this research study. There is no doubt that universities are expected to nurture their students to become responsible, productive and innovative citizens, and by doing so, they will help to develop the desirable ++ factors in their graduates.

The task of producing such graduates does not lie only with the HEIs but is part and parcel of the entire education system, including the primary, secondary and post-secondary education stages. Education institutions at all levels share the same responsibility in developing current and future generations of young people, as do governments, employers, non-governmental organizations and civil society organizations. With more at stake, students themselves have to take personal responsibility to optimize the opportunities they have in institutes of higher learning and ensure that they leave their institutes as highly sought after graduates.

With the imminent establishment of Association of Southeast Asian Nation (ASEAN) Economic Community (AEC) in 2015, there will be greater integration, and also competition among ASEAN countries. The unemployment situation in Indonesia, Malaysia and the Philippines may ease when their job markets expand across the borders, if their graduates can compete successfully at the regional level. The stakes are high. UNESCO hopes that this report to highlight the importance of graduate employability and that a concerted effort is needed by all to ensure that highlights graduates are adequately prepared and trained to meet the challenges.

Graduate employability in Indonesia

Widijanto S. Nugroho, Nizam, Rahmat M. Samik-Ibrahim and Putu W. Handayani[5]

Introduction

Modern economy needs highly trained and skilled human resource, and higher education institutions (HEIs) are required to produce qualified graduates to meet the needs of national development and employers. The industry defines the characteristics and skill requirements of its workforce which may or may not be matched by the graduates being produced by HEIs. In the higher education context, employability has a variety of meanings, from the employment rate of graduates to the characteristics of the graduate (Harvey, 2003). In the Indonesian context, employability is usually associated with how quickly a graduate finds employment. As a result, the waiting period for seeking employment dominates the indicator of whether an institution is able to produce qualified graduates for the job market (Syafiq and Fikawati, 2008; Universitas Indonesia, 2003).

However, given the broad understanding of employability, it is important to recognize that the quality of a university graduate is not just a reflection of the quality of the curriculum and its supporting academic environment. It also reflects the demands of the industry as well as the competence of the regulating body (i.e. related government institutions) in shaping the characteristics of higher education graduates. It might be overly simplistic to say that universities are encouraged, if not pressured, to produce employable graduates. The higher education sector in Indonesia needs to recognize and understand the context of employability for their graduates to ensure that their students can live up to the expectations from governments and employers.

Finding the answers to the question "do our graduates have the right characteristics or attributes that make them employable?" will help to comprehend what constitutes graduate employability. Much of the discussions on graduate employability tend to link it with the performance of HEIs. Harvey (2003) indicates that equating employability with skills was part of the agenda of the 1990s. Similarly expressed in the Dearing Committee Report (Dearing, 1997), employability is not just about getting the "preferred" skills. A more important priority is the graduates' work experience, an emphasis that must be fully understood by HEIs. Harvey goes further to suggest a model of employability where an institution, notably the HEI, provides a range of implicit and explicit opportunities for its graduates. These include job obtaining knowledge and abilities, labour market information, interview techniques and curriculum vitae writing. The institution may also develop a range of attributes such as (a) higher-level of analysis, critique and synthesis skills; (b) interactive competencies such as team approach and communication skills; and (c) personal characteristics such as self-organization, time management, risk taking and problem solving. Another aspect that also contributes to the characteristics of the employability model is the development of the students' interest in continuous learning beyond formal higher education, and the development of the students' ability to reflect on their learning and experience.

A graduate recruiter in the United Kingdom believes that today's world of work is increasingly expecting multi-skilled and multi-tasking employees (Fearn, 2009). Workers will need to apply new skills that will require them to learn and re-learn while on the job. The DGHE-MONE (2009) report highlighted the dominance of workers with elementary level education among Indonesia's productive labour force. In 2006, around 55 percent of the labour force obtained elementary education or less, while only 5.4 percent obtained tertiary level education as shown in Table 1.

5 University of Indonesia and Directorate General of Higher Education, Indonesia. The authors acknowledge the support from UNESCO Bangkok and Directorate General of Higher Education, Indonesia who have supported the research.

Table 1: Development of workforce and education attainment (%)

Education attainment	2001	2004	2005	2006
No schooling	7.1	5.7	4.9	5.3
Primary education	55.9	51.1	50.7	50.2
General junior high school	16.2	18.3	18.5	18.9
Vocational junior high school	1.5	1.4	1.8	1.3
General high school	10.3	12.1	12.7	12.7
Vocational general high school	5.5	6.2	5.9	6.2
Diploma 2	0.7	0.9	1.0	1.0
Diploma 3	0.9	1.2	1.4	1.2
University	1.8	3.0	3.2	3.2

Source: National Statistic Bureau, Susenas, various years.

Even though the percentage of the workforce with tertiary education is still low, the number of graduate unemployment is high. A recent survey from the National Statistic Bureau in February 2009 on the status and type of jobs of high school and tertiary education graduates showed that most university graduates work in the formal sectors, the lower the education level the more they work in the informal sectors. The expectation of university graduates to work in the formal sector also resulted in higher unemployment rate, as shown in Table 2.

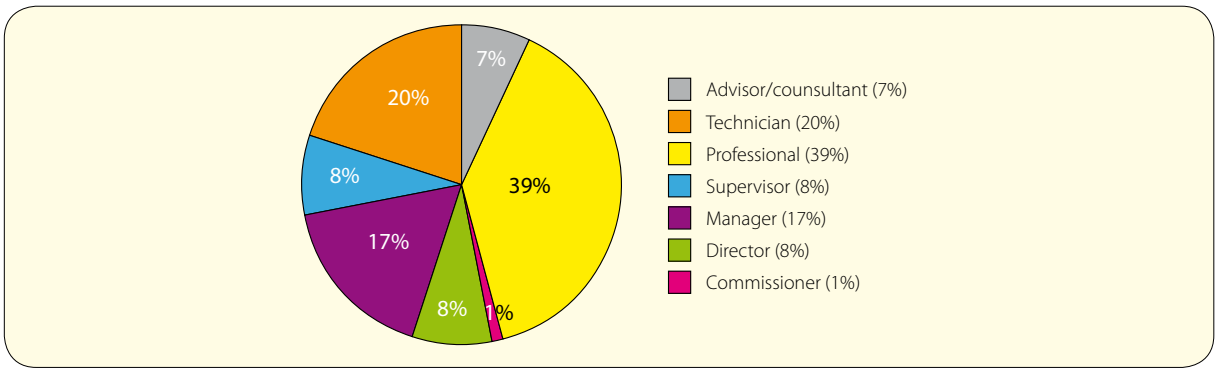
Table 2: Graduates and status of employment in 2009 ('000 and %)

Status/type of job		General HS		Voc HS		D I, II, III		University	
		No	%	No	%	No	%	No	%
1	Formal	8.13	33.29	4.22	37.57	2.17	53.65	3.60	62.35
	• Employee	0,77	3.17	0,27	2.42	0.12	2.90	0.24	4.24
2	Informal	7.00	28.68	2.97	26.39	0.50	12.55	0.61	10.62
	• Self employment	2,81	11.51	1,30	11.58	0.24	5.92	0.30	5.11
3	Unemployed	2.13	8.74	1.34	11.91	0.49	12.04	0.63	10.85
	• Preparing a job	0,05	0.19	0,03	0.27	0.02	0.37	0.01	0.24
4	Non-labour force	7.15	29.29	2.71	24.14	0.88	21.76	0.93	16.18
	• Further study	2,23	9.13	0,30	2.64	0.04	0.95	0.03	0.60
	• Housewife/domestic	4,19	17.15	2,05	18.20	0.72	17.70	0.74	12.87
	• Others	0,73	3.00	0,37	3.29	0.13	3.11	0.16	2.71
	Total	24.41	100.00	11.24	100.00	4.04	100.00	5,77	100.00

Source: Iryani, 2010, based on Sakernas 2009.

While the number of unemployed HEI graduates is high, at the same time, the number of foreign workers in Indonesia is increasing. In January 2005, there were 21,255 foreign workers in Indonesia; in June 2009 the figure rose to 46,226, an increase of 121 percent in five years or annual increase of 25 percent. The increase in foreign workers was inline with the increase in foreign direct investment. More than 50 percent of the foreign workers work in Jakarta. The fact that most of the foreign workers in Indonesia occupy highly skilled positions, as shown in Figure 1, is becoming a serious concern. It is, therefore, crucial for the higher education system to focus on developing their students' competencies and skills to match job opportunities and improve their employability.

Figure 1: Highly skilled foreign workers in Indonesia by occupation



Source: National Statistic Bureau, February 2008

A research on graduate employability in the Philippines posed several questions to identify parameters for describing employment and employability aspects of university graduates (De Guzman and De Castro, 2008):

- Which programmes are most sought by employers?
- Which programmes have the best potential for the highest initial earnings?
- Which types of graduates are most employable?
- How long did it take graduates to find employment after college?
- What academic experiences/competencies from college did the graduates find most useful?
- Which factors best determine employability from the personal and academic backgrounds of graduates?

Through systematic sampling, the results showed that graduates of a Philippines comprehensive university did not have to wait long to find regular employment. Furthermore, these graduates were employed through walk-in applications and recommendations. The research found that graduate employability was not attributed to the academic honours of graduates. Rather, it was due to the assets of knowledge, skills and attitudes, and the way these were deployed in the workplace. The research findings provided structural and procedural implications for universities in the Philippines. In view of the findings, a more functional framework for employability needs to be developed, allowing better links between the degrees offered and the diversity of employment.

In the Indonesian context, the term graduate employability has to be examined from the viewpoints of industry, HEIs and related government bodies. Several studies have contributed to the knowledge on graduate employability (Syafiq and Fikawati, 2008; Universitas Indonesia, 2003; DGHE-MONE, 2009). This paper presents findings from a research study undertaken with the support of UNESCO and the Japanese Funds-in-Trust to further explore and distinguish an employability model for Indonesian higher education graduates, focusing on graduate employability from the perspectives of the graduate, the educational institution, industry and various government bodies.

Research approach

A literature review was first conducted to collect information on graduates' success in obtaining a job after finishing their studies. This was followed by several surveys targeting the three main stakeholders – students, HEIs and employers. Fresh graduates, job seekers and employed graduates were surveyed to develop a profile of their employment characteristics. HEIs were interviewed and their curricula examined to find out how they instil employability characteristics in their graduates. A random sample of employers reflecting different kinds of job opportunities were surveyed to understand the industry's requirements when employing graduates.

Survey instruments were distributed at a two-day job exposition at Universitas Indonesia in October 2009, online through alumni mailing lists, via a web survey and during a one-day seminar involving

employers held by the Computer Science Center of Universitas Indonesia. The following is the summary of the responses:

- 524 survey forms were distributed; 72 of the forms returned had errors leaving 452 for analysis;
- 73 responses were obtained through email and the web survey; and
- 29 respondents were employers – one form was rejected because it was incomplete.

Results of the study

Profile of the labour market

Indonesia's economy is shifting from being agriculture-based towards industry and service-based. Data from the National Statistic Bureau indicated that in 1971 the agriculture sector contributed 44.8 percent to the nation's GDP, in 1990 it went down to 21.5 percent, and in 2006 it only contributed 12.9 percent. However, the shift in labour force was slower to take place. In 2001 the agriculture sector absorbed 68.8 percent of the work force while in 2006 it absorbed only 44.7 percent, as shown in Table 3. The structure of the labour force explains to some extentd the high unemployment rate of university graduates.

Table 3: Development of labour force composition by sector (%)

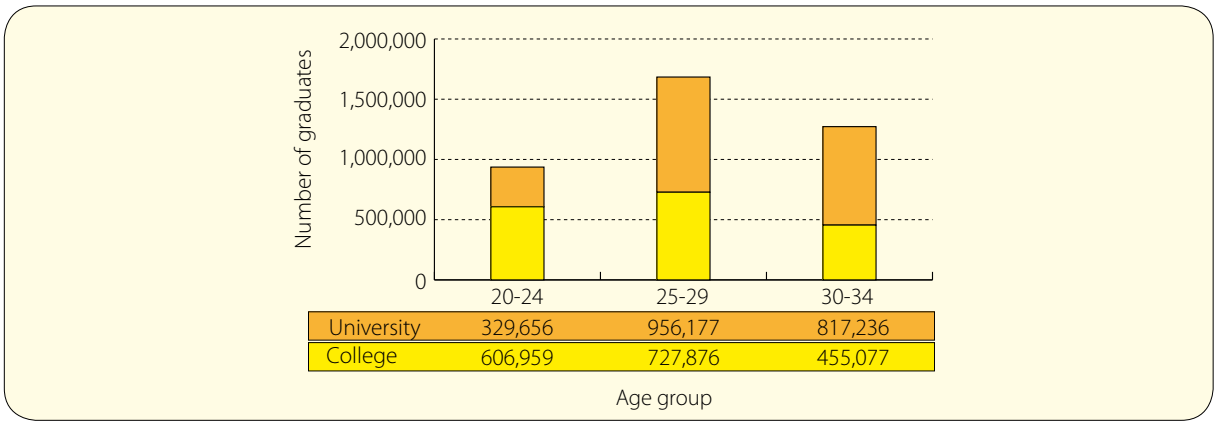
Sector	2001	2004	2005	2006
Agriculture	68.8	43.4	44.1	44.7
Mining	4.4	7.5	7.5	7.3
Manufacturing	3.6	5.6	6.4	6.0
Utilities	2.4	5.1	5.0	4.8
Construction	10.7	20.4	19.0	19.4
Trade	3.0	6.3	6.6	6.4
Transportation and Communication	2.1	3.5	3.4	3.2
Banking and Financial Services	1.9	3.4	3.7	3.8
Government and other services	3.1	4.8	4.3	4.4

Source: National Statistic Bureau, various years.

Profile of the working age in Indonesia

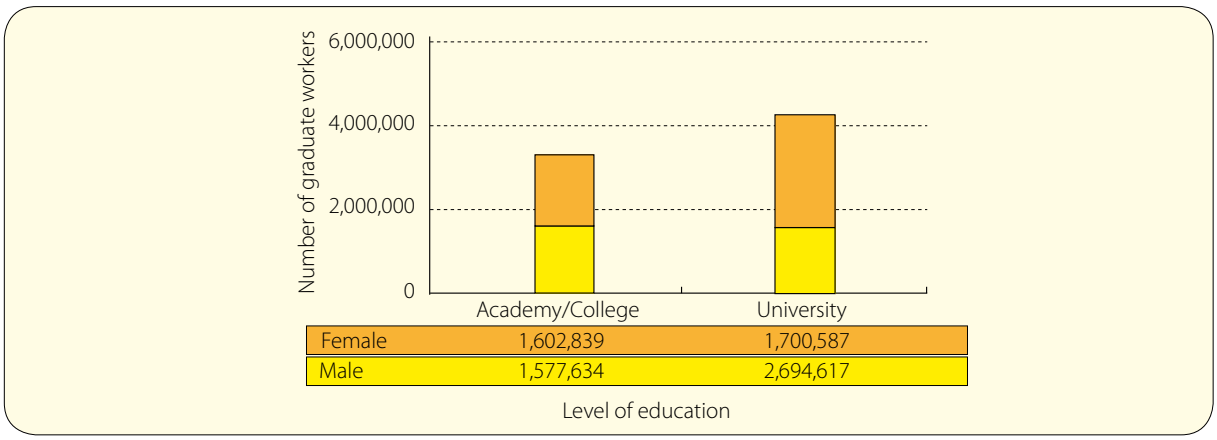
Data obtained from the Ministry of Manpower and Transmigration for 2008 showed that there were about one million HEI graduates aged 20-24 years, 1.7 million graduates aged 25-29 and 1.3 million graduates aged 30-34 (Figure 2). The data also showed that about 7.5 million people in the labour force have a higher education (Figure 3), but the number of unemployed with a higher education degree was almost 1.2 million, 90 percent of whom were actively seeking employment (Figure 4).

Figure 2: Profile of higher education graduates by age, 2008



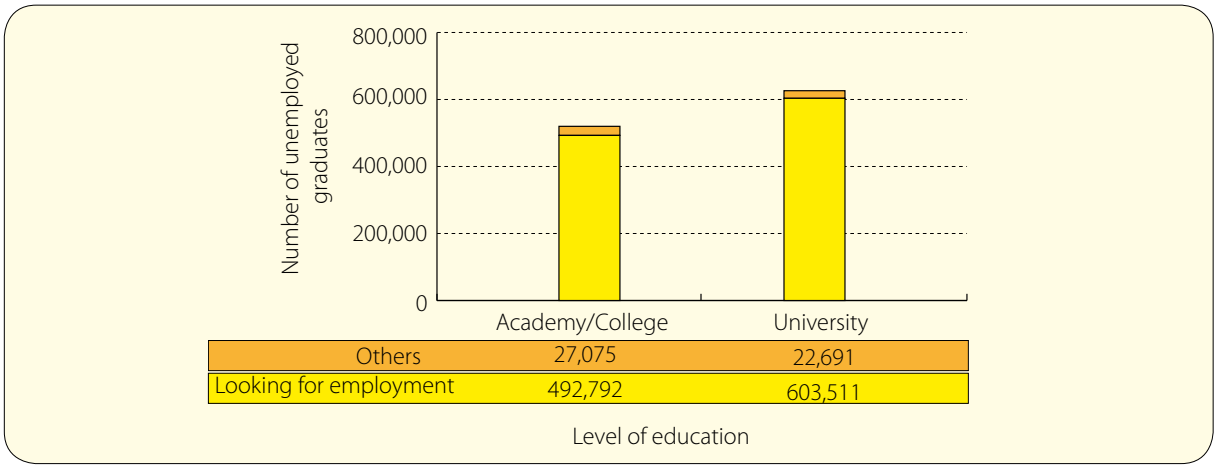
Source: Ministry of Manpower and Transmigration

Figure 3: Profile of higher education graduate labour force, 2008



Source: Ministry of Manpower and Transmigration

Figure 4: Profile of higher education graduates' open unemployment, 2008[6]



Source: Ministry of Manpower and Transmigration

6 Open unemployment refers to a situation where individuals are unable to find jobs at reasonable rates, but are actively looking for work.

The 2008 economic turmoil obviously has had an impact on the job market in many countries. Although the Indonesian government claimed that the economic recession might have a minimal impact on the country's economy, the number of people looking for employment, especially those with a tertiary education, should be considered to provide a clearer understanding of the factors that affect the employability of higher education graduates.

The Ministry of Manpower and Transmigration data also demonstrated that the number of people seeking jobs far exceeded job opportunities/vacancies available for graduates of higher education institutions (Table 4). It is safe to assume that people with knowledge, skills and attitudes preferred by employers will be more likely to get a job, thus increasing the competition for the remaining job seekers.

Table 4: Job vacancies in 2008

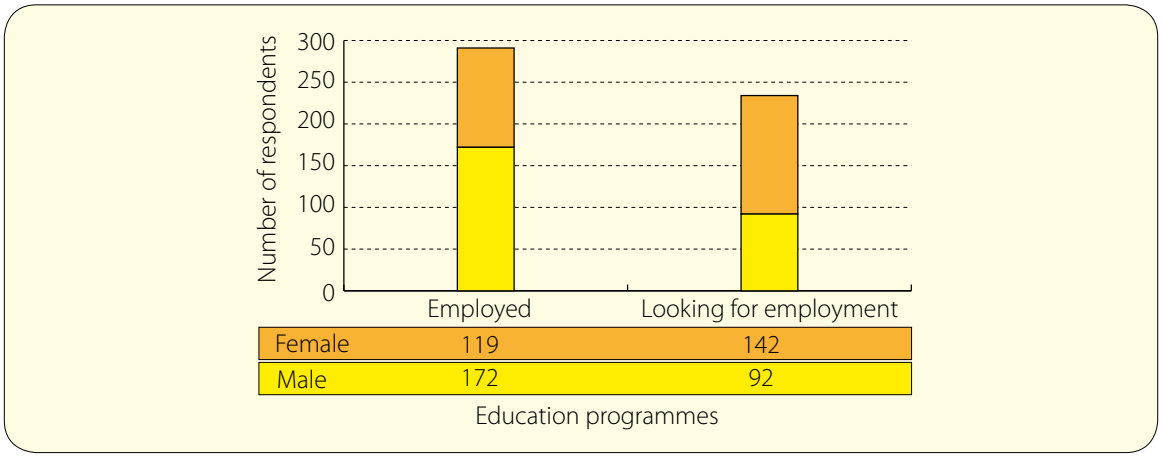
Field of work	Vacancy for male	Vacancy for female	Total vacancy
Agriculture, farming, fisheries and forestry	40,221	25,075	65,296
Mining	1,229	434	1,663
Processing industry	20,829	22,038	42,867
Utilities company: electricity, gas, water	150	112	262
Construction	3,924	45	3,969
Trading, retailer, restaurant, hotel	5,080	8,121	13,201
Transportation, warehousing, telecommunication	342	383	725
Finance, insurance	6,427	4,716	11,143
Public services	14,226	40,976	55,202
Total	92,428	101,900	194,328

Source: Ministry of Manpower and Transmigration

Profile of the survey respondents

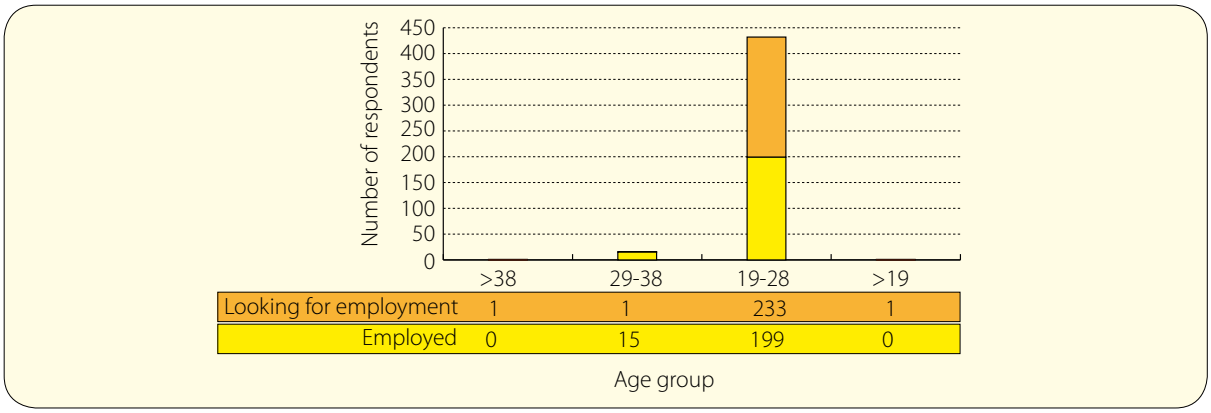
Figures 5, 6 and 7 summarize the profiles of the respondents by sex, age and level of education.

Figure 5: Profile of respondents by sex



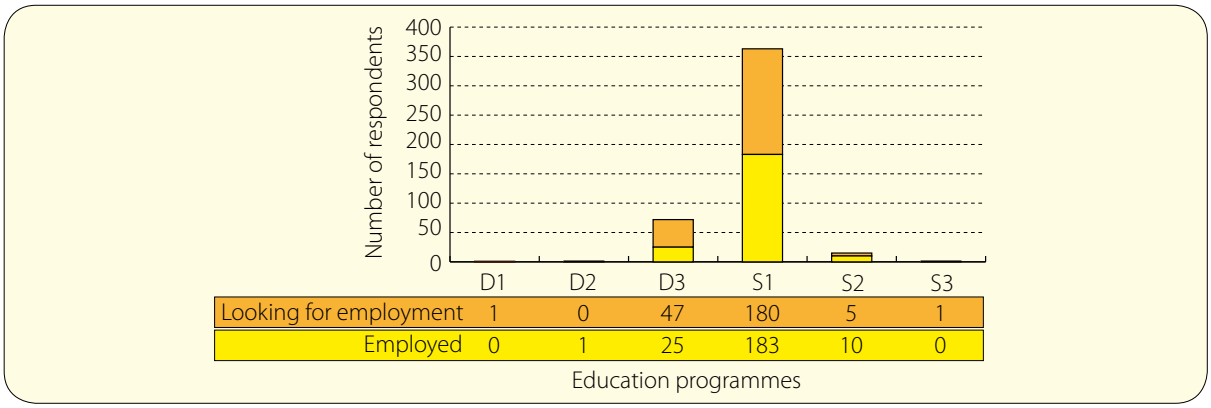
Source: Survey data

Figure 6: Profile of respondents by age



Source: Survey data

Figure 7: Profile of respondents by level of education



Source: Study survey data[7]

More male graduates were employed compared to female graduates, and more female graduates were looking for employment than their male counterparts (Figure 5). The majority of the respondents looking for employment were aged 19 to 28 years (Figure 6). Most of the respondents had an undergraduate degree (S1) with an equal distribution between those who were employed and those seeking employment (Figure 7). The job fair appeared to attract more fresh graduates than those with a master's or higher degree. This observation further reinforces the need to focus on the employability of undergraduate students.

Profile of employed graduates

Out of the 525 respondents, 291 were employed graduates. However, the question whether there are enough jobs to match the number of graduates looking for jobs remains a major concern, according to the data shown in Figures 3 and 4.

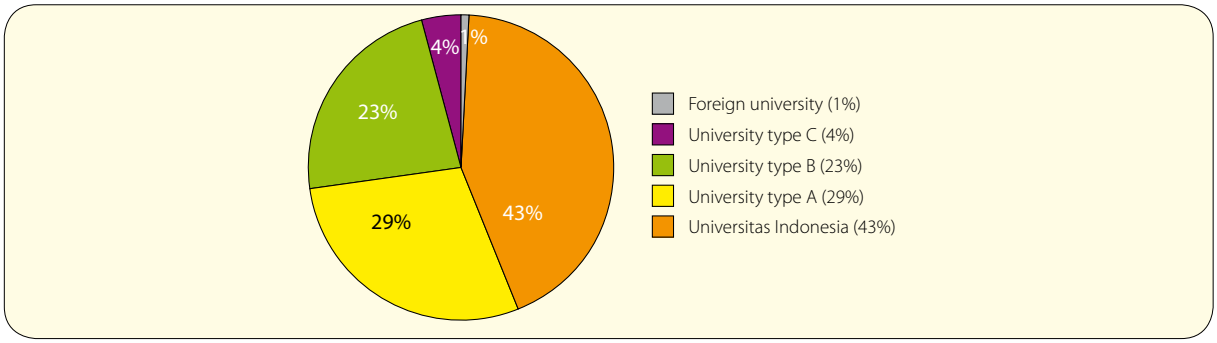
The respondents were graduates from the following types of university:

- Universitas Indonesia;
- Universities around Jakarta area, i.e., Jabodetabek area (University Type A);
- Universities in Java outside of Jakarta (University Type B);
- Universities outside of Java (University Type C); and
- Foreign universities (outside of Indonesia).

7 D = diploma; S = strata. D1 = one year diploma; D2 = two year diploma; D3 =a three year diploma; S1 = four year bachelor's or undergraduate degree; S2 = two year master's or postgraduate degree; S3 = three year doctoral or postgraduate degree.

Figure 8 shows that 72 percent of the employed respondents were graduates of universities in the Jakarta region (i.e., Universitas Indonesia and University Type A). This is not surprising since the survey was conducted in Jakarta itself. However, more than 90 percent of the respondents graduated from universities in Java, indicating that a substantial number came from further away to take advantage of the job exposition in their search for information and better job opportunities.

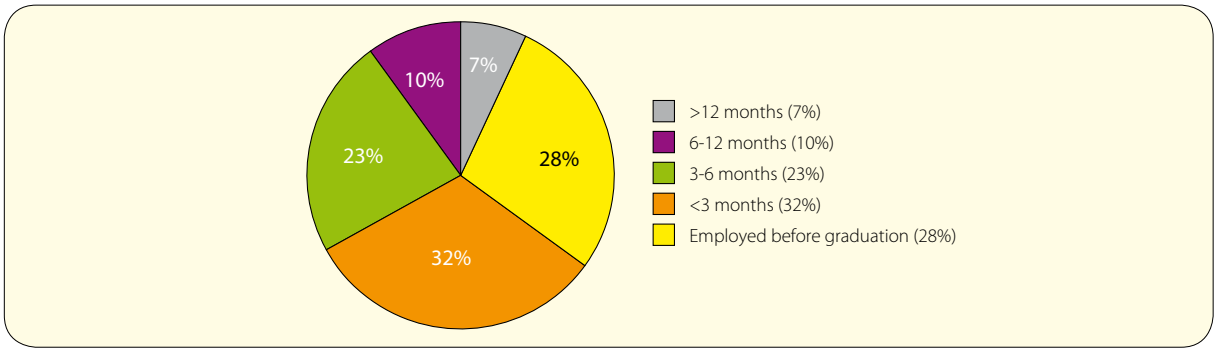
Figure 8: Survey respondents who are graduates from higher education institutions



Source: Survey data

Figure 9 shows that 28 percent of employed respondents found jobs even before graduation, 32 percent got their first job in less than three months and 23 percent within three to six months. Using the lead time of 6 months or less as a measure to gauge whether graduates are readily employable, the 83 percent who got their first job within six months indicated a high level of employability. However, when trying to extrapolate this finding to the whole of Indonesia, it would be prudent to note that most of the respondents were graduates from universities in Java only.

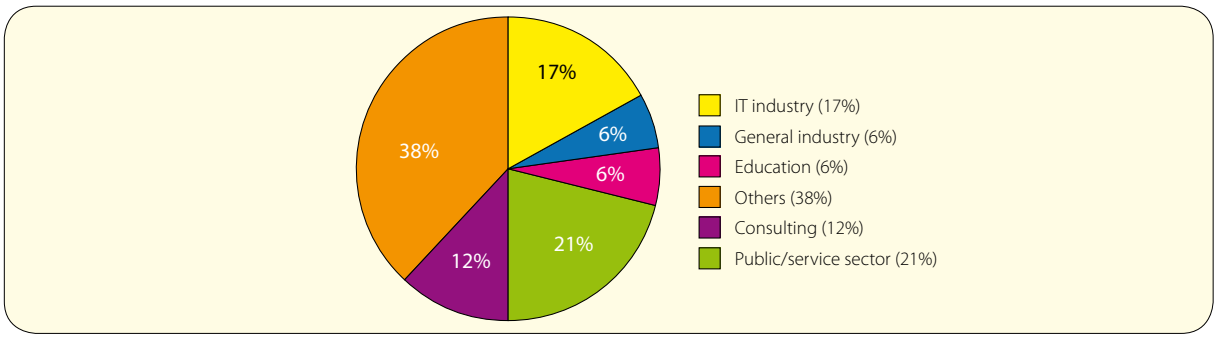
Figure 9: Lead time to first employment



Source: Survey data

Information on labour market demand is important to ensure that HEIs are producing valuable human resources where they are most needed. From Figure 10, it can be seen that 21 percent of the employed graduates were absorbed into the public/service sector, 17 percent into the IT sector and 12 percent into consulting services. A rather large proportion (38 percent) selected the "others" category, making it difficult to have a more detailed picture of their area of work. This group could also have included self-employed graduates, which might have helped to explain the 83 percent who were employed within six months after graduation. As a comparison, a tracer study of Universitas Indonesia graduates revealed that 50 percent of them worked in the private sector, 11 percent in manufacturing, while only 3 percent were self employed (Syafiq and Fikawati, 2008).

Figure 10: Field of work

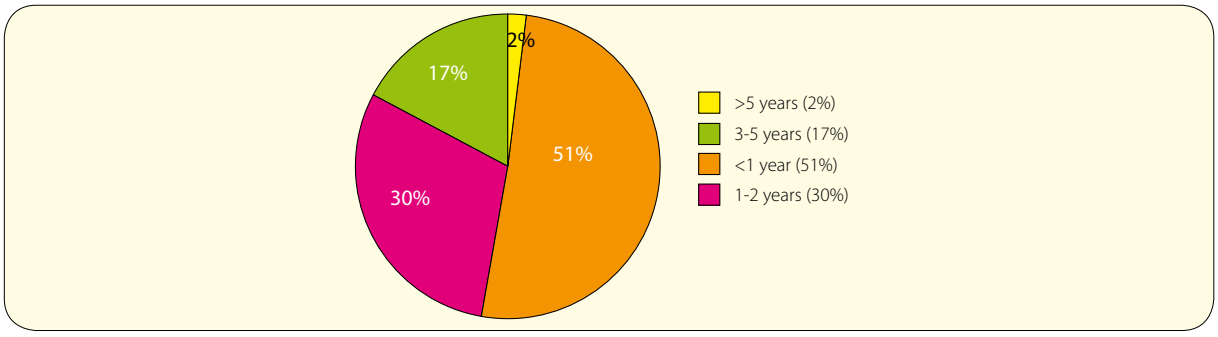


Source: Survey data

Figure 11 shows that 51 percent of the respondents worked less than one year at their current place of employment and 33 percent up to two years, indicating a relatively new and transient workforce. Figure 12 reveals that the majority of employed graduates thought their education background and training matched their current employment. Yet Figure 13 points out a high level of job dissatisfaction: 77 percent were dissatisfied with their current employment. Figure 14 highlights the mobility of young employees with 22 percent having moved once, 29 percent having moved at least twice and 6 percent more than three times prior to their current employment.

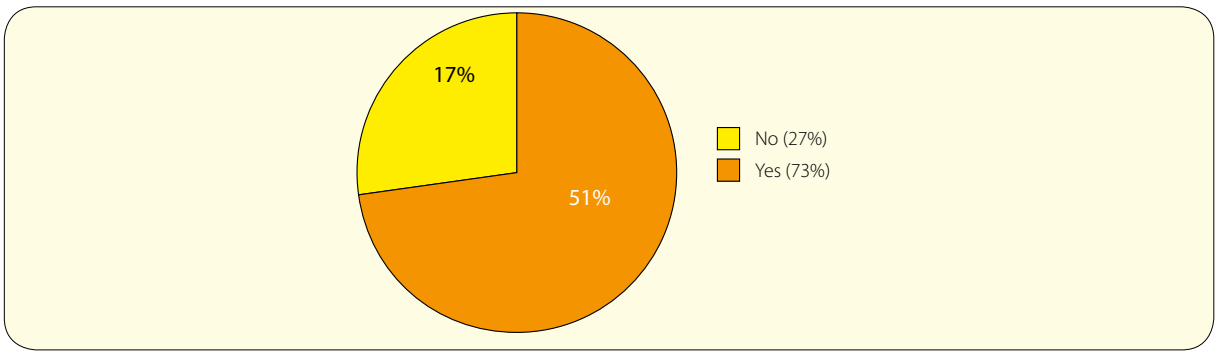
The 2008 tracer study of Universitas Indonesia graduates found that more than 66 percent of the respondents had other jobs prior to their current employment (Syafiq and Fikawati, 2008). This finding suggests that job satisfaction might also be an issue for their cohorts. Likewise, the length of first employment varied between 6 months to 2 years for Filipino graduates (De Guzman and De Castro, 2008). Perhaps this is a trend common among fresh graduates looking for options to improve their job prospects. Considering the high level of job dissatisfaction among the newly recruited graduates in the current Indonesian study (Figure 15), companies are likely to face high turnover rates if nothing is done to address the issue of job satisfaction, which can be influenced by many factors, including salary scales. While not definitive, Figure 16 shows that those earning higher salaries stayed longer in their jobs.

Figure 11: Length of work at current company



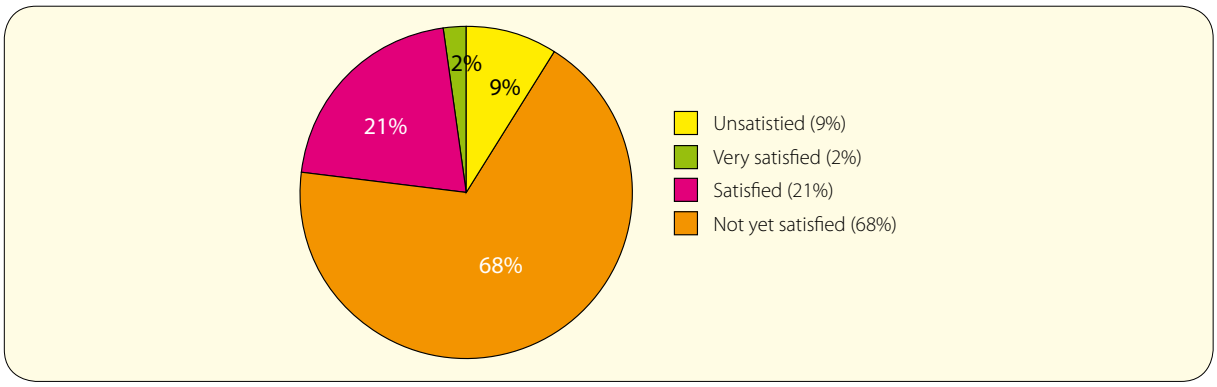
Source: Survey data

Figure 12: Match of educational background and current employment



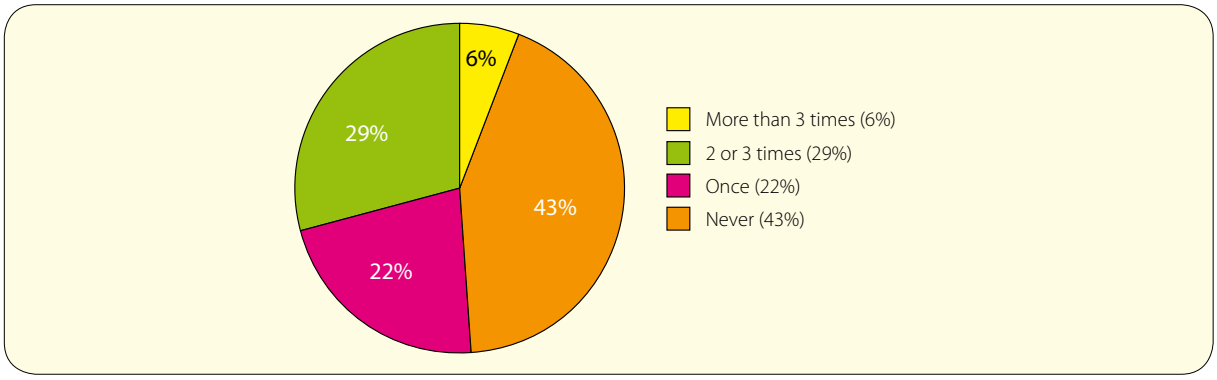
Source: Survey data

Figure 13: Job satisfaction



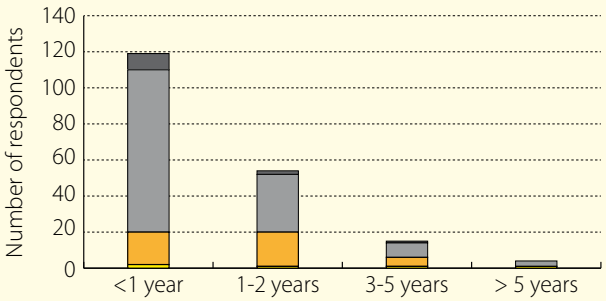
Source: Survey data

Figure 14: Change of employment



Source: Survey data

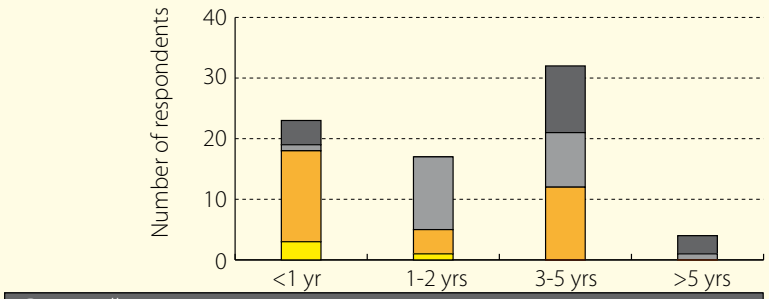
Figure 15: Length of work and job satisfaction



	<1 year	1-2 years	3-5 years	> 5 years
Unsatisfied	9	2	1	0
Not yet satisfied	90	32	8	3
Satisfied	18	19	5	0
Very satisfied	2	1	1	1

Source: Survey data

Figure 16: Salary level and length of work



	<1 yr	1-2 yrs	3-5 yrs	>5 yrs
>Rp 10 million	4	5	11	3
Rp 5-10 million	1	5	9	1
Rp 2-5 million	15	4	12	0
<Rp 2 million	3	1	0	0

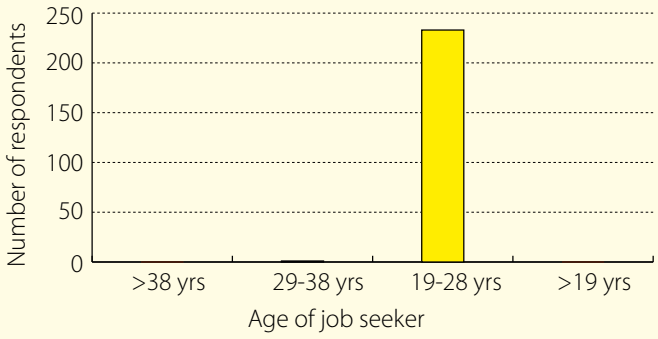
Source: Survey data

Profile of graduates looking for employment

The number of respondents included in this category is 234. Whole female respondents looking for jobs outnumbered their male counterparts (Figure 5), the number of jobs available to females exceeded that of males (Table 1). In Indonesia, it is possible to specify the preferred sex in job advertisements without any legal implications.

Most of the surveyed graduates looking for employment were between 19 and 28 years of age (Figure 17) and more than 95 percent of them were single. Majority of them (95 percent) graduated in the last three years, with 180 having a bachelor's degree and 47 with a three-year diploma (see Figure 7). It can be surmised that there was a wait of at least two months to three years before some of the respondents found employment, in sharp contrast to employed graduates who waited less than 6 months for their first job. Unfortunately, the survey was not designed to find out if the majority of graduates looking for employment graduated within the last year.

Figure 17: Age distribution of job seekers

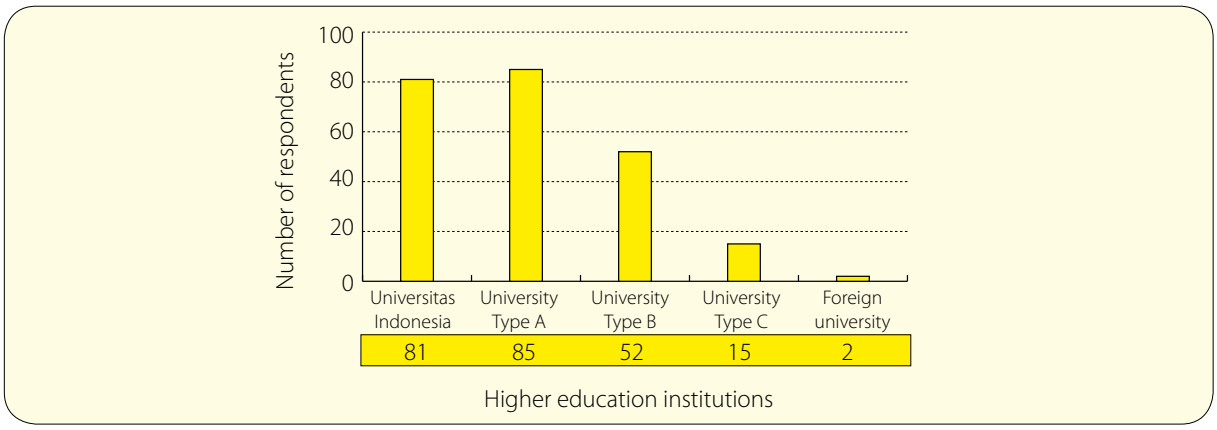


Source: Survey data

As can be seen from Figure 18, the majority of respondents looking for jobs were from universities in Java with more than 50 percent originating from universities within the Jakarta region. As a consequence, many preferred to work in the Jakarta area, although Figure 19 also indicates that some were looking for employment outside of Java and abroad.

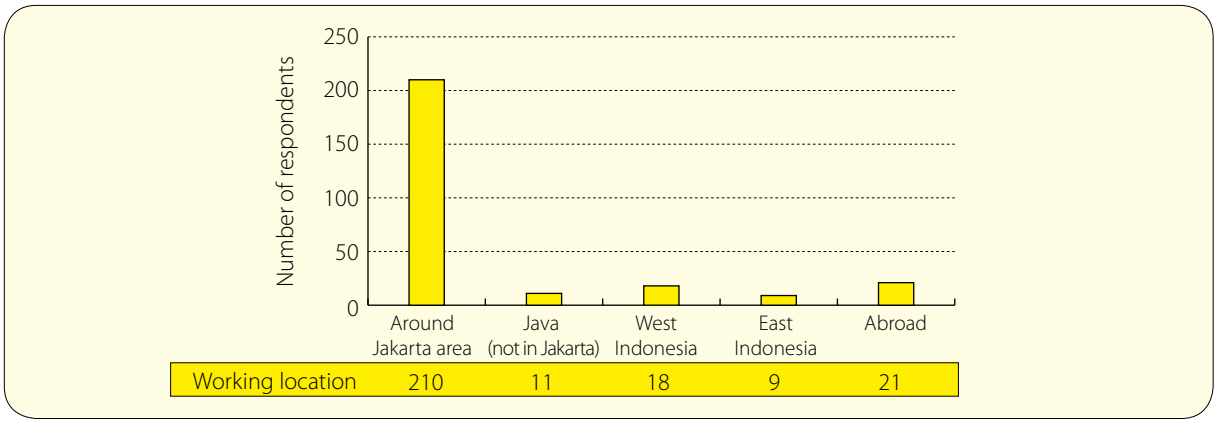
It should be noted, however, that those looking for jobs in the Jakarta region were not from Universitas Indonesia or from Type A universities only (Figure 20). In fact, 22 percent were from universities outside of Jakarta. Moreover, about 5 percent in the Jakarta region were graduates of universities from other parts of Indonesia, while Figure 21 indicates that the preferred location for work after Jakarta is abroad, especially for graduates of Universitas Indonesia.

Figure 18: Higher education institution of job seekers



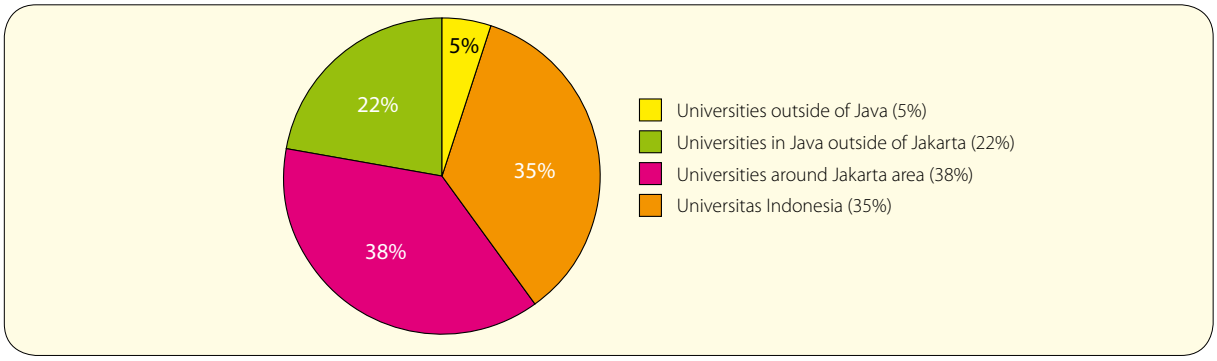
Source: Survey data

Figure 19: Preferred work location



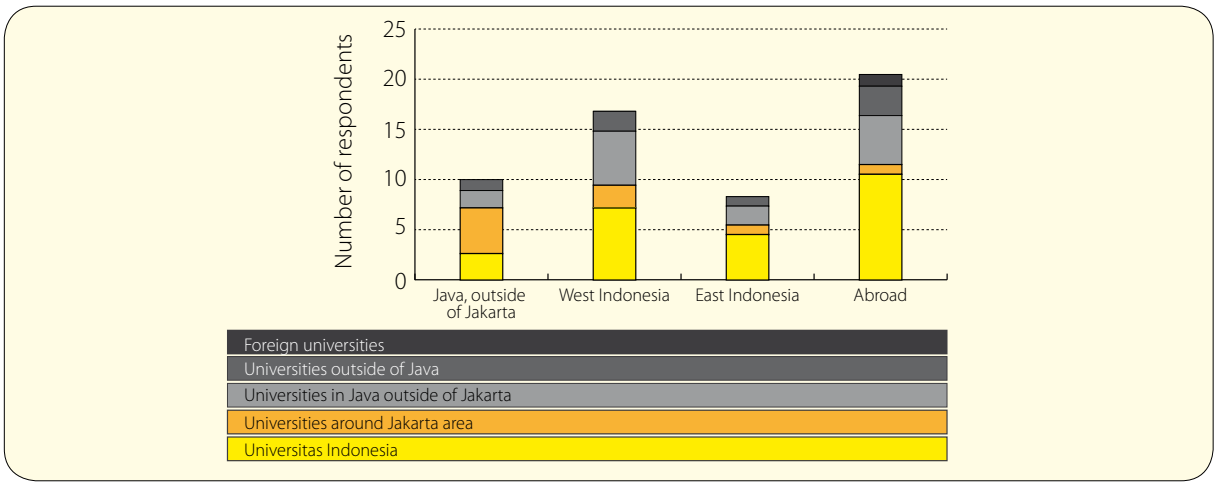
Source: Survey data

Figure 20: Jakarta area as preferred work location



Source: Survey data

Figure 21: Preferred working location



Source: Survey data

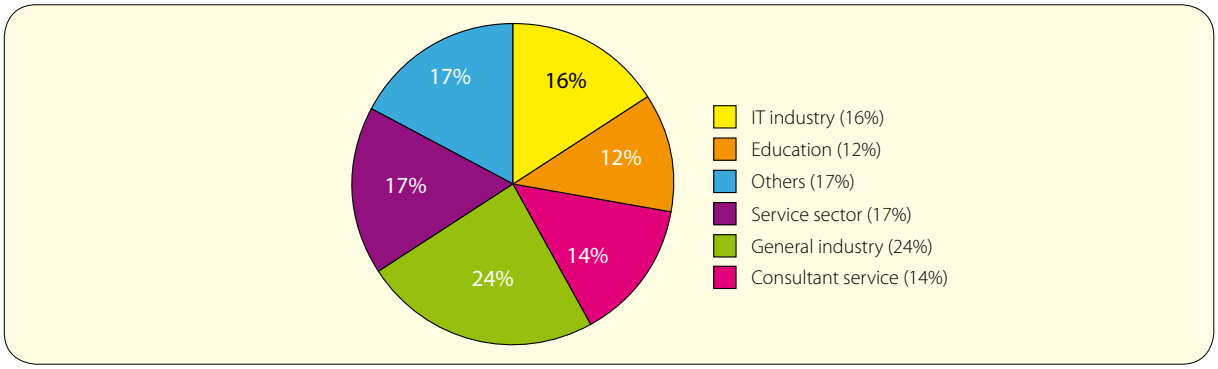
This might indicate that graduates are confident that their skills honed in an Indonesian university can fulfil the requirements to work abroad. Further investigation is needed to see how jobs abroad absorb Indonesian graduates regardless of their field of study or location of their university.

The respondents' preferences for area of work (Figure 22) are spread evenly across the disciplines. This provides an interesting contrast to the actual field of employment presented in Figure 10. For example, while 24 percent cited general industry as their preferred choice, only 6 percent are working in that area. Similarly, 12 percent indicated a preference for education, only 6 percent are actually employed in that sector (Table 5). Again, 17 percent had opted for "others", but 38 percent ended up working in this undefined area.

This finding is rather significant given that most of the graduates also said that they had applied for a job related to their field of study (Figure 23). This divergence underscores a stark reality that many graduates are not working in their preferred areas even though they had applied for jobs in their area of specialty. This may be due to many factors, including a shortage of job opportunities and downturn in the sectors, but the graduates' employability attributes should also be questioned.

It is also interesting to see that many graduates favoured employment in the private sector (Figure 24). This inclination towards the private sector is a common aspiration among the graduates from all universities in and outside of Jakarta (Figure 25). The question is, whether this preference is due to the graduates' perception that their skills are more suited for the private sector, or that the private sector pays higher salaries and better benefits? Unfortunately, the survey results could not lead to any concrete conclusions.

Figure 22: Preferred field of area

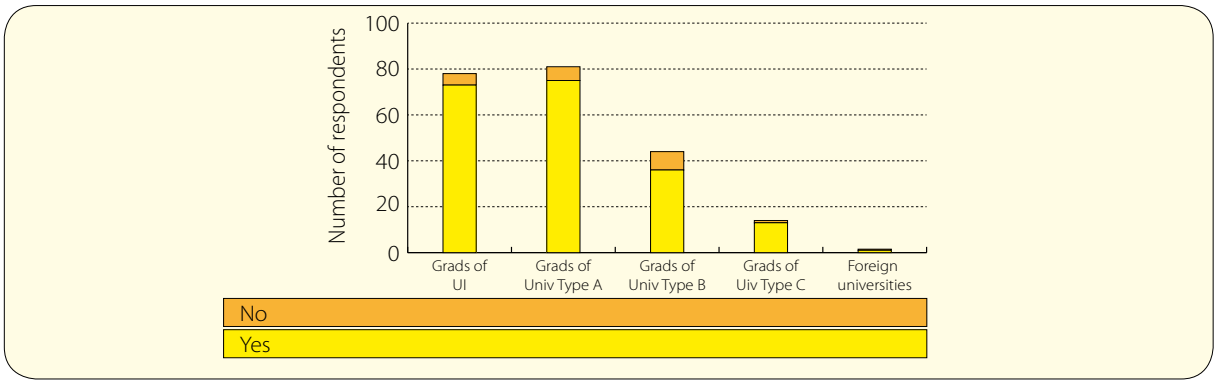


Source: Survey data

Table 5: Areas of employment

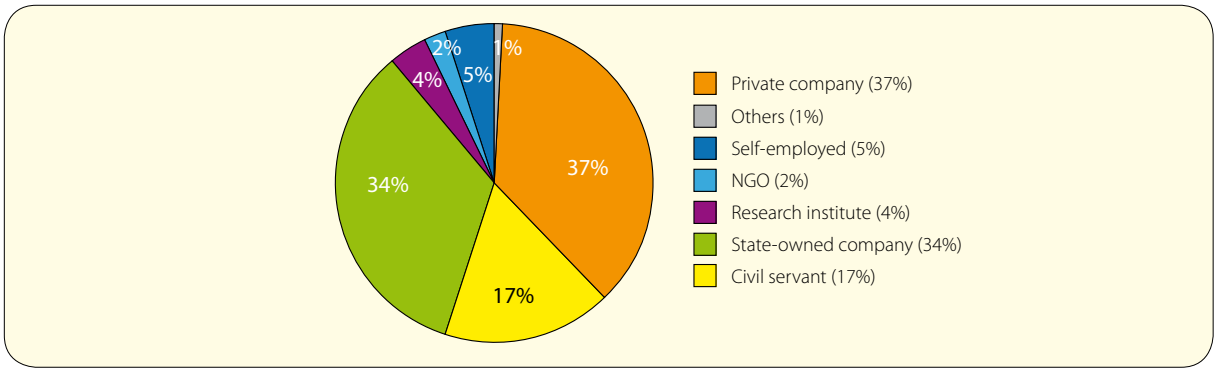
Sector	Preferred area of work (%)	Actual area of work (%)
IT	16	17
General industry	24	6
Education	12	6
Public/service	17	21
Consultancy	14	12
Others	17	38

Figure 23: Job applied for related to graduate's field of study



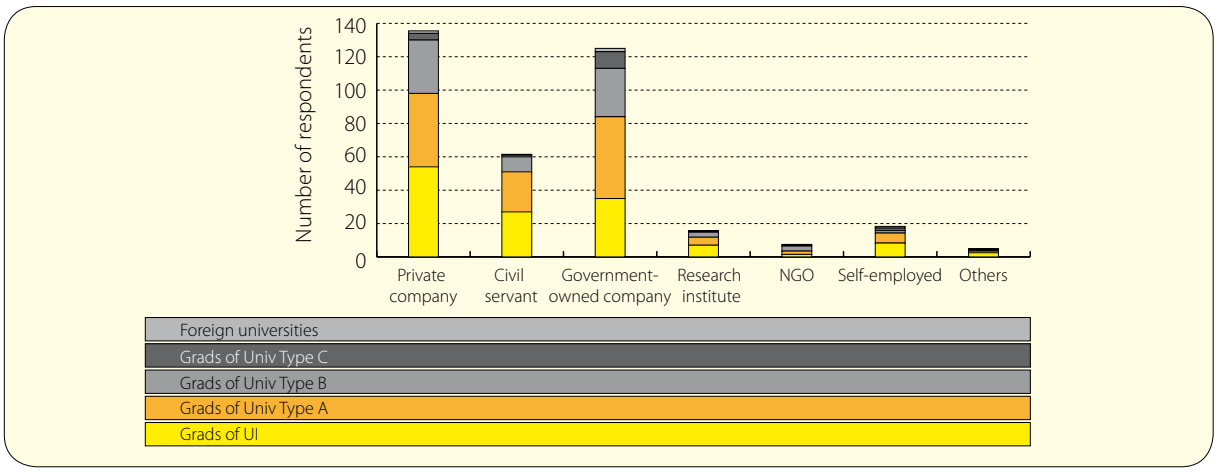
Source: Survey data

Figure 24: Preferred type of employer



Source: Survey data

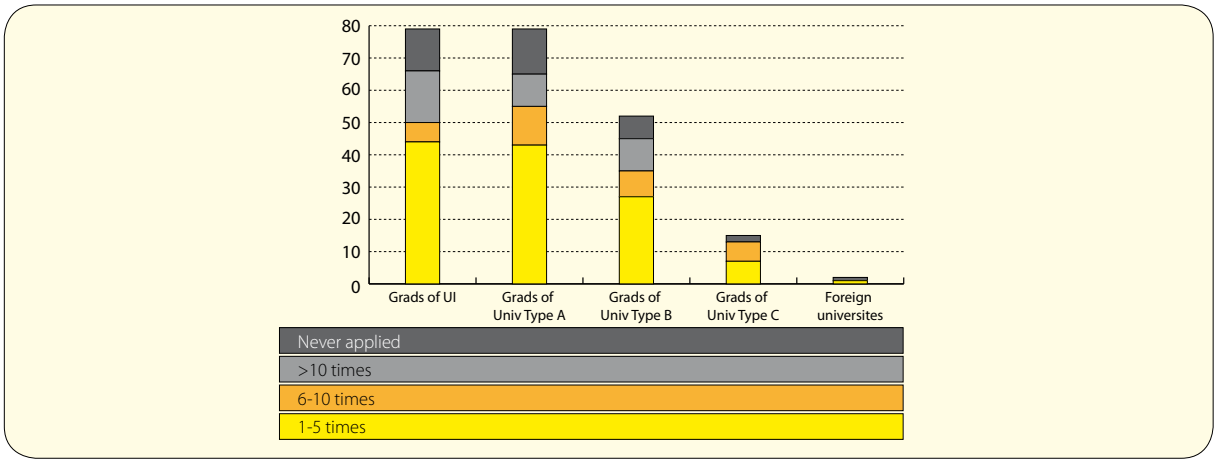
Figure 25: Preferred type of employer by universities



Source: Survey data

Figure 26 analyzes how a graduate secures employment. It shows that the majority of the graduates surveyed had submitted at least five job applications to land a job.

Figure 26: Attempts to obtain a job



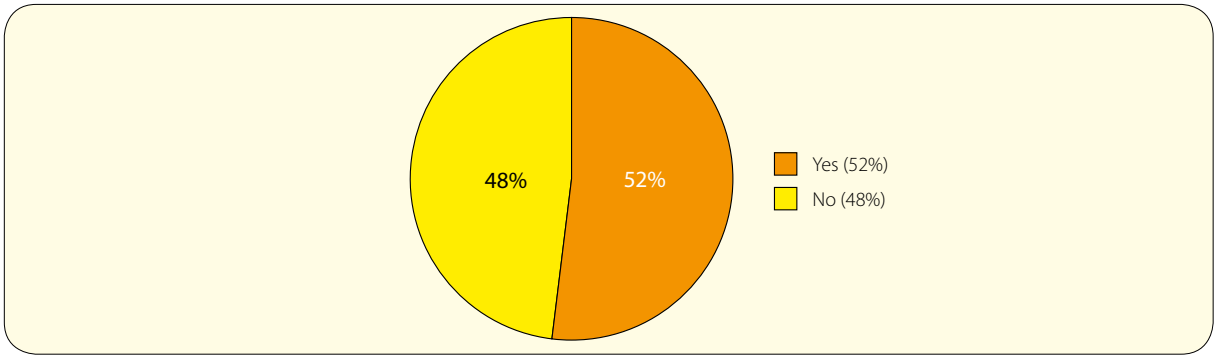
Source: Survey data

Employers on graduates' employability

An employability performance indicator cannot be concluded simply from the employment rates of HEI graduates. While some definitions of employability recognize that it is closely linked to the rapport between higher education and employment (Harvey, 1999), this relationship raises crucial questions about the purpose and structure of the higher education system. Employability is not about only training or providing additional skills to gain employment; it should also be about how the higher education system through its many institutions develops critical, reflective and empowered learners who will be highly sought after and valued by employers. The employers' perspective of the kind of graduates they will hire is important to help HEIs decide the direction of their educational goals. This section discusses the survey results gathered from 29 respondents representing various types of state-owned enterprises during a one-day workshop involving many government-owned companies.

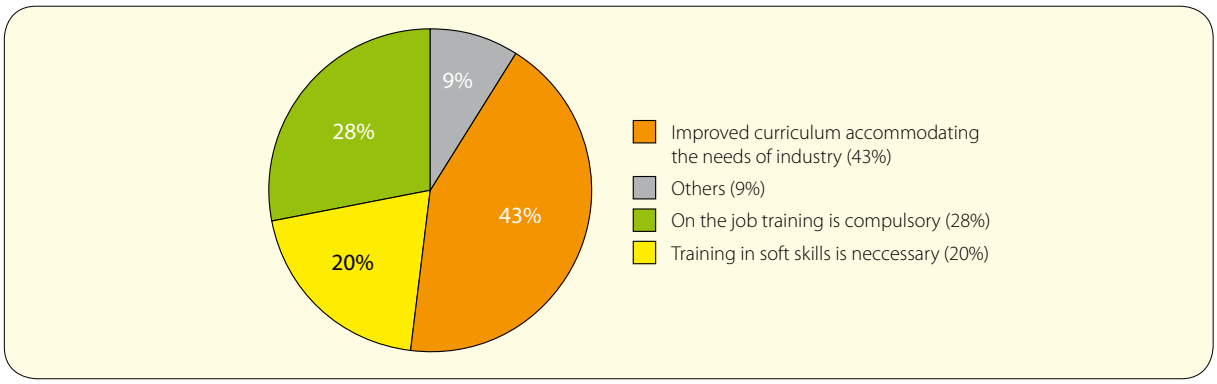
When asked if the graduates' skills are those required by their organizations, only a slight majority of employers replied positively (Figure 27). Furthermore, 43 percent indicated that they would like the higher education curricula to meet the needs of industry. On-the-job training and improving the graduates' soft skills were also pointed out as areas that needed more attention (Figure 28).

Figure 27: Match between graduate skills and needs of business



Source: Survey data

Figure 28: Employer's expectations



Source: Survey data

According to 83 percent of the employers surveyed, the most important criterion for hiring new employees lies in the results of the placement test conducted by their companies. The test includes a battery of assessments on technical skills/knowledge related to the job, psychological test, medical test and scholastic test. Interestingly, only 52 percent of the employers considered the grade scores (Grade Point Average) to be an important factor when hiring a new employee, while 41 percent cited work experience to be relevant.

The attributes most desired by the employers are listed below:

1. Communication skills
2. Teamwork skills
3. Integrity
4. Intellectual capacity
5. Self confidence
6. Personality/individual character
7. Planning skills
8. Writing skills
9. Computing skills
10. Analytical and problem solving skills
11. Other skills

The top four skills sought by employers are integrity, intellectual capacity, team work skills, analytical and problem solving skills (in order of priority). When employers are asked to choose four skills which HEIs should emphasize, they selected, in order of priority, analytical and problem solving skills, integrity, team work skills and personality.

These observations reaffirm the findings from other studies (De Guzman and De Castro, 2008; Syafiq and Fikawati, 2008; DGHE-MONE. 2009). Personal communication with representatives from related institutions echoed similar sentiments expressed by employers as reported by Syafiq and Fikawati (2008) and Universitas Indonesia (2009):

- Graduates need more exposure to industry. There should be links with appropriate industry.
- Graduates need to develop skills to identify and analyze problems critically, which may be done through problem-based exercises.
- Soft skills for graduates are built through methods of delivery, not simply through a high level curriculum structure.

Clearly, there is strong support for industries to play a bigger role in improving the employability of graduates. While the mission of most HEIs is broader in scope than just supplying a steady stream of skilled workforce, it is also expedient to align their educational programmes with the demands of the workplace within or outside the formal curriculum structure.

Conclusions

The Indonesian economy and labour structure are shifting from agriculture-based towards the industry and service sector. However, the shift in economic structure has not been followed by the profile of the labour market. The low-skilled agriculture sector still dominates the labour market, therefore the structure of the workforce is also still being dominated by lower education. As the economy and market are modernizing, the mismatch of higher education in responding to the demand of the job market becomes noticeable, as is reflected by high graduate unemployment rates. However, this study indicated more optimistic views of graduates seeking job and those already employed.

Since the survey was conducted in the Jakarta area, it was not surprising that most of respondents were graduates from universities in the vicinity. The email and web surveys only managed to capture responses from graduates who were already employed. The key findings are summarised below:

- Many of the graduates looking for employment felt that the jobs they applied for were related to their field of study regardless of the HEI they had attended.
- Most of the graduates concurred that their academic training matched the requirements of their current employment, indicating that the HEIs had prepared the students sufficiently to meet labour market demands.
- Jakarta was the preferred location for work, largely because most of the respondents were from the capital. However, the graduates also indicated that they were looking for employment overseas.
- The graduates had also submitted many job applications before they were able to find employment. Still, many found employment within six months of graduation.
- Graduates looking for employment had expressed a preference for working in the private sector.
- Regardless of the length of time in their current positions, the majority of employed graduates were dissatisfied with their current jobs. For those who had expressed some degree of job satisfaction, the salary level appeared to have been an influential factor.
- Many employers wanted the HEIs to improve their curricula to match the needs of the industry by including on-the-job and soft skills training as part of students' skill development.
- Employers prioritized integrity, intellectual capacity, team work skills, and analytical and problem solving skills as the most desirable characteristics they were looking for from the graduates.

The findings of this study provide a view of the employability of higher education graduates in Indonesia. It should be noted, however, that the sample does not represent the wide range of characteristics relevant to the context of graduate employability in the country. Given that Indonesia is an archipelago of over 17,000 islands and 33 provinces, with big cities and smaller towns, the local conditions and requirements are bound to be varied.

The majority of the respondents have an education equivalent to a bachelor's degree, and therefore, the findings are based on their education and training. It is likely that graduates with a three-year diploma education will show a different employability profile considering that their training is more geared to meet the demands of the workplace. Further studies using larger sample sizes, covering a greater geographic spread, and differentiating the various disciplines will be necessary to provide a more in-depth insight into the profiles of graduates and their attributes of their employability.

Recommendations

Graduate unemployment is dependent on many factors. Creating enough jobs to meet the increasing numbers of highly educated young people is a priority of governments. HEIs, on the other hand, have to ensure that they are producing the right kind of graduates who can meet the demands of employers. Likewise, industries have to work hand in hand with the governments and HEIs to complement their efforts in preparing the students to be a productive and skilled workforce when they graduate.

However, in times of economic hardships and intense competition, it is not easy for fresh graduates to find jobs that match their expectations even though they may think they are highly qualified. To address this issue, it may be necessary for graduates to be innovative and create jobs for themselves, rather than wait for lucrative jobs to land on their laps. Such a paradigm shift has been initiated by the government by introducing an entrepreneurship skills programme and by providing seed capital for new graduates to start up their own businesses.

HEIs should take special note that integrity, intellectual capacity, teamwork skills, and analytical and problem solving skills are the four top priority skills sought after by the employers when hiring new employees. They may have to re-design or adapt their curriculum to ensure that these qualities are instilled in their students, and this should be done in collaboration with the industries.

Therefore, a closer relationship between universities and industries is highly recommended. While HEIs develop curricula that are adaptive to the needs of industries, likewise the employers should open its doors to students for internships and training. More industry involvement in the design of curricula, updating courses with the industries' needs in mind, and defining the competence and qualifications needed by the industries will certainly benefit all the stakeholders.

Graduates also have to take some responsibility in honing their employability. It is not enough to possess academic knowledge and good grades. Job applicants who stand out are those who have demonstrated their soft skills, particularly those that are highly desired by employers.

Thus, it is clear that the issues of graduate employment and graduate employability do not depend only on one party, but involves the government, HEIs, industries and students. Working together to develop viable strategies and solutions is the only way forward.

As Indonesia's economy is shifting toward the industry and service sectors, more highly trained and skilled work force will be needed to fill the demand. One of the major challenges of HEIs is how to keep their programme relevant to the demand and requirement of the emerging economy.

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Employability of graduates in Malaysia

Morshidi Sirat, Chan Lean Heng, Munir Shuib, Shukran Abdul Rahman, Seri Rahayu Ahmad Kamil and Jasvir Kaur Nachatar Singh[8]

Introduction

Universities are recognized as central actors in human capital development but there is growing international discourse on the role of higher education in social development (GUNI, 2008). In the context of the present shift from knowledge to innovation economies, the role of universities in the development of socially conscious and active citizens is highly important.

Various forums and publications have discussed how higher education institutions (HEIs) can develop critical discourses which societies can use to continually reflect on their evolution towards positive social transformation. These forums and publications also discuss how HEIs could strengthen their role as agents of transformation, facing both local and global challenges. This would entail efforts to reorient their vision and mission towards the creation and distribution of socially relevant knowledge.

HEIs clearly have an important role in producing citizens who can contribute to social transformation. Strengthening the social responsibility of HEIs is essential for achieving harmonious global development. Still, HEIs are under attack from employers and the government for not producing graduates with the skills required by the industries. Thus, questions are being raised regarding the role of HEIs and whether changes are needed.

This chapter discusses the situation in Malaysia with regard to graduate unemployment, followed by an examination of the concepts of "employability" and "graduateness" and the role of universities. It also presents the perceptions of various stakeholders (government, employers, graduates and academics) on employment, employability of graduates, and the need for changes in Malaysian higher education.

Changes in the Malaysian economy and effects on graduate employment

Malaysia has an enormous number of graduates entering the local employment market every year, and this trend shows no signs of slowing down. At the same time, the 1996 financial crisis had negative effects in terms of rising unemployment. Even now, Malaysia continues to face the stark reality of rising graduate unemployment in spite of significant changes in the Malaysian economy since 1996.

It is in the context of this continuing supply of graduates against a backdrop of changing economic fortunes and employment structures that issues concerning graduate unemployment and employability have been raised. Policy makers, academics and industry have revisited the issue regarding the role of the university as a centre for the development of intellectual, creative and other higher level skills versus the need to supply workers for the labour market (university as a factory). Facing criticism from both the government and private industries, universities are being accused of producing unemployable graduates.

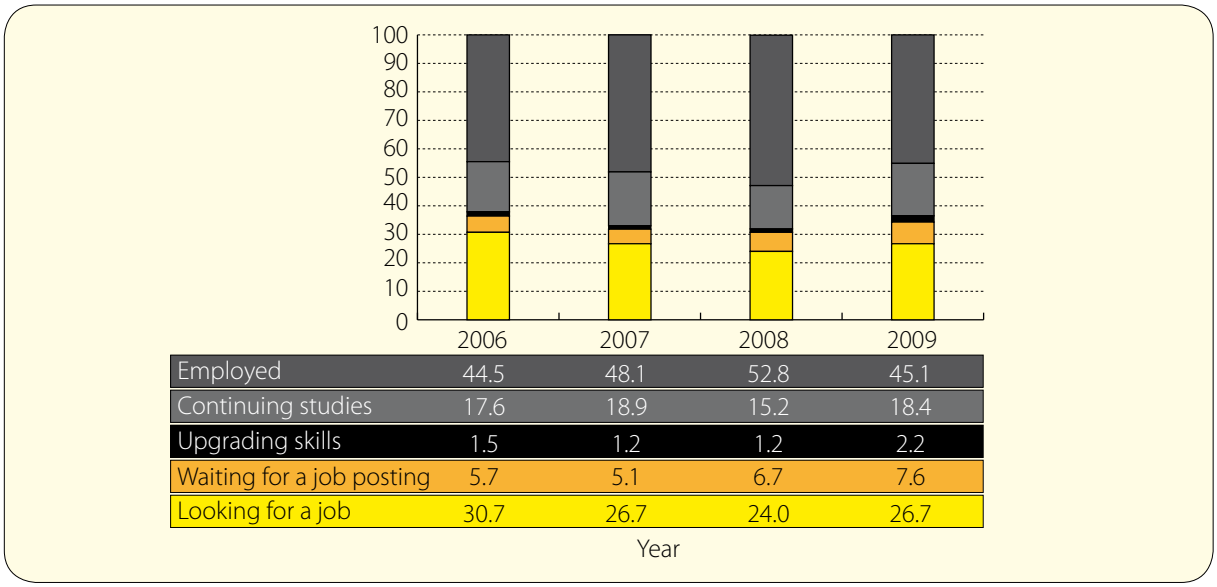
Numbers of graduates and employment patterns

The higher education reforms of 1996 resulted in substantial changes in Malaysia's higher education landscape, especially in terms of a marked increase in student numbers and diversification of providers of higher education comprising public universities, private universities, private colleges and transnational providers (Morshidi, 2006).

8 Universiti Sains Malaysia, Malaysia.

In 2007, the total number of graduates from all levels of studies at public HEIs was 85,448 and an equally astounding number of 83,432 graduated from the private system. In 2008, the public system graduated 59,844 students, while the private HEIs produced 26,590 graduates at the bachelors' degree level (MoHE, 2008). A large proportion of these graduates had difficulties in finding employment. As shown in Figure 1, the percentage of graduates looking for jobs ranged between 30.7 percent in 2006 and 24.0 percent in 2008.

Figure 1: Graduate employment pattern, 2006-2009



Employment rates were higher among graduates with post-graduate degrees, as indicated in Table 1. Graduates of technical studies, information and communication technology (ICT) and education were more likely to be employed compared to graduates of arts, social sciences and sciences, as indicated in Table 2.

Table 1: Graduate employment status, by level of studies, 2006-2009

Level of studies	2006		2007		2008		2009	
	Employed	Not yet employed	Employed	Not yet employed	Employed	Not yet employed	Employed	Not yet employed
PhD	92.3	7.7	96.2	3.8	97.2	2.8	97.2	2.8
Master	89.6	10.4	90.2	9.8	92.7	7.3	91.8	8.2
Postgraduate diploma	95.8	4.2	86.1	13.8	99.6	0.5	97.6	2.4
First degree	63.6	36.4	70.4	29.7	75.4	24.7	70.9	29.2
Advanced diploma	68.0	32.0	72.9	27.2	74.2	25.8	66.5	33.5
Diploma	77.2	22.9	77.8	22.2	78.5	21.5	77.5	22.6
Certificate	67.3	32.7	65.4	34.5	61.5	38.5	59.3	40.6
Professional	71.7	28.4	88.9	11.1	94.4	5.6	91.4	8.6
Total percentage by year	69.3	30.7	73.3	26.7	75.9	24.1	73.3	26.7

Source: MoHE, various years.

Table 2: Employment status of undergraduate graduates, by group of specialization, 2006-2009

Specialization	2006		2007		2008		2009	
	Employed	Not yet employed	Employed	Not yet employed	Employed	Not yet employed	Employed	Not yet employed
Arts and Social Sciences	55.5	44.5	63.9	36.1	69.8	30.2	64.6	35.4
Sciences	52.4	47.6	65.6	34.4	69.1	30.9	66.9	33.2
Technical	65.2	34.9	70.6	29.4	75.8	24.2	69.8	30.2
Information & Communication Technology	61.1	38.9	67.7	32.3	77.1	22.8	73.3	26.7
Education	97.0	3.0	96.4	3.6	96.9	3.2	94.9	5.1
Total percentage by year	63.6	36.4	70.3	29.7	75.3	24.7	70.9	29.1

Source: MoHE, various years.

Government measures towards increasing employability

Since the mid-2000s and with the establishment of the Ministry of Higher Education (MoHE) in 2004, the issue of rising unemployment levels among local graduates in certain disciplines has remained high on the Malaysian government's agenda. There is a general perception, particularly among employers, that unemployment of HEI graduates is due to their lack of generic skills and serious inadequacy in terms of work-related competencies.

In an effort to address this issue, the MoHE initiated a move to combine conventional discipline-related courses and entrepreneurship courses. Not only is the curriculum being revised to include subjects such as small business management, skills and competencies such as English language, team work and analytical skills are also being promoted, posing challenges to the structure, system and culture of universities. The MoHE argues that with such a curriculum, graduates will be exposed to skills that would be useful for them to start their own business, creating jobs for themselves and others in the process.

While many stakeholders, particularly employers, have different opinions about what needs to be done by universities to improve the employability of local graduates, medium- to long-term solutions remain unclear. Despite strategies and programmes introduced by the government to foster employability among graduates, unemployment among local graduates remains high.

Graduate employability: concepts, interpretations and issues

The concept of employability

The term employability has gained prominence of late because of the changing world of work. Employability is used interchangeably with other terms such as core skills, key skills, and common skills. To Saterfield and McLarty (1995), employability skills are the skills required to acquire and retain a job, including job-specific skills, academic skills and a range of attitudes and habits. Communication, problem solving and management skills are also important. According to Hillage and Pollard (1999, p. 83), employability is "(a) the ability to gain initial employment, (b) the ability to maintain employment and make 'transitions' between jobs and roles within the same organization to meet new job requirements, and (c) the ability to obtain new employment if required, to be independent in the labour market by being willing and able to manage employment transitions between and within organizations." It follows

that the concept of employability refers to the competencies a graduate must have in order to find a job.

When viewed in the context of the workplace and employment market, the term employability refers to several situations, as follows:

- The situation in which an individual would be employed because his or her competencies match the demands of a particular workplace and the expectations of potential employers.
- The readiness of an individual to be employed. Thus, an employable graduate is an individual who has completed studies, is currently available for work, has job-related competencies and makes arrangements to start a job (Godfrey, 1986).
- The effort that leads to enabling a student to acquire knowledge, personal and professional skills, and the attitudes that will support his or her future development and employment (Brown, 2006).
- The attributes of a graduate, as a result of education he or she has acquired. With certain competencies, a graduate has higher likelihood to be employed if he or she applies for a job or can create a job.

The Malaysian government and employers are in unison in interpreting employability of graduates as their marketability in the workforce. Employers have increasingly voiced their dissatisfaction to the MoHE about the employability of local graduates, arguing that while many graduates are being churned out of HEIs annually, there is a limited supply of those considered to be of "good quality", and that rising unemployment among graduates is primarily due to mismatch between supply and demand (Morshidi et al., 2009).

From the perspective of employers, the level of "quality" of a graduate refers to their adequacy in terms of the following attributes: self-confidence and soft-skills, especially competence in communicating in the English language, focus and commitment. Surprisingly, employers have not raised other issues which are equally important in terms of employment levels, such as sluggish economic growth. According to a 2004 study by the Institut Penyelidikan Pendidikan Tinggi Negara (IPPTN, 2004), slow economic growth and the changing employment structure have had a significant negative impact on graduate unemployment in Malaysia. Another study undertaken by the IPPTN in 2002 and 2003 (IPPTN, 2003) concluded that while there were some gaps in the curriculum in terms of equipping students with the necessary skills for employment, more needs to be done with respect to graduates' career planning and their overall psychological make-up.

Harvey and Knight (1996) and Harvey and Green (1993) have argued that the "quality" of graduates can be broken down into five related dimensions: quality as exceptional (e.g., high standards), quality as consistency (e.g., zero defects), quality as fitness for purpose (fitting required specifications), quality as value for money (as efficiency and effectiveness), and quality as transformative (an ongoing process that includes empowerment to take action and enhancement of customer satisfaction).

To employers, "good quality" graduates would almost certainly include those who can be integrated into modern profit-oriented organizations and can quickly contribute effectively to these organizations (Harvey and Mason, 1996). Such graduates would exhibit exceptional fitness of purpose and value for money, making them highly demanded by profit-oriented organizations (Morshidi et al., 2009). Employers want to employ graduates for the knowledge and ideas they bring to an organization, their willingness to learn and speed of learning, their flexibility, adaptability and ability to deal with change, their logical, analytical, and problem-solving skills and the impact they have on innovations (Harvey and Mason, 1996).

The role of universities

The concept of employability, as defined by employers and the government gives rise to the question: Should employability serve as the main basis that shapes the direction of universities? HEIs are expected to produce a competent workforce for industries but it can be argued that a university's purpose must not be defined solely by the expectations of employers, but also by the aspirations of the nation. As is increasingly argued, the quality of higher education should not only be measured in terms of the employment rate of graduates but should also be measured by the extent to which higher education has addressed all of its purposes. Universities have the aim of producing fully functional individuals who not only serve in the workforce but must also be actively functioning members in their respective communities. When HEIs are confined to meeting the demands of employers, this neglects the important

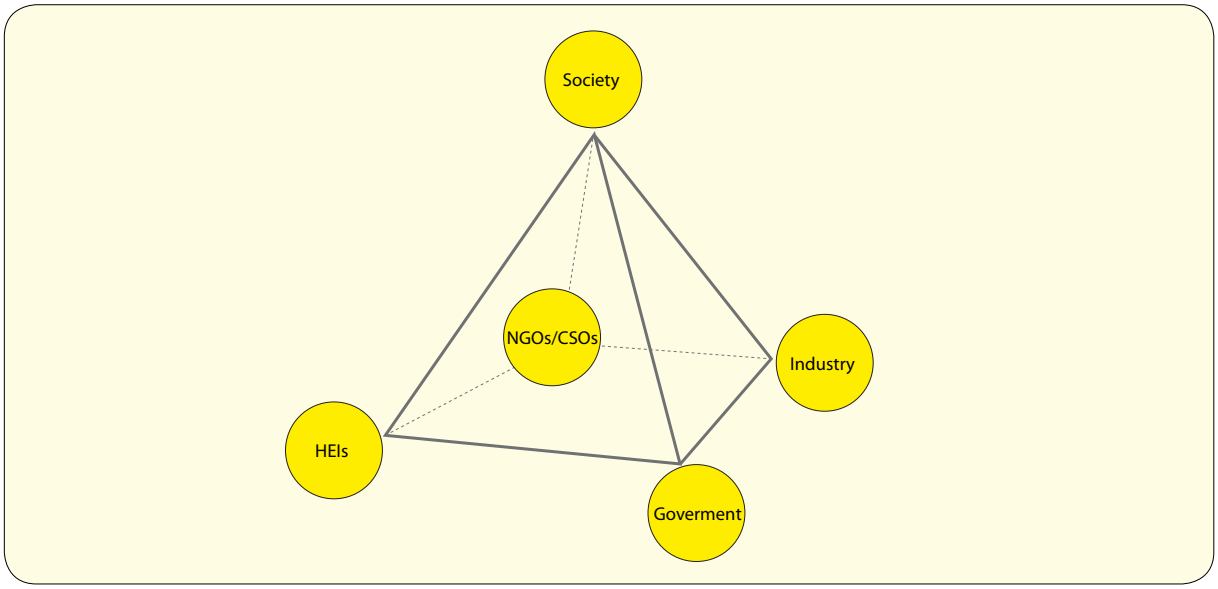
role of universities in nurturing the characteristics that help graduates to function across all aspects of life after they graduate (the concept of "graduateness"). In other words, individuals must not only be geared towards serving the work sector, but must also develop the skills that allow them to benefit their family, community and the nation (Dan, 1999).

Given the many challenges in life that graduates must deal with, it is very important that higher education is concerned with promoting comprehensive excellence amongst university graduates. Of paramount importance is the development of characteristics that epitomize the philosophy of a university and the aspirations of a nation, rather than simply the production of graduates who have the ability to secure employment after completing their studies. Higher education must prepare graduates for all aspects of the outside world: employment, local issues and global problems. Thus, the higher education curriculum must prepare graduates to play adequate roles in discourse on issues such as nuclear energy, climate change and globalization, and to not only fit the needs of the industrial sector.

The task of producing graduates who are prepared for the many challenges of the real world cannot be left only to HEIs but is the responsibility of the entire continuum of the education system, including the primary, secondary, and post-secondary education stages. All education institutions must together discharge the role of developing individuals who contribute to their society.

Input from other relevant stakeholders is also essential in developing individuals with the characteristics that society requires. All stakeholders – HEIs, employers, non-governmental organizations (NGOs), civil-society organizations (CSOs) and the government – must act in unison with a view towards preparing individuals for their social responsibilities and towards shaping society (Figure 2).

Figure 2: Stakeholders responsible for shaping society



Thus, education should not be directed only towards meeting the needs and requirements of employers; as "industry-ready" is not synonymous with "society-ready". Besides, discourse on employability should not be conducted only as a reaction to the unemployment phenomenon, but rather as a part of efforts to develop society in the ideal form.

Graduateness defined

The term graduateness may be a more useful concept than employability as the former includes a range of competencies that go beyond the skills needed for the workplace. While employability implies that graduates possess the qualities required by organizations, graduateness implies that graduates have the attributes that are important for an effectively functioning society. While employability is necessary, it is vital that a graduate is of benefit to society.

Graduateness covers more than just "core skills", "key skills", or "personal transferable skills", and encompasses knowledge, understanding, dispositions, attitudes, and values. Graduateness implies that a graduate has the required attributes that prepare them to contribute to society, not just to prepare them to conform to the expectations of employers.

A graduate with graduateness possesses certain general attributes including the following:

- Critical and creative thinking;
- Preparedness to serve others.
- Personal transferable skills: (a) managing tasks and solving problems (analytical and conceptual thinking, gathering information to assist problem solving and decision making); (b) working with others (understanding how others perceive themselves and the needs of others, and building positive relationships); (c) communication (oral and written); and (d) self-awareness (taking responsibility for one's own learning and development; dealing with pressures and emotions; and showing sense of purpose) (Walker, 1995; HEQC, 1995).
- Cognitive, emotional and moral development and practical competence (Bowen, 1977).

The graduateness of a graduate is not only the responsibility of the higher education sector but the whole education system, encompassing the secondary level and earlier stages including pre-school level. As the responsibility to ensure graduateness does not rely on the higher education sector only, there must be coordination among providers of all levels of education. The high quality of learning in the universities depends on the academic preparedness and motivation of incoming students from secondary schools.

What is a good quality degree?

The concept of graduateness raises the question of whether holding a degree reflects the possession of certain attributes. This question has been reviewed by a number of parties. For example, Otter (1992) states that it is possible for students to graduate without possessing some of the key qualities expected of a graduate. This leads to questions about standards and how to ensure graduates reach a certain quality level.

According to the Higher Education Quality Council (HEQC, 1995a), in order to produce high quality graduates all degree programmes should include the aspects listed below:

- Teaching should be research-informed so that the students may become research-aware.
- Students should be encouraged to develop self-motivating study habits and skills.
- There should be an emphasis on the development of a critical and analytical approach to the theories and concepts learned.
- Students should grasp the impermanence and open-ended character of a discipline's share of, and contribution to, knowledge and understanding.
- Programmes should be provided to equip students with the necessary skills to join professional practice, including both intellectual and practical skills.

Similarly, the Graduate Standards Programme (HEQC, 1995b) suggested that the award of a degree should be linked to the achievement of at least three types of attributes listed below:

- **Field-specific attributes:** A graduate possesses a body of knowledge particular to the field (or fields) studied, and which are relevant to a particular occupation.

- **Shared attributes:** A graduate possesses additional general attributes, which are common to graduates from a particular type of degree. These attributes may be rooted in the common teaching methods, or ethos or educational objective of an institution.
- **Generic attributes:** A graduate possesses generic attributes shared by all or most graduates.

Besides addressing the processes that promote the attainment of these attributes, it is important to ensure the mechanisms to assess the attainment of the attributes are in place to ascertain that students meet an expected threshold for each set of attributes before they become graduates. At the same time, it is important that HEIs provide an environment in which relevant competencies are continuously adapted to meet changing needs of the workplace and society (DfEE, 1997). Students must be able to continuously learn and adapt to change, and graduates should be prepared for lifelong learning. If this could be achieved, our societies would consequently have citizens that would be able to meet the challenges of a constantly and rapidly changing world and could fulfil their countries' development aspirations (Dan, 1999).

Employability study in Malaysia

The purpose of the study was to compile information about the opinions and perceptions of recent graduates, employers (industry and NGOs), government and academics in Malaysia regarding unemployment and the employability characteristics of graduates.

In particular, the study aimed to assess the perceptions of respondents with regard to the following research questions:

- What are the causes of unemployment in Malaysia?
- What are the characteristics of "employability"?
- What are "good quality graduates"?
- How should employees gain the required work skills?
- Can social and interpersonal skills be taught?
- Should we re-structure curricula to improve employability?
- What are the constraints in producing employable graduates?

Research methodology

For this study, a qualitative approach was adopted.[9] To gather the information, 11 focus group interviews were conducted with graduates, employers, government officers and university staff in Penang and Kuala Lumpur between July and September 2009.[10] Each focus group comprised between eight and twelve respondents.[11] The interviews lasted between one and three hours.

The 11 groups were as follows:

1. Selected employers in Penang
2. IT employers in Petaling Jaya
3. Malaysian Employers Federation (MEF) in Kuala Lumpur

9 This approach is consistent with the view put forward by researchers such as Bryman (2004), Creswell (1994), Lee (1992), Merriam (1998), Silverman (2004; 2006) and Stake (1995) who state that the qualitative approach is a subjective and unstructured method of gaining the perspective, point of view and experiences of the research participants. Minichiello et al. (2008) further argue that the qualitative approach enables researchers to "understand human behaviour, values and beliefs from the informant's perspective" (Bryman, 2004 and Lee, 1992, p.9).

10 The focus group interview method has become a popular instrument for collecting qualitative data (Morgan, 1996; Parker and Tritter, 2006) including higher education research (Collier and Driscoll, 1999). Morgan defines focus group methodology as "a research technique that collects data through group interaction" (1996, p. 130) on a defined area of interest. This technique is "guided, monitored and recorded by the moderator" (Gill et al., 2008, p. 293).

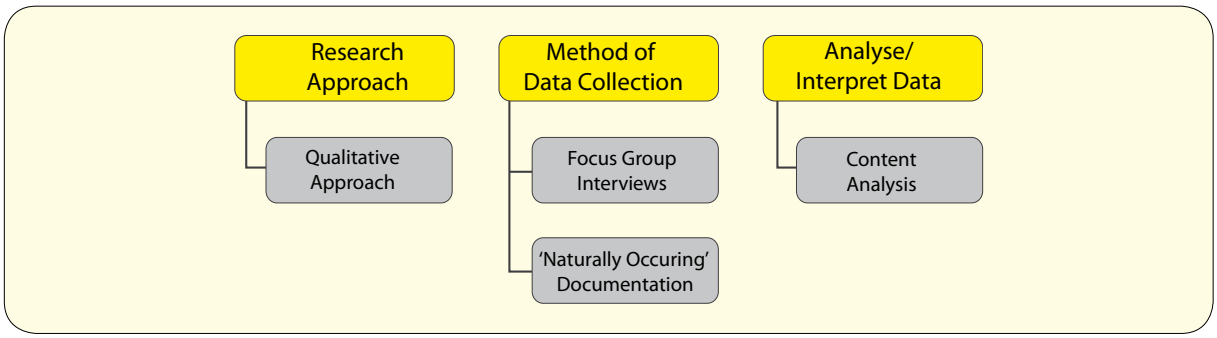
11 The desirable size of a focus group is six to ten participants (Gill et al., 2008; Morgan, 1996) who have similar characteristics (Dreachslin, 1999) to ensure that the research respondents will be comfortable in speaking to each other (Williams and Katz, 2001).

4. Small and medium industry/enterprise (SMI/SME), Perai, Penang
5. Non-government organizations in Penang
6. Industry Division, Ministry of Higher Education, Putrajaya
7. Academics and researchers in Universiti Sains Malaysia, Penang
8. Research officers in Universiti Sains Malaysia, Penang
9. A private university in Kuala Lumpur
10. A private college in Kuala Lumpur
11. Unemployed graduates in Penang
12. Graduate trainees in the Penang Skills Development Centre (PSDC)

Semi-structured interview questions and interview guides were used in the focus group interviews.[12] The questions were asked by trained moderators who sought additional information with follow up questions[13] and the sessions were audio-taped for transcription purposes and to ensure an accurate record of what was said in the interviews.[14] The respondents were selected based on their willingness to share their experiences.[15]

In addition, secondary sources, including research papers, newspapers and other documents were used to collect relevant information.[16] In particular, data were collected from previous studies on employability, tracer studies of graduates, articles in newspapers and strategic plans of higher education in Malaysia. These documents were invaluable as "naturally occurring texts" and provided an overview and background to the employability issues.[17] Figure 3 provides an overview of the method used for the study.

Figure 3: Overview of the research method



12 This approach is supported by Morgan and Keueger (1998), Bryman (2004), Plowman (1999) and Tharenou et al. (2007) as the overall objective of interviews is to understand interviewees' feelings and thoughts about a topic without any interference from the researcher. Different styles of asking questions may lead to more and additional information and clarification (Minichiello et al., 2008; Plowman, 1999) and give the research respondents an opportunity to tell their stories in their own words (Sommer and Sommer, 2001). Interestingly, the application of the interview guide generates rich data or an excellent source of qualitative data which can provide useful information on a researched area (Breen, 2006; Williams and Katz, 2001).

13 Approach endorsed by Dreachslin, 1999; Parker and Tritter, 2006.

14 Approach endorsed by Minichiello et al., 2008; Sommer and Sommer, 2001; Silverman, 2004.

15 According to Minichiello et al. (2008) in a qualitative and exploratory study, "it is necessary to speak only to those who can provide rich knowledge" (p. 169).

16 In order to have high quality data, no one method of data collection is adequate to furnish sufficient information to satisfactorily answer the research question (Buchanan, 1999). In addition, using additional documentation, "counteracts the biases of other methods and supplement sources of information" (Tharenou et al., 2007, p. 125) and leads to making substantial inferences from analysing documents (Yin, 2003).

17 Naturally occurring data are referred to as "data produced entirely independently" (Potter, 2004, p. 205) of the researcher's intervention (Silverman, 2006) or non-research generated data (Silverman, 2005).

Data analysis

The content analysis technique was used to interpret the information collected from the interviews and documentation.[18] The interview transcripts were read numerous times then themes in the material were identified and the researchers then grouped similar themes in order to create categories. The responses were then interpreted in order to answer the research questions. This can be carried out by "relating the categories to each other in some way to tell a story in relation to the research question".[19]

Findings

Responses regarding unemployment

In general, the respondents considered that the unemployment situation in Malaysia was due to the unavailability of jobs. The MEF believed, however, that jobs for graduates were available and plentiful in the expanding services sector.

According to the Federation of Malaysian Manufacturers/Small Medium Industries (FMM/SMI), unemployment is a direct consequence of the contracting manufacturing sector. FMM/SMI respondents believed that since multinational corporations began leaving Penang, jobs in the manufacturing sector had become scarce. Furthermore, FMM/SMI respondents were of the opinion that the surge in the number of graduates from universities was not helping the unemployment situation in Malaysia and that changes in occupational structure had worsened unemployment further, with firms employing fewer people.

Employers and the FMM/SMI were in agreement as to the unsuitability of graduates for the jobs available, and the MEF considered this a major issue for Malaysia.

Unemployed graduates' responses as to why they were unemployed indicated that they felt they did not satisfy job requirements in terms of their academic qualifications, skills and competencies. In addition, graduates felt that their lack of experience and their families' socio-economic background were factors leading to unemployment. In some cases, graduates believed they were unemployed because they were reluctant to move to where jobs are available. For instance, a graduate respondent who lived in Penang responded that he was not interested in moving to Kuala Lumpur even though there were many jobs available in Kuala Lumpur. He reasoned that the cost of living in Kuala Lumpur was very high compared to the salary that he would have earned by working there.

What are the characteristics of "employability"

According to both NGOs and industry employers, employable graduates are those who are prepared to work, have the appropriate skills and competencies, and the ability to learn and re-learn. NGOs listed humanitarian values (honesty, caring, patience) and socially-desirable attitudes (open, curious and confident) as the key characteristics of employability. Employers, on the other hand, listed attitudes such as preparedness, positivity, interest, dedication, team spirit, and readiness to face challenges and hardship, and work-related competencies such as the ability to apply theory in the working environment, the ability to speak English and communication skills as important characteristics. Employers also listed qualifications as an important requirement for employability, but qualifications were not considered to be as important as attitude. For example, as one employer noted, "we look first at their qualifications (technical), but their academic qualification will make up 20 percent and the rest will depend on their attitude and adaptability". Thus, the responses indicate that a high grade point average will not guarantee employability.

18 Content analysis is defined as "any technique for making inferences by objectively and systematically identifying specified characteristics of messages" (Holsti, 1969, p. 14; Creswell, 2003).

19 The story is not just a "description or simple summary of data but involves a central construct to be explained and other variables that appear to explain or influence it" (Tharenou et al., 2007, p. 257; Coffey and Atkinson, 1996).

Academics agreed with the employers regarding the importance of attitude. As one of the academics noted, "students who have good marks but have a bad attitude such as being disobedient, and being unable to share knowledge and work in a team ... will not succeed as their poor attitude will create problems". Employers and academics also saw the need for graduates who are balanced in terms of intelligence, emotional and spiritual quotients.

Trainees at the PSDC and other unemployed graduates believed having excellent communication skills, in particular English language skills, was important for employability.

What are "good quality graduates"?

The characteristics of "good quality graduates", as perceived by the employers, include the following:

- Good values (e.g. honest, confident yet humble, innovative and creative);
- Positive attitudes (e.g. proactive, hardworking, high motivation and curiosity driven);
- Work-related skills (e.g. communication, entrepreneurship and leadership skills); and
- Preparedness to work (e.g. industry-ready skills and ability to perform well in a working environment).

How should employees gain the required work skills?

According to NGOs, training and exposure (work experience) are required to gain work skills. Academics agreed that on-the-job training was important in preparing graduates for the workforce. In this context, they believed that alumni should assist their respective institutions to provide work-experience opportunities for students. In addition, networking with industry was necessary for students to be exposed to real-world work situations. Nevertheless, academics responded that focusing purely on work skills was not sufficient. Graduates must also develop the values and knowledge required to contribute effectively to society.

The employers agreed that work-experience was necessary but were not satisfied with the level of networking that existed between industries and universities. Most of the employer respondents believed that companies should be invited to universities to give career advice more frequently, and they believed that companies should also play an active role in assessing the curriculum to ensure it matches job-market needs.

Graduates believed that lecturers need to be exposed to the demands and reality of the workplace so that they will have up-to-date information for preparing their students. The respondents felt that some lecturers only taught theory, neglecting hands-on experience. Graduates felt that entrepreneurship courses should be offered by universities, with an emphasis on practical aspects. They felt that merely exposing students to entrepreneurial theory would not be very useful.

Can social and interpersonal skills be taught?

According to employed graduates, social and interpersonal skills could not be taught by HEIs. Universities could come up with many activities, but as one employed graduate stated "it is difficult for universities to teach these kinds of skills". Academics felt that the extra-curricular programmes and activities could help students to improve their social and interpersonal skills, but agreed that these kinds of soft skills could not be easily taught at university level.

Should HEI curricula be re-structured to improve employability?

According to both employed and unemployed graduates, there is a need to realign the curriculum, as well as the teaching and learning environment to the needs of the work-place. Graduates believed it was important for universities to align courses with the world of work and employment opportunities. Respondents from Universiti Tenaga Nasional noted that employers should play a role in structuring university courses to ensure graduates have the skills required for employability. Respondents from the International Islamic University Malaysia (IIUM) agreed. IIUM is believed to have a well-structured programme to enhance graduates' employability (see Appendix 1).

In general, the employers believed that university curricula should be revamped, and employers should provide input into the subjects being taught. Furthermore, more time should be given to practical experience. Employers also felt that lecturers should get real world industry work experience and convey this experience to their students.

Most employers felt that graduates who had undergone internship programmes with well-known companies were of great value to employers, particularly if the internship was longer than three months. However, some employers disagreed, saying that internships were difficult to manage and monitor. For example, one respondent commented, "We do have internships but not often because it is difficult for us to monitor them. We are running on a tight schedule and have limited manpower to manage interns."

Most graduates thought internships were useful for securing a job. Some respondents suggested internships should be scheduled in the final semester to give them the required experience to obtain a job upon finishing their internship. Other graduates, such as PSDC trainees, believed that while internships could be useful, they did not gain much experience during their internships because employers did not trust them.

According to the respondents from NGOs, graduates and lecturers should be exposed to civil society activities during their semester breaks. They should see life outside the ivory towers by familiarizing themselves with NGO-type projects.

What are the constraints in producing employable graduates?

According to employers, the main constraint on producing employable graduates could be traced to a curriculum that did not fit the needs of the workplace. Employers also noted an over-supply of graduates to some extent, particularly IT graduates, because there were not enough large IT companies in Malaysia to absorb all the graduates.

Employers also believed that the graduates were rather uninformed about the need to establish and follow a career path. Many graduates showed a half-hearted attitude towards work but expected to be paid high salaries immediately without going through a due process of gaining experience over time. Surprising, responses from the graduates themselves reinforced this observation. One graduate complained that the specifications of his previous job (salary, duration of work, work load) were not satisfactory, even though it was his first job and he had little experience in the workforce.

Companies and NGOs could not train graduates themselves due to insufficient budget, human resources and time. They would prefer industry-ready experienced graduates. This places a great burden on HEIs to produce graduates who can meet the industries' needs for economic purposes, and at the same time, also prepare their students to serve society effectively and positively.

Summary

The study used a qualitative approach to survey the opinions of graduates, employers and academics regarding the employability of graduates in Malaysia. Information was collected through focus group interviews. In addition, other documents were used to provide additional information. The data were analysed and interpreted through content analysis.

The study found that there is general agreement among employers and graduates that changes are needed in higher education in order to make graduates more "employable" from the perspective of the industry. Employers want students to be trained according to the needs of the workplace and want to do away with subjects which are irrelevant to the needs of the working world. Academics agree that some changes are needed but emphasize these changes must balance the demands from the industry against the needs of civil society and social development. Currently, the discourse on graduate employability is framed within the context of industry-readiness. However, industry-readiness does not bring about a socially oriented economy and knowledge society. HEIs must reclaim their role as socially relevant institutions that produce graduates with the necessary attributes for a sustainable society that is just and peaceful.

Recommendations

The following recommendations are directed at employers, the MoHE and HEIs:

- The discourse on employment has to shift from focusing on industry's needs to focusing on society's needs.
- Employers, the MoHE and HEIs have to reorient their understanding of employability and its constituent core attributes, so that HEIs are meeting the needs of society rather than the needs of industry.
- This perspective has to be translated into the core activities of the university.
- The MoHE and HEIs should review the learning outcomes of their respective programmes and curricula to incorporate the inculcation of attributes needed for a socially-oriented economy and a knowledge society.

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Employability of graduates in the Philippines

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Introduction

For many Filipinos, education is regarded as an investment that affords them a way out of poverty. It is seen as the key to improving the quality of life, the primary means for social and economic elevation. Parents spend their scarce resources to have their children educated, hoping that a good education will lead to attractive jobs for them. The value of education in national development is also enshrined in the Philippine Constitution which states that "The State shall give priority to education, science and technology, arts, culture, and sports to foster patriotism and nationalism, accelerate social progress, and promote total human development" (The Constitution of the Philippines, 1987). Access to education holds both individual and national implications.

Yet many graduates find themselves unemployed after earning a degree, despite the high value and expectation placed on education. Thousands of young university or college graduates can be seen lining up in job fairs around the country in search of elusive employment opportunities. According to a study by UNESCAP (2000), youth are the least employable among different age groups. This is validated by quarterly statistics from the Philippine's National Statistics Office (NSO). In July 2009, youth unemployment accounted for more than half of the total unemployed. Young persons in the 15 to 24 age group numbered 1,542,000 or 52.7 percent, dominating the unemployed workforce (NSO, 2009). This trend has been on the rise.

In the Philippines, the economy's difficulty in absorbing the high number of new entrants to the labour force is a familiar refrain. Graduates voice their frustration at not being able to land a job, particularly a job that is well-paid and secure. Even with employment opportunities in the business process outsourcing (BPO) sector, few were hired for these positions.

With the current global economic slowdown, this issue of graduate unemployment has become an even graver reality. As the labour market decline poses negative social and economic costs, the effects are felt most significantly by young people. Studies have shown that the experiences of new entrants to the labour force have a profound influence on their future social, economic and behavioural fortunes (Green et al., 2005). For instance, job seekers or young workers who encounter negative experiences have a higher probability of encountering further work-related disadvantages later in life, as well as social exclusion, poverty and ill health (Mitchell and Muysken, 2008, cited in Baum and Mitchell, 2008). The inability to be gainfully employed cultivates a sense of vulnerability and inadequacy among the youth (and the educated) which in turn can lead to other social ills and conflicts such as youth violence and illegal activities (UNESCO, 2007; Bandara, 2005). The cost to the wider society and economy is significant.

This study examines graduate unemployment in the Philippines from the perspective of recent graduates, higher education institutions (HEIs) and employers. It seeks to determine the factors that influence graduate unemployment, to what extent the concept of employability plays a role in this, and to provide recommendations for resolving the challenges.

Overview of the unemployment situation

As the Philippines reels under the impact of global recession and economic slowdown, there is a clear pressure on the domestic labour market to withstand the onslaught and to show resilience. However, the unemployment rate remains high. In January 2009, it rose slightly to 7.7 percent from 7.4 percent in January 2008, representing a 0.3 percentage point year-on-year increase (NSO, 2009). The Philippine Institute for Development Studies estimated that the full year unemployment rate for 2009 stood at 8 to 9 percent. In absolute numbers, the total amount of unemployed people in January 2009 was 2,854,000, up 6.7 percent from the previous year's 2,675,000.

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Table 1: Unemployment in the Philippines, January 2009, 2008, 2007

Indicator	Total unemployed persons (thousands)			Unemployment rate (%)		
	2009	2008	2007	2009	2008	2007
Male	1,829	1,741	1,794	8.0	7.8	8.1
Female	1,026	935	1,055	7.2	6.7	7.4
Total	2,855	2,676	2,849	7.6	7.25	7.8

Source: NSO Labour Force Survey, January 2009

The Philippines' unemployment rate is the second-highest among the Association of Southeast Asian Nation (ASEAN) member countries, with Indonesia registering the highest at 8.4 percent (Adriano, 2009). This is indeed high especially if compared to the end-of-year unemployment rates in Thailand, Singapore, and Malaysia at 1.4 percent, 2.6 percent and 3.3 percent respectively.

Critics have even accused the Philippine government of understating these figures when it decided to change the official definition of unemployment in 2005. Before April 2005, the Philippines' concept of unemployment was defined differently from that being used by the International Labour Organization (ILO). With the approval of National Statistical Coordination Board (NSCB) Resolution No. 15 Series of 2004, a person is now considered unemployed if she or he is 15 years old and above as of last birthday and has satisfied these three criteria simultaneously (Virola, 2005):

- Without work, i.e. not employed in a job or business during the basic survey reference period;
- Currently available for work, i.e. available and willing to take up work in paid employment or self-employment during the basic survey reference period, and/or would be available and willing to take up work in paid employment or self-employment within two weeks after the interview period; and
- Seeking work, i.e. had taken specific steps to look for a job or establish business during the basic survey reference period; OR not seeking work due to the following reasons: (a) tired/believe no work available, i.e. discouraged workers who looked for work within the last six months prior to the interview date; (b) awaiting results of previous job application; (c) temporary illness/disability; (d) bad weather; and (e) waiting for rehire/job recall.

The government justified this change by saying that the availability criterion, which was missing prior to 2005, was formally adopted to make the working definition more conceptually correct and to be fully in line with the international standards as prescribed by the ILO.

Other groups are claiming that if the old definition is applied, the unemployment rate would be even higher than it already is. According to the IBON Foundation, the actual number of unemployed could be 4.2 million, a figure 50 percent higher than the official one (IBON, 2009). This is because by adopting the new unemployment definition, the government has effectively excluded the discouraged workers who are not looking for work for more than six months, and those not available or willing to take up work, even if they do not have jobs at the time of the survey.

Graduate unemployment situation

The workforce continues to grow aided in no small measure by the increasing number of graduates entering the labour market each year. Except for a slight dip in 1997 and in 2003, the number of graduates has been rising steadily (see Table 2). After 2003, the number of graduates further increased to 409,722 in 2004 and 491,320 in 2007 (NEDA, 2009). Filipinos, it would appear, have become increasingly better educated. Among the four Asian countries cited in an Asia Development Bank study (ADB, 2007), the Philippines' population was considered the most highly educated relative to those of India, Indonesia and Thailand based on enrolments in tertiary education.

Table 2: Higher education enrolees and graduates by academic year

School year	Number of HEI enrolees	Number of HEI graduates
1994-95	1,871,647	312,667
1995-96	2,017,972	328,120
1996-97	2,061,300	335,257
1997-98	2,067,965	307,027
1998-99	2,279,314	334,564
1999-00	2,373,486	350,807
2000-01	2,430,842	363,640
2001-02	2,466,056	383,839
2002-03	2,426,976	401,787
2003-04	2,420,856	386,920
2004-05	2,402,315	409,722

Source: CHED, 2005

No recent figures on the unemployment rate among fresh college graduates are available. However, there are data on the unemployment rate among Filipino college graduates in general. As Table 3 reveals, the number of college graduates among the unemployed has been rising. It also shows that the proportion of unemployed college graduates is even higher than the unemployed elementary graduates and the unemployed high school dropouts.

Table 3: Unemployed persons by highest grade completed, 2007-July 2009 (in thousands)

	2007	2008	July 2009
No grade completed	18	14	15
Elementary *Undergraduate* *Graduate*	401 *184* *217*	380 *173* *207*	393 *183* *210*
High School *Undergraduate* *Graduate*	1,222 *355* *867*	1,237 *338* *899*	1,313 *350* *963*
College *Undergraduate* *Graduate*	1,013 *534* *479*	1,086 *574* *512*	1,201 *627* *574*

Source: NSO Labour Force Survey, July 2009

A similar trend can be deduced from the figures for unemployed youth (defined as those within 15 to 30 years of age in the Philippines). More college graduates than elementary graduates and high school dropouts can be found among the unemployed youth (Table 4). The possession of a college degree, it seems, no longer assures one of employment.

Table 4: Unemployed youth (15-30 years old) by highest grade completed, 2007-2009 (in thousands)

	2007	2008	2009 (January)
No grade completed	8	6	3
Elementary *Undergraduate* *Graduate*	215 *100* *115*	205 *95* *110*	218 *97* *21*
High School *Undergraduate* *Graduate*	916 *265* *651*	942 *255* *687*	948 *261* *687*
College *Undergraduate* *Graduate*	774 *406* *368*	830 *439* *391*	884 *490* *394*

Source: NSO Labour Force Survey, January 2009

Other data from the NSO's Labour Force Survey (LFS) provide insight into graduate unemployment. Assuming that most graduates are within the 20 to 24 years old age range, the LFS data for this group can also be used for the purpose of this paper. From 2002 to 2004, the youth from this age group comprised the biggest sector of the unemployed in the country (Table 5).

Table 5: Unemployment by age group, 2002-2004

Age	2002		2003		2004	
	Number ('000)	Unemployment rate (%)	Number ('000)	Unemployment rate (%)	Number ('000)	Unemployment rate (%)
15 - 19	812	24.1	749	23.1	849	24.7
20 - 24	1,107	24.2	1,112	23.3	1,160	23.4
25 - 34	873	11.5	961	11.3	1,032	10.8
35 - 44	443	5.9	436	5.8	464	6.0
45 - 54	329	5.5	335	5.8	365	6.6
55 - 64	188	5.8	221	6.9	262	8.3
65 and over	123	7.3	122	7.7	118	8.0
Total	3,875	11.4	3,936	11.4	4,250	11.8

Source: NSO Labour Force Survey, 2004

More recent figures reinforce this gloomy picture. Among the youth population, it is also the age group of 20-24 years which has the highest unemployment rate from 2007 to January 2009 (Table 6). An increasing trend can be observed, therefore, in both the pre- and post-2005 official definition of unemployment. These data further support the conclusion that graduate unemployment exists and that the phenomenon is on the rise. Anecdotal evidence tends to lend support to this statement.

Table 6: Youth unemployment by age group, 2007-2009 (in thousands)

Age	2007	2008	January 2009
15 - 19	496	517	480
20 - 24	839	872	924
25 - 30	577	593	648
Total	1,912	1,982	2,052

Source: NSO Labour Force Survey, 2009

Previous studies reinforce this observation. In a 1999 study conducted by professors at Mindanao Polytechnic State College, it was shown that some 41 percent of males and 50 percent of females were likely to remain without work after graduation (Padua and Daguay, 1999, cited in Ramota, 2005). This same study revealed that only 40 percent of the total number of graduates became employed within a year of graduation while the other 40 percent found work only in the following year. The remaining 20 percent would be unemployed for the next two years.

As these figures suggest, the relationship between educational attainment and unemployment is quite complex and dependent on a number of factors which include a country's level of economic development (UNESCAP, 2006). In countries where the level of economic development is low, the unemployment rate among educated youth is also low as a result of the high demand for educated workers. However, in countries where the economies are in transition or where economic development has not been able to keep step with the rapid rise in the educational level of the population, the unemployment rate among the educated youth is quite high.

The Philippines' situation conforms to this observation. Its economy has undergone only minor changes apart from a shift from agriculture to services and rising unemployment (ADB, 2007). Furthermore, having a highly educated population means having more educated workers in every occupation including low-productivity jobs such as drivers, household help, security guards and retail sales staff. The median educational attainment, for instance, among taxi drivers in the Philippines is Grade 10, while those in Indonesia, India and Thailand are Grades 9, 7 and 6, respectively. It is unlikely that such low paying and menial professions are attractive to people with a good education unless they have no other alternatives. Rather than face unemployment, such jobs are temporary solutions until better opportunities come along.

Clearly, the production of educated workers is faster than the creation of jobs in sectors that have historically employed them. This dilemma has led to relatively smaller increases in the number of people employed in professional and technical fields compared to the number of labourers, unskilled workers, service workers and shop and market sales workers. Thus, while there were more than 400,000 higher education graduates, the number of people who found professional jobs increased by only 75,000 from 1,524,000 a year earlier to 1,599,000 in July 2009, accompanied by an increase of 37,000 technicians and associate professionals from 885,000 to 922,000 for the same period. On the other hand, the number of labourers and unskilled workers surged by 460,000, and service and sales workers by 255,000 (NSO, 2009).

The shortage of available jobs in certain professions or fields has forced graduates to accept employment not in line with their academic background. A survey by the Bureau of Labour and Employment Statistics showed that between January 2007 and June 2008, 13,540 candidates applied for 1,347 nursing vacancies in selected establishments outside the usual range of employment (BLES, 2008). The massive numbers of applications compared to the limited number of vacancies is of great concern. Some graduates choose to remain unemployed until a satisfactory job comes along. As UNESCAP (2006) noted, the unemployment among educated youth may also be partly attributed to the search for "good jobs" and to the rejection of jobs perceived to be "bad" according to social or cultural norms. In such cases, graduate unemployment may be "voluntary" as these new entrants shop around for a suitable job and evaluate career options (Arcelo and Sanyal, 1987), if they can afford to do so.

Employability of graduates

In insecure environments characterized by high unemployment, the concept of employability emerges as a crucial contributor to career success (Fugate et al., 2004). Employability is difficult to define comprehensively and concisely since it is used in a variety of contexts and has a range of meanings (Hillage and Pollard, 1998). Traditionally, it is recognized as the ability to gain and maintain employment both within and across organizations (Finn, 2000). It implies the possession of qualities and competencies that are required to enable graduates to enter and maintain employment throughout their lives. In this definition, employability is clearly a characteristic of the individual. It is a one-dimensional, outcome-based definition that places the individual's skills at the centre of the concept (McArdle et al., 2007).

However, there has been a movement towards using a broader framework that focuses on the manifold aspects of employability. These efforts have adopted a more holistic approach that takes into consideration

the roles of both individual characteristics and labour market conditions; that is, the supply and demand side of employability. Hillage and Pollard (1998) developed a broad definition that involves three main elements:

1. The ability to gain initial employment, which creates an interest in how the education system deals with the "key skills," career advice and an understanding of the world of work.
2. The ability to maintain employment and engage in "transitions" between jobs and roles within the same organization that would allow one to meet new requirements.
3. The ability to obtain new employment.

This definition covers both the unemployed looking for work and the employed seeking alternative jobs or promotion. Hillage and Pollard (1998, p. 12) added that:

> For the individual, employability depends on the knowledge, skills and attitudes they possess, the way they use those assets and present them to employers and the context (e.g., personal circumstances and labour market environment) within which they seek work.

From this framework, the complex interaction of the following is deemed important:

- Employability assets which include basic skills and essential personal attributes, work-specific skills, and skills which contribute to organizational performance (e.g., teamwork).
- Presentation, which refers to the ability to secure an appointment to an appropriate position by demonstrating employability assets (e.g., competent completion of application form and curriculum vitae).
- Deployment defined as a range of abilities such as career management skills (e.g., awareness of one's own abilities and limitations, decision-making skills) and job search skills.
- Context factors, which refer to the interaction of personal circumstances and the labour market.

Building upon this framework, McQuaid and Lindsay (2005) developed a holistic model that has three main interrelated components or factors that influence the level of employability, namely:

1. Individual factors: These include employability skills and attributes, demographic characteristics, adaptability and mobility. These are the supply-side employability issues covering the essential attributes (e.g., basic social skills), personal competencies (e.g., motivation, confidence, etc.), basic transferable skills (e.g., literacy, numeracy), key transferable skills (e.g., problem-solving, communication, adaptability, teamworking skills), qualifications and educational attainment.
2. Personal circumstances: These cover the contextual socio-economic factors related to the individual's social and household circumstances (e.g., family and caring responsibilities, access to resources).
3. External factors: These include labour demand conditions (macroeconomic factors, vacancy characteristics, recruitment factors) and enabling support factors (e.g., accessibility of public services and job-matching technologies).

Such broad ranging definitions have been useful as a means of analyzing the barriers to work among the unemployed. It is an approach that does not solely look at supply-side solutions and therefore avoids putting the blame on the victim. The lack of employability is thus seen as the outcome of a complex web of factors that are found not just in the individual's characteristics but also in the labour market, schools, recruitment procedures of businesses and policies implemented by government (Kleinman and West, 1998). Employability, as argued, should be understood within a framework that considers both individual circumstances and the broader external (i.e. economic, social and institutional) factors that influence the person's ability to land a job.

In order to understand the concept more fully, the full range of factors affecting the ability of individuals to attain the quality of being employable need to be investigated. This would allow the identification of not just a subset of the barriers that prevent a person from being employed (e.g., employability skills), but other key interrelated barriers too.

The employability framework used in this paper is based on such a premise that the supply-side factors used to examine unemployment risk are too narrow and ignore the crucial demand-side factors.

Role of higher education institutions

Since the nature of the education system has often been pinpointed to be responsible for the graduates' inability to be readily absorbed into the labour market, the role of the HEIs will be emphasized in this paper. It has been suggested that existing undergraduate programmes are not producing graduates who possess the kind of professional and lifelong learning skills that they need to be successful in their careers (de la Harpe et al., 2000). The higher education system has failed to closely match the needs of the current labour market (United Nations, 2005). This mismatch between the kind of education being provided and the demands of the labour market has been cited many times in the literature (e.g., Egulu, 2004). As a result of this lack of fit, the educated young person becomes disadvantaged because the skills she or he has learned in the university are not those required in the labour market. Thus, even with a degree, a person is not guaranteed paid employment owing to this mismatch between skills and available jobs. How this mismatch is manifested in the Philippine setting will be described later in this paper.

Research framework

This study's framework follows the general principles and guidelines agreed upon during the Experts' Meeting on Graduate Employability held in Penang, Malaysia on 11–12 February 2009. It specifically focuses on the undergraduate level and not on the postgraduate level. It also builds upon previously published studies on graduate employment. This case study involved conducting a validation survey, focus group discussions and key informant interviews to determine the employability of Philippine graduates, the nature of their problems, and the causes of their unemployment.

With the aim of understanding graduate unemployment and the role employability plays, this study seeks answers to the following questions:

- Is there graduate unemployment in the Philippines?
- What are the factors responsible for graduate unemployment in the Philippines?
- What are the government policies to address these problems?

The following objectives guided the conduct of this study:

- To examine unemployment among Filipino graduates and contributing factors from the perspective of new graduates, HEIs and employers.
- To identify the individual characteristics of the graduates and other external demand factors which affect their employability and employment status.
- To determine the current government policies which address the problem of graduate unemployment and employability.

This study is a quantitative and qualitative undertaking that employs the survey method and key informant interviews. Using the purposive sampling method, survey questionnaires were developed, pre-tested and administered to recent graduates, both employed and unemployed.

A graduate is defined as someone who has completed formal studies at a (HEI and has earned a minimum of a bachelor's degree. An unemployed graduate, based on the government's official definition, is one who has earned a degree but is without work, is available for work, and is actively seeking paid employment. An employed graduate is one who holds a full time job at the time of the survey.

To enrich the data from the survey, select HEIs (represented by the heads of Student Affairs) and employers (represented by their Human Resource managers) were interviewed for their analysis of the situation under study.

Scope and limitations

The current study is a small, indicative one with a limited sample size and scope. It covers 30 graduates who earned their degrees in 2008 and 2009. The study has also been limited by the lack of official data on the unemployment rate among recent graduates who are ready to enter the labour force. To give an idea of graduate unemployment in the Philippines, some proxy indicators are used instead.

Key findings

Perception on employment by graduates

Profile of respondents

More than half of the graduate respondents (54 percent) in the sample were unemployed and actively looking for a job, while the remaining were employed in their first or second full time job (46 percent). There were slightly more female respondents (51 percent) than male (49 percent). Respondents were aged19 to 25 years. About 39 percent of the respondents were married while more than half were single (61 percent).

Most of the respondents were Roman Catholics (67 percent) while the rest were of other religions and faiths (33 percent). Table 7 provides a summary of the demographic information.

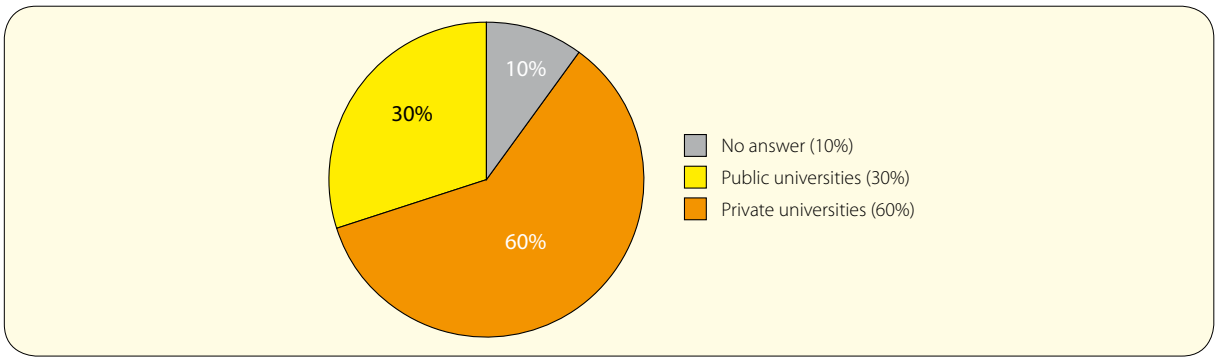
Table 7: Summary of respondent's background information

	Frequency	Percentage
Sex		
Female	66	51
Male	64	49
Employment status		
Employed	60	46
Unemployed	70	54
Marital status		
Single	79	61
Married	51	39
Religion		
Catholic	87	67
Others	43	33

Course/degree

A considerable number of respondents received their degrees from private universities (60 percent); some from public colleges and universities (30 percent), while a few did not indicate the schools where they graduated (10 percent). The majority earned their degrees in 2009 (80 percent); the rest earned theirs in 2008 (20 percent).

Figure 2: Percentage distribution by type of university



Source: SEAMEO INNOTECH, 2009

Nursing was the most common course among the respondents (27 percent), followed closely by business- and IT-related courses (20 percent each). The rest studied psychology (10 percent), hotel and restaurant management (7 percent), and electrical engineering (7 percent). This distribution more or less reflects the national distribution of graduates per discipline group where business administration and related courses, medical and allied sciences (e.g., nursing), and computer science courses are among the top five disciplines that produce graduates (Table 8).

Table 8: Top higher education graduates by discipline group (top 5), 2000-2004

	2000-2001	2001-2002	2002-2003	2003-2004
Business admin and related	106,559	109,486	110,870	101,119
Education and teacher training	71,349	77,555	80,863	71,851
Engineering and technology	45,041	48,861	53,487	50,679
Medical and allied	27,296	26,474	33,296	41,688
Mathematics and computer science	33,059	37,354	36,223	35,367

Source: CHED, 2005

When respondents were asked to rank the reasons for their course choice, the most popular reasons were the course's prospect for immediate employment and its affordability for the family (Table 9). The influence of family and a course's prospect for employment abroad were also ranked highly. These top reasons suggest that for the youth, the course has to be something that will be affordable for the family to support, and will help to secure employment immediately after graduation.

Table 9: Top reasons for choosing the course

Reason	Mean
Prospect for immediate employment	3.85
Affordable for family	4.37
Personal interest	4.44
Influence of family and/or relatives	4.57
Opportunity for employment abroad	4.89
Prospect of attractive compensation	4.73
Good academic performance	5.12
Status or prestige	5.12
Influence of friends	5.85
Inspired by role model	6.04

Source: SEAMEO INNOTECH, 2009

Disaggregating these responses according to employment status yielded a slightly different picture. For the employed graduates, the top three reasons were personal interest, prospect for immediate employment and prospect of attractive compensation (Table 10). For the unemployed graduates, on the other hand, the most popular reasons were prospect for immediate employment, affordability for family and opportunity for employment abroad.

The possibility of immediate employment was consistently ranked high by both the employed and unemployed graduates. This corresponds with findings from previous studies that likewise saw the prospects of post-graduation employment as one of the major factors influencing a student's choice of course (Arcelo and Sanyal, 1987; Maharasoa and Hay, 2001). It is also interesting to note that personal interest was a more compelling reason for the employed than for the unemployed. It is possible that personal interest becomes more salient for these graduates because the need for employment has already been satisfied. On the other hand, the opportunity for employment abroad ranked more highly among the unemployed relative to the employed. Interestingly, the opinions of friends and family also had a significant influence on course selection.

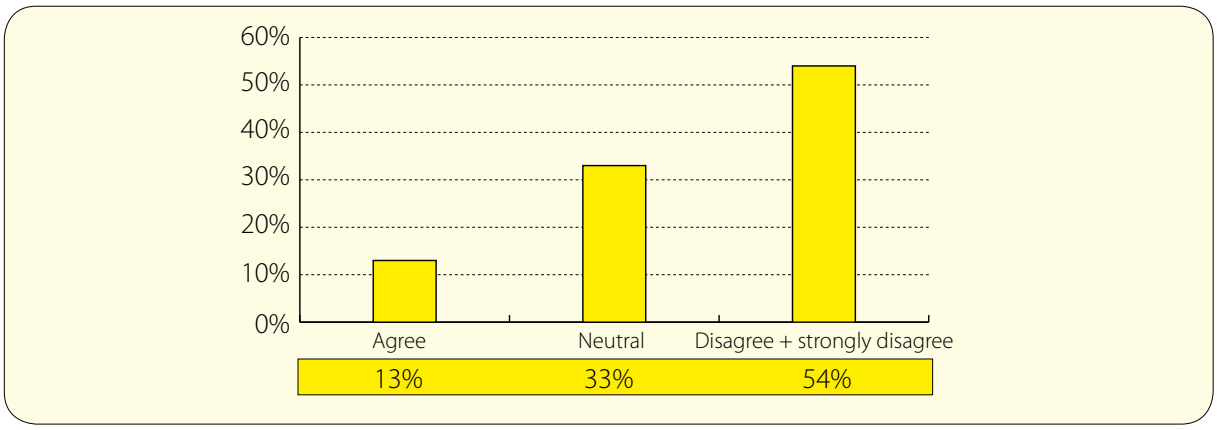
Table 10: Top reasons for course choice among employed and unemployed graduates

Employed		Unemployed	
Reason	Mean	Reason	Mean
Personal interest	3.9	Prospect for immediate employment	3.5
Prospect for immediate employment	4.7	Affordable for family	4.0
Prospect of attractive compensation	4.9	Opportunity for employment abroad	4.3
Affordable for family	5.2	Influence of family and/or relatives	4.38
Influence of family and/or relatives	5.4	Status or prestige	4.5
Good academic performance in high school	5.9	Prospect of attractive compensation	4.63
Inspired by role model	6.0	Good academic performance in high school	4.63
Influence of friends	6.8	Personal interest	5.0
Opportunity for employment abroad	6.10	Influence of friends	5.56
Status or prestige	6.10	Inspired by role model	6.06

Source: SEAMEO INNOTECH, 2009

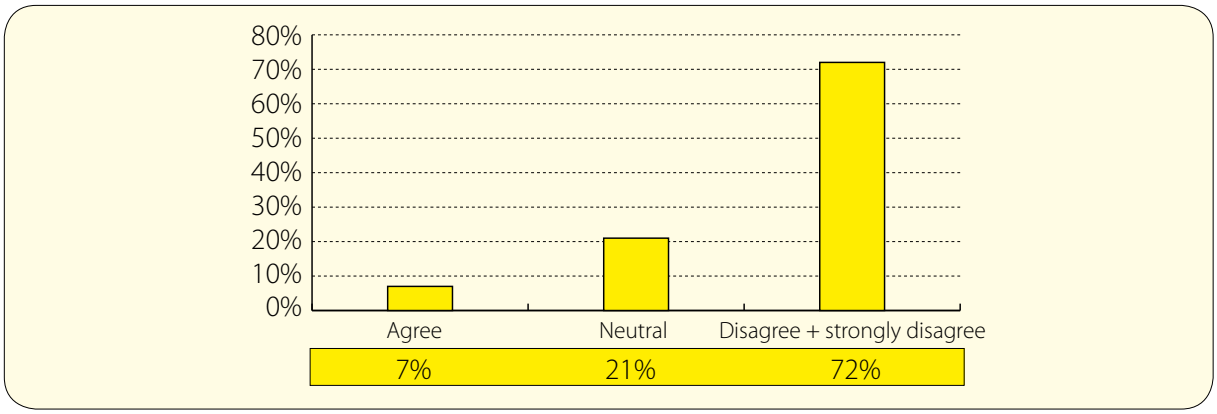
Since only 13 percent of the respondents thought their degrees had little or no impact on their job prospects (Figure 3) and a resounding 72 percent said their degrees had not worsened their job prospects (Figure 4), it is clear that most graduates valued their higher education degrees. Nonetheless, it would be necessary to investigate why 13 percent considered their degrees to be of little use in getting a job and 7 percent believed they were disadvantaged by their degrees if their concerns are to be addressed.

Figure 3: Degree has little or no impact on job prospects



Source: SEAMEO INNOTECH, 2009

Figure 4: Degree worsened my job prospects



Source: SEAMEO INNOTECH, 2009

University/college

The highest ranked reason for choosing a particular university or college was its affordability, followed by the influence of family and/or relatives (Table 11). The prospect for immediate employment was not as highly ranked as in the selection of the course. It is possible that the universities that were more often associated with high prospects for employment were those beyond the reach of the respondents.

Table 11: Reason for choosing university/college

Reason	Mean
Affordable for family	2.27
Influence of family and/or relatives	2.37
Status or prestige	2.92
Influence of friends	3.40
Prospect for immediate employment	3.75
Not admitted to original choice for university	4.95

Source: SEAMEO INNOTECH, 2009

Career/job placement service

More than half of the respondents indicated that their HEIs offered career or job placement services, with 62.5 percent from this cohort noting that they had used such services. Furthermore, 78 percent of employed graduates versus 45 percent of unemployed graduates said their universities provided these services (Table 12), although the chi-square analysis did not reveal a significant difference between the means.

Table 12: Employment status by presence of career/job placement service

Status of employment		University offers career/job placement		Total
		Yes	No	
Employed	Number	7	2	9
	%	78	22	100
Unemployed	Number	9	11	20
	%	45	55	100
Total	Number	16	13	29
	%	55	45	100

Source: SEAMEO INNOTECH, 2009

Curriculum/Methods of instruction/Quality of faculty

In general, the respondents had a high regard for their universities, curriculum and pedagogy regardless of whether they were employed or not. The quality of faculty was rated as being above average (40 percent) and excellent (23 percent). Most of the respondents (70 percent) found their curriculum to be helpful in developing their employability. They also considered the course contents to be excellent (27 percent) or above average (40 percent). Likewise, 40 percent said the methods of instruction to be average, 37 percent above average and 23 percent excellent. It would seem that most of the graduates did not see their training to be responsible for their difficulties in landing a job.

Extra-curricular activities

The HEIs' extra-curricular activities also received positive responses with 37 percent saying they were above average and 27 percent excellent. This was reinforced by the relatively high level of involvement in such activities – 60 percent being very active compared to 3 percent being not active. The extra-curricular activities found to be most popular were memberships in academic organizations and involvement in volunteer or service-related work, followed by sports and athletics. More of the employed graduates (70 percent) were involved in academic organizations compared to the unemployed (33 percent) (Table 13). The chi-square analysis showed a marginally significant difference between the means (F=3.475, p=.062).

Table 13: Employment status by academic organization

Status of employment		Involved in academic organization		Total
		Yes	No	
Employed	Number	7	3	10
	%	70	30	100
Unemployed	Number	6	12	18
	%	33	67	100
Total	Number	13	15	28
	%	46	54	100

Source: SEAMEO INNOTECH, 2009

Actions in preparation for future employment

The most common action students did before graduation to look for employment was browsing newspapers, websites and magazines for job opportunities (50 percent), followed by researching on specific careers (47 percent). Attending job fairs was also fairly common (43 percent) as well as writing/ updating their resumes (37 percent) and asking faculty for career advice (37 percent).

Attendance at job fairs seemed to be significantly different between the unemployed and employed graduates ($F=3.910$, $p<.05$). Most of the employed graduates visited job fairs while most of the unemployed did not (Table 14).

Table 14: Employment status by attendance at job fairs

	Yes	No	Total
Employed graduates	7	3	10
Unemployed graduates	6	13	19
Total	13	16	29

Source: SEAMEO INNOTECH, 2009

Job search

Close to half of the respondents looked for work within a month after graduation (47 percent); some within two to three months (13 percent); others within four to six months (17 percent). Among the unemployed graduates, almost all were still looking for their first job at the time of the survey (90 percent). The most popular means for looking for a job were through the internet (63 percent), walk-in interviews (60 percent) and job fairs (57 percent). The prevalence of internet job searches is not surprising given that the current generation grew up with this technology. Employment agencies were the least used (20 percent).

About 30 percent of the unemployed graduates said they had submitted two to five job applications on average, with 20 percent having submitted 21 to 30 applications and others were able to submit only one or two applications. It is possible that those with fewer applications graduated just a month or two before prior to the survey. Forty percent employed graduates submitted between 11 and 20 applications before they were hired, with 80 percent taking from one to six months to eventually land a job. Only 20 percent became employed within a month after graduating.

The top-ranked characteristics unemployed graduates looked for in a job were starting salary, relevance to course and interest. For the employed graduates, the most considered characteristics were relevance to course, interest and proximity to their domicile. Both groups valued a job's relevance to their study and interest highly. However, the starting salary seemed to be a much more important consideration for the unemployed than for the employed. On the other hand, proximity to one's house was ranked more highly for the employed than for the unemployed. These comparisons should be treated with caution, though. The employed were considering these characteristics after the fact, evaluating these features in hindsight. In contrast, the unemployed were assessing the characteristics within their current job-hunting framework.

Table 15: Comparison of job considerations between employed and unemployed graduates

Employed		Unemployed	
Reason	Mean	Reason	Mean
Relevance to course	3.56	Starting salary	2.83
Interest	3.89	Relevance to course	3.28
Prospect of attractive compensation	4.22	Interest	3.44
Proximity to house	4.56	Prospect for career advancement	3.63
Starting salary	4.78	Reputation of company	4.06
Prospect for career advancement	5.33	Potential for travel	4.26
Reputation of company	5.67	Benefits package	4.41
Benefits package	7.33	Proximity to house	4.94
Recommended by family and/or relatives	7.78	Regular schedule	5.11
Potential for travel	7.89	Recommended by family and/or relatives	7.00

Source: SEAMEO INNOTECH, 2009

Useful competencies learned in college

Many employed graduates perceived the relevance of their courses to be the key factor in getting a job. Intellectual skills were also a contributing factor as well as academic performance and character/personality. The qualification from an institution with a good reputation was not as big a factor.

The employed graduates also cited adaptability/flexibility, intellectual skills, teamwork, interpersonal skills and communication skills as competencies they had learned in college which have been useful for their first job. However, research skills, IT skills and entrepreneurship skills were not as useful in their jobs in comparison.

Reasons for unemployment

The unemployed graduates identified five factors – lack of job opportunity, lack of work experience, low starting salary, family concerns, and mismatch of skills and interest – to have contributed to their unemployed status. In contrast, factors such as the lack of networking connections, health concerns, lack of proximity to home, lack of opportunity for advancement, and engagement in further studies were seen to be of less importance.

Self-ratings

All the respondents generally considered themselves to be above average or excellent in their different skills, giving the highest rating to adaptability or flexibility, followed by teamwork, qualification from an institution with a good reputation, intellectual skills and interpersonal skills. Interestingly, they did not rate themselves too highly on communication skills, one that is most valued by employers.

The high positive ratings, however, should be evaluated in light of the survey findings on graduate unemployment in Malaysia which found that while all graduates believed themselves to be well-qualified, unemployed graduates tended to overrate themselves and be unrealistic in their self-assessment (Anon, 2003, cited in UNESCO, 2007).

Higher education institutions

Out of the 1,617 HEIs in the Philippines, 1,443 are private institutions. The public institutions consist of 111 state universities and colleges, 50 local universities and colleges, 1 Commission on Higher Education (CHED)-supervised institution, 9 other government schools, and 5 special schools. About 66 percent of the higher education students are enrolled in private HEIs.

The Philippine HEIs are acknowledged to play a vital role in meeting the development needs of the country. Aside from being committed to the pursuit of knowledge, skills, attitudes and values that make Filipinos productive members of society and improve their quality of lives, these institutions strive to develop the country's human resources to become globally competitive (Ricafort, n.d.). Quality, excellence, relevance and responsiveness are some of the goals that these institutions should be emphasizing.

However, tertiary education in the Philippines is judged to be of low quality because of the following: low passing rate in professional licensure examinations; incompatibility of the graduates' skills with the desired competencies for the workplace or entrepreneurship; and low employment rates (Syjuco, 2006, cited in UNESCO, 2007).

The average passing rate across all disciplines in the different licensure exams has been on a steady decline (Table 16). Data from the Professional Regulation Commission (PRC) showed that the trend continued: more than 1.4 million students took the different licensure examinations from 2004 to 2008, out of which only 36.4 percent passed. In 2009, the passing rate had dropped to 35.2 percent (Ronda, 2009).

Table 16: Average passing rate, 2001-2004

Year	Average passing rate
2001	48.45
2002	44.85
2003	41.71
2004	39.83

Source: CHED, 2004

Interviews with selected institutions pinpointed the following strategies being applied to make their graduates more employable:

- Hire faculty with good academic qualifications: The academic qualifications of the faculty are important considerations. Although CHED requires a faculty member to have at least a master's degree in the field where she or he teaches, only 30.64 percent of the faculty in HEIs have a master's degree, a marginal increase from 29.88 percent in 2003 (CHED, 2004). On the other hand, those with doctorate degrees decreased slightly from 9.21 percent in 2003 to 9.09 percent in 2004. There is a need to upgrade qualifications because improved credentials and teaching methods can contribute to better student learning that in turn should translate into higher productivity among graduates and higher passing rates in the professional licensure examinations (CHED, n.d.).
- Adopt curricula which are patterned after those of the premier state university: An established curriculum means that it has undergone numerous reviews and validation. These curricula have also been known to emphasize critical thinking, creativity, self-expression, and love of country.
- Invite representatives from the business sector to sit on the Board of Directors: Institutionalizing a link between the academe and industry will help the HEIs to be more in touch with the needs of the industry. This will allow the industry to provide input into the curriculum and make it more responsive and relevant for students to acquire the skills needed by employers.
- Implement more marketable courses and other ladderized programmes (e.g., hotel and resource management) or short courses to address quantitative mismatches.
- Encourage extracurricular activities among students: This will help to increase the students' capacity and broaden their perspectives. Through such activities, students are able to reflect on their achievements and the development of their own employability (Yorke, 2001, cited in Lees, 2002).

- Institute career guidance services: These services will serve as an important step towards improving employability of university graduates because they can enhance the links between universities and industry.
- Provide apprenticeships or on-the-job training for students to acquire practical skills.
- Offer quality education that fosters generic skills that make students more appealing to a variety of employers across multiple work contexts and disciplines. This is in line with a suggestion that higher education develops generic competencies which would prepare students for the workplace (Warn and Tranter, 2001). By developing these generic competencies, students become adaptive and adaptable.

Employers

From the employers' perspective, employability is the tendency of graduates to exhibit attributes or characteristics that employers foresee as necessary for the effective functioning of their organization in the future (Harvey et al., 1997). Studies have shown that employers, at least those from the private sector, tend to look for more than the educational credentials (Gunawardena, 1993). For them, education should be viewed in the broader sense, with learning not confined to what is learned from the book; rather it entails the development of higher cognitive abilities and applicable transferrable skills, along with personal development and language proficiency.

Other studies have pointed to the preference of employers for graduates who have "self-theories" that are characterized by confidence, optimism and the belief in their ability to make a difference. Employers likewise want graduates who are able to adapt to the workplace, who can use their skills to advance the organization, who can participate in innovative teamwork (Little, 2001), and who can display critical thinking required for innovation and the anticipation of change (Harvey et al., 1997). In a survey conducted in Sri Lanka (Chandrasiri, 2008), initiative, flexibility and adaptability emerged as the top three attributes for private sector employment. Other frequently cited attributes include communication skills, team orientation, trainability, presentation skills, positive attitudes, accountability, ambition, discipline and civic skills.

For this research paper, interviews with human resource managers from private sector enterprises representing the IT and health-care sectors were conducted. Respondents likewise underscored several attributes that they looked for in their potential employees. In the call centre industry, for instance, communication skills remain the premium criterion. Several studies have pointed out that the rise of service industries and the use of information technology have made such softer skills more important in entry-level jobs (e.g., McQuaid, 2006). The overwhelming observation, however, seemed to be that graduates lacked the ability to communicate well, particularly in English, which is the language used in the call centres. Other non-local studies confirmed that good communication skills were lacking in many of their own graduates (Chandrasiri, 2008; Beaven and Wright, 2006).

The employers from the call centre industry also positively evaluated those applicants who displayed good listening and typing skills, high IQ, strong confidence, persuasive skills, and people skills. It is interesting to note that in this industry, being a graduate is not a prerequisite for employment. On the other hand, the attributes that were important for those in the health-care industry were good technical skills, a nurturing or caring attitude, and customer-orientation. These were generally found to be inadequate in new graduates necessitating an additional five to six months' training to ensure that skills, knowledge and attitude comply with international standards.

Such skill mismatches, where the graduates' qualifications do not meet the needs of the employers, were a common theme among the key informants. Apparently, the knowledge and skills that were being transferred by the educational institutions to their students did not coincide with those needed in the outside world. Another kind of mismatch that employers referred to was the divergence between the graduates being produced and the type of jobs available. It was mentioned, for example, that many nurses were found working in call centres.

The increasing difficulty in getting qualified applicants had led the industry to take action. One was to establish linkages with the academe in selected HEIs to update them on current trends, developments and standards in the field that need to be incorporated into the curriculum. They had also opened up internship opportunities for students. This relationship may be getting results as the percentage of passers from the partner schools in the licensure examinations has improved.

Government policies

Under the Medium-Term Philippine Development Plan (MTPDP) 2004-2010, one of the priority strategies involves improving the quality of HEIs, programmes and graduates to match the demands of domestic and global markets. This is further highlighted in the Medium-Term Plan for the Development of Philippine Higher Education 2005-2010 whose implementation is under the jurisdiction of the CHED, the governing body for both public and private HEIs. Some of the strategic goals that bear relevance to the development of graduate employability leading to a decrease in graduate unemployment include:

- **Quality and excellence:** This is in recognition of the need to upgrade HEI programmes and standards to facilitate international competitiveness. The major programmes and projects that are being implemented include: international benchmarking to upgrade policies, standards and guidelines; competency-based curricula; Centres of Excellence and Centres of Development; autonomous and deregulated HEIs; technical panels (technical committees, task forces, technical working groups); regional quality assessment teams; CHED-PRC joint efforts; accreditation; faculty development project; institutional quality assurance though monitoring and evaluation; strengthening proficiency in English of college teachers; and evaluation of graduate education.
- **Relevance and responsiveness:** This is to ensure responsiveness of higher education to the labour market. Some of the major programmes and projects to address this are: national higher education research agenda; Republica Awards; curriculum re-engineering and development; integrated research utilization programme; technology commercialization and corporatization; graduate tracer studies; utilization of information and communication technology; academe-industry linkages/summits; retooling and lifelong learning.

Some specific programmes that have been undertaken in support of these goals include:

- **Scholarship/student financial assistance programmes for higher education:** One of the programmes aims to provide vouchers, expand scholarships and other forms of student assistance that will expand access to tertiary education, particularly to the priority courses or disciplines (in 2004-2005 these priority disciplines were maritime education, information technology, agriculture fields, teacher education, engineering, and health sciences). Another is the student financial assistance programme where financially disadvantaged third year, fourth year and graduating students enrolled in priority courses will be provided interest-free student loans whose repayment would start not later than two years after graduation.
- **Centres of Excellence and Centres of Development:** These centres, which currently number 275 in various disciplines based in 79 HEIs around the country, have been recognized for their high level of standards in instruction, extension services and research. Under the MTPDP, the centres will be sustained while more centres will be identified in priority programmes. The Centres of Development will be supported for faculty development, instructional programmes and materials development and networking. They are expected to establish links with the industry to make their programmes more responsive to the needs of the labour market. In addition, they are expected to provide leadership and assistance to other HEIs.
- **Curriculum updating and upgrading:** The MTPDP is committed to undertake activities that will make higher education curricula more comparable to international standards and more responsive to national development and industry needs as well as ensuring the employability of graduates. These activities include strengthening Technical Panels, conducting international benchmarking of programmes, encouraging the use of ICT in the enrichment of teaching and learning, and promoting industry-academe links.
- **Faculty development programmes:** These programmes are intended to upgrade the academic qualifications of the college faculty in priority fields through provision of scholarships. They support faculty development, strengthening of graduate education, and exchange programmes with HEIs in other countries. CHED has also enabled many faculty members to enrol in international training programmes.

- **Quality assurance system:** Efforts to strengthen the quality assurance system have been undertaken such as rationalizing the regulatory and quality assurance policies and programmes, improved monitoring and evaluation of HEIs, and phasing out poor quality programmes.

Conclusions

Graduate unemployment in the Philippines has largely been attributed to a structural or skills mismatch. This mismatch occurs because the jobseekers, in general, are not seen by employers as having the necessary skills for employment (McQuaid, 2006). One area of this mismatch lies in the inadequacy of the general skills and knowledge among new entrants to the labour force. These new graduates are perceived to lack the requisite level and quality of communication, technical and job-specific skills needed in the workplace. Another mismatch can be found in the disparity between the type of graduates or trainees produced and the type of jobs available. Thus, we have thousands of customer service jobs in the booming call centre and BPO industries being filled by graduates who have been trained to be nurses and teachers. The Philippines also has an oversupply of business graduates, as demonstrated by the 22 percent who had business degrees in 2004, many of whom ended up being unemployed (Ramota, 2005).

This current study reveals another closely related mismatch of perceptions between the assessments of the graduates about their own employability versus the assessment of the employers. Graduates from this sample tended to rate themselves highly with regard to their employability attributes. They appraised the training they received from their HEIs positively. This, however, did not coincide with the assessments from the employers.

In the face of work insecurity and unemployment, employability is increasingly seen as necessary for individuals to ensure continuous lifetime employment (Hillage and Pollard, 1998). This study confirms that employability, graduate employability in particular, is a function of a range of individual characteristics. Individual-level supply-side factors often associated with labour market outcomes are shown to be important. Some of these employability attributes cited in this study include key transferable skills such as adaptability, intellectual skills, teamwork and basic interpersonal skills and their usefulness to the graduates in their jobs. The employed respondents who mentioned the relevance of their courses to their jobs underscored the importance of academic qualifications and job-specific skills to be successful in their jobs. Both unemployed and employed graduates in the sample have expressed their desire to get jobs that are pertinent to their chosen fields. Job-seeking strategies such as the use of the internet, walk-in interviews and attendance at job fairs demonstrate the respondents' use of both formal and informal search methods. It appears that employed graduates tend to attended job fairs more frequently than those who were unemployed. This suggests that certain job-seeking strategies may be more effective in finding employment. It is also interesting to note the greater weight given to starting salary by the unemployed graduates in the sample (relative to the employed graduates) when choosing a job. This supports a suggestion that wage flexibility may be important to an individuals' employability (e.g., Aberg, 2001).

Aside from the individual factors, external demands are equally important. Many respondents cited the lack of job opportunities as the main factor for their unemployed status. Labour market conditions, recruitment and selection procedures, and preferences of the employers have to be taken into account too. Thus, the premium placed by employers on communication skills will impact the employability of the graduate. The results of the survey in this report, however, showed that communication skills were not rated highly by both the graduates and employers alike. On the other hand, mechanisms for matching labour demand and supply – such as providing accessibility to public services and job-matching technologies (e.g., job fairs, career or job placement services), and implementing measures to ease the school-work transition (e.g., linkages between academe and industry/employers) – are perceived to be more beneficial.

A broad understanding of employability taking into account individual factors and the contextual factors is a useful approach particularly when the data and sample size are small. This provides a framework for developing policies to address the unemployment of graduates. Based on the findings from this study, the following recommendations need to be considered:

- CHED should conduct regular studies to analyze the employment/unemployment of new graduates and provide up-to-date information that will assist policy makers to address graduate unemployment.
- Minimum standards for graduate tracer studies should be established, with such studies being regularly conducted by all HEIs and collated for sharing.
- More programmes involving apprenticeship, entrepreneurship training, internships and on-the-job training should be institutionalized in academic programmes, particularly for poor and marginalized young people. These programmes should help to ease the transition from school to workplace.
- Higher learning institutions need to nurture the development and integration of generic skills, such as communication and other soft skills, into subjects, courses and programmes to make graduates more employable.
- Employment or job placement services, career guidance/counselling and labour market information especially on less popular careers should be provided by all HEIs to prepare students for work after graduation.
- Career management skills can be integrated into university courses starting from Year 1 to be reinforced by constant input and feedback from faculties, industry and students. Longitudinal tracking of cohorts can be done to assess how beneficial these programmes are with respect to the development of the necessary attributes for graduate employability and employment outcomes.
- Continuing university-based career support to recent graduates should be considered especially since students tend not to think about their future careers until graduation and therefore have a poor idea of what to expect from life beyond the university (Perrone and Vickers, 2003).
- Academe-employer partnerships should expand beyond the industry sector and include those not traditionally sought by graduates such as NGOs, non-profit groups and other private sector organizations.
- Web-based career guidance portals can be established to facilitate collaboration among the students, new graduates, career counsellors and employers, and should include links to different career guidance tools and manuals, and labour demand/supply statistical reports.
- Appropriate and updated labour market information should be provided to bridge the information gap between HEIs and employers, and between people looking for work and employers. To increase the availability of labour demand statistics, publication of annual reports that indicate current labour demand by job sector/classification and scenarios for the next few years should be produced.

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IT graduates employability: Malaysia

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Introduction

The Asia-Pacific region is facing high levels of unemployment and underemployment. The economic slowdown has reduced the employment growth rates enjoyed by the region in the 1990s (Bandara, 2006). The International Labour Organization (ILO) estimated that the number of unemployed in Asia was likely to have increased by between 9 and 26.3 million in 2009, compared to 2007 (ILO, 2009a and 2009b). Thus, governments in the region were urged to invest in their labour forces and provide crisis response packages to ensure quick recovery.

In Malaysia, the number of unemployed as of the second quarter of 2009 was 415,700 people or 3.6 percent of the total labour force of about 11.45 million (Department of Statistics Malaysia, 2009), with domestic unemployment rate projected to rise to 4.5 percent by the end of 2010. According to the Deputy Minister of International Trade and Industry, Mukhriz Tun Mahathir, "the figure is high and we have never reached this high a figure before. At the same time, we are trying to reduce the jobless rate… We need to do something by coming up with creative action to minimise the impact of this current crisis" (The Star Online, 14 Aug 2009).

Annually, Malaysia produces approximately 60,000 graduates from all its higher education institutions (HEIs). In 2006, the highest graduate unemployment rates were among those in computer science (19.5 percent), business administration/management (18.5 percent) and engineering (15.3 percent) (Norshima, 2008). Such high percentages are disconcerting and require a closer examination to address the underlying causes.

This chapter focuses on the IT graduate employability issue in Malaysia under a UNESCO-initiated research on graduate employability. The study presents the employment status of IT graduates, identifies the skills acquired by the graduates in comparison to the skills required by employers, and discusses the concept of employability. It is hoped that the findings will facilitate more concerted efforts among government agencies, HEIs and IT companies to re-examine the development of IT curricula and programmes, as well as to enhance the employability of IT graduates.

Background

In the early 1990s, many universities in Malaysia began offering IT programmes and significant efforts were made to attract students to enrol in these programmes. To keep pace with changing needs during the mid-2000s, the IT industry had to realign the job descriptions of their staff to cater to greater demands for customer support and application maintenance. This in turn requires IT graduates to possess different sets of skills.

Since then, HEIs have begun changing their curricula or adding activities that would equip their students with the required skills. The Malaysian government increased funding to create programmes and support activities to increase graduate employability, such as the Degree++,[22] bridging gap, apprenticeship, entrepreneurship, finishing school and graduate mobility/internship programmes. The government has also organized seminars to promote the employment of graduates (Japatan Pengajian Tinggi, 2009).

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22 The Degree++ programme was set up by some universities to provide students with knowledge and skills to increase their competitiveness.

Definition of employability

Graduate employability is an important issue for higher institutions worldwide, including in Malaysia. Factors that influence market demand for graduates include the economic situation, technological advancements and political pressures. Many studies have been conducted on unemployment and employability to identify the skills sought by employers (Archer and Davison, 2008; Petrova and Medlin, 2009) or to find ways to increase the competitiveness of graduates (Matoušek and Ryšavý, 2007). Some focused on matching the supply of graduates to the demand of employers, while others examined the concept of "graduateness" instead of employability (Walker, 1998; Glover et al., 2002; Shukran and Morshidi, 2009).

The definition of employability varies from one study to another. It can be seen to be closely related to an individual's skills (McLaughlin, 1995) or in terms of an individual's characteristics in relation to the labour market context (Hillage and Pollard, 1998, p.1):

> "Employability is about being capable of getting and keeping fulfilling work. More comprehensively, employability is the capability to move self-sufficiently within the labour market to realise potential through sustainable employment. For the individual, employability depends on the knowledge, skills and attitudes they possess, the way they use those assets and present them to employers and the context (e.g. personal circumstances and labour market environment) within which they seek work."

Employability can also refer to a set of achievements, including skills, understanding and personal characteristics, which make it easier for the graduates to be successful in the career that they have chosen (Yorke, 2006). More specifically, he sees employability as being related to three abilities: a) the ability to gain employment, b) the ability to maintain employment, and c) the ability to obtain new employment if required. Graduates need skills for employment and also to advance in their careers.

In general, the components of employability include assets, deployment, presentation and the context of personal circumstances and the labour market. Assets refer to individual knowledge (what they know), skills (what they do with what they know) and attitudes (how they do it). Deployment is a set of abilities comprising career management and job search skills. Presentation is the individual's ability to reveal their assets to the market or potential employers through their curriculum vitae, references, interview techniques and work experience. The context of personal circumstances and the labour market refers to the individual's personal situation and the external context, and the relationship between the two (Hillage and Pollard, 1998). Employability skills involve intellectual skills, personal attributes and knowledge of organizations and how they work (Coopers and Lybrand, 1998; Lees, 2002).

According to most definitions, a graduate's skills, capabilities, competencies and attributes are the key factors for employability.

Description of the study

This study focused on first-degree IT graduates from HEIs in Malaysia. Since the IT programmes are rather broad and varied, the degrees conferred on the graduates include Bachelor of Science, Bachelor of Computer Science, Bachelor of Information Technology and Bachelor of Information Systems. The study examined the perspectives of three target groups: graduates, academics working at HEIs offering IT programmes, and employers who hire IT graduates, including multi-national corporations (MNCs), small and medium enterprises (SMEs), software houses and government agencies (including schools).

This study aimed to answer the following research questions:

- What is the level of employment among IT graduates in Malaysia?
- What are the knowledge and skills acquired by IT graduates from HEIs?
- What are the employability skills needed, as perceived by employers?
- How do HEIs prepare their students to be employable?

- How does industry determine the important skills needed when hiring graduates?
- How does university prepare students to be ready for the job market?
- Are there any differences in expectations of graduate performance and employability among industry, academics and students themselves?

These questions were investigated using both quantitative and qualitative methods.

Quantitative research design

Data for the quantitative research were obtained from the graduates tracer study conducted between 2006 and 2008 (MoHE, 2009). The objectives of the tracer study were to:

- Collect information about graduates' backgrounds in terms of family, education, economy and career planning.
- Identify graduates' level of satisfaction regarding the services rendered by HEIs.
- Help in forecasting higher education achievements based on the investment spent.
- Monitor graduates' self improvement and career development.
- Enhance networking between industry and government.

Information about the graduates was gathered from all public institutions of higher learning (20 universities) via the Ministry of Higher Education (MoHE) portal in 2006. Graduates were encouraged to complete the online questionnaires in two phases: pre-convocation and post-convocation. The timeframe for the data collection was three to six months after completion of study. The total number of respondents was 283,192, of which 37.6 percent were male and 62.4 percent were female graduates, while IT graduates made up about 7 percent of the total respondents. The tracer study had a response rate of between 87.7 and 89.6 percent (Md. Yusof et al., 2009).

Based on the information collected, the study used both descriptive statistics and cross-tabulation to measure factors that impact employability, together with an Exploratory Factor Analysis with Varimax Rotation of all the items. This is a cross-sectional study and the unit of analysis is at the individual level.

Variables and measures

For the purpose of this research, the variables measured were the students' innate skills, acquired skills, ability and capability to perform the job, and employability.

The students' innate skills were measured through a list of attributes and each attribute was measured with a five-point Likert-type scale ranging from 1= strongly unsatisfactory to 5= strongly satisfactory. The attributes were the graduates' knowledge/skills acquired from their programme of study which included general IT skills; proficiency in Bahasa Malaysia (the national language); proficiency in English; interpersonal communication skills; creative and critical thinking skills; problem solving skills; analytical skills; teamwork; inculcation and practicing of positive values; and exposure to general knowledge and current issues.

The students' acquired skills were also measured through selected attributes and, again, each attribute was measured with a five-point Likert-type scale ranging from 1= strongly unsatisfactory to 5= strongly satisfactory. The attributes were skills gained through the influence of the educational institution, including self-confidence; maturity; resilience; knowledge; interest in learning; sensitivity to current affairs; independence or self reliance; creative and critical thinking; readiness to face the working world and challenges; problem solving and decision making; teamwork; and effective communication.

Similarly, the students' ability and capability to perform the job was measured using the same the five-point Likert-type scale. The attributes measured included workplace adaptability; problem solving and decision making skills; confidence to perform the task required; working in a team; communication skills; proficiency in Bahasa Malaysia (spoken); proficiency in Bahasa Malaysia (written); proficiency in English Language (spoken); proficiency in English Language (written); and ability to use IT applications.

Finally, the IT graduates' employability was measured through two objective variables, namely monthly income (inclusive of allowances) and employment status, which was either permanent, contract, temporary, self-employed, or working for their own families.

Techniques for data analysis

The data analysis was conducted using the SPSS for Windows 11.5.0 software. The statistical tests were conducted using descriptive statistics, cross tabulations and goodness of fit measure.

Descriptive statistics were employed to study demographic variables such as ethnic groups, sex, family income, job status, sponsorship, scholarship, residential status, entry qualifications, mode of study, state of residence, Malaysian Universities English Test (MUET) qualification, area of specialization, types of disability, and number of graduates.

Cross tabulations (chi square) were performed between IT graduates' monthly income and their employment sector; between IT graduates' monthly income and their employment status; between IT graduates' cumulative grade point average (CGPA) and their employment status, and between IT graduates' monthly income and their CGPA.

Exploratory Factor Analysis with Varimax Rotation was performed on all attributes of innate skills, acquired skills and on ability to execute the job. Here the researchers applied the two-stage rule to ensure that a given item represented the construct underlying each factor. The researchers used a weight of 0.35 as the minimum cut-off (Hair et al, 2006). To avoid problems of cross-loadings, the researchers required that each item clearly defined only one factor. Operationally, if the difference between weights for any given item was less than 0.10 across factors, the researchers deleted it from the final scale (Snell and Dean, 1992).

Qualitative research design

Qualitative methods used to gain information included semi-structured interviews and focus group discussions. The researchers worked with multiple groups of people from the business sector and HEIs to understand their perspectives on the employability issues. Students were questioned about what they had learned during their university years, the important skills they had brought to the workplace and how they had used their skills in their jobs.

Through a convenient" sampling strategy (Kvale, 1996; Salkind, 2009; Bryman and Bell, 2007), employers and academics were recruited for the interviews which were conducted in August and September 2009 over a period of about three weeks. Each interview was conducted at the employers' place of work. All the companies visited were either private or MNC. Most of the employers interviewed had a computer science, information technology or engineering background. Seeking to understand the criteria employers used when hiring new graduates, the key questions asked were:

- What are the important skills needed by the industry?
- What other skills are needed from the employees?
- What is your opinion on the relationship between CGPA and employability?

The survey team also interviewed (via phone and email) six academics (heads of departments, deans or deputy deans) from six universities and conducted a semi-structured interview with a professor from the United Kingdom during her visit to the university department. The questions were structured to elicit responses on how their programmes and curriculum had helped to provide the necessary skills for their students. Each interview lasted about forty minutes.

For the focus groups, the researchers decided to concentrate on students who were pursuing their postgraduate degrees, e.g., Master of Science, Master of IT Technopreneurship or Ph.D, selecting graduate students who had a Computer Science or Information Technology undergraduate degree from a local university and had some minimal working experience. However, some overseas graduates were included to provide a different perspective. All the participants had worked in either the private or government sectors.

According to Kitzinger (1995), the number of focus groups should be between six and fifty for a research study. In this study, however, only two focus groups were conducted because the researchers also used other data collection techniques (interviews and surveys). Each focus group session lasted about one hour.

Prior to beginning discussions in the focus group sessions, the moderators gave the respondents a briefing on expectations of respondents and the respondents were asked to fill in a form that asked them three fundamental questions:

- Do you think that your academic performance (i.e. CGPA) helps you in your job?
- What are the important skills you learned at university?
- What are the skills that your employer looked at?

During the focus group sessions, the researchers observed the interactions among group members (Salkind, 2009) and elicited explanations from the respondents in their own words (Kitzinger, 1995). Respondents were encouraged to communicate with each other, exchange their experiences, and comment on each other's stories.

Results and data analysis

Profile of the IT graduates

In 2008, a total of 60,311 students in Malaysia graduated with a bachelor's degree, out of which 3,568 (5.9 percent) were IT students. Almost two thirds of the IT graduates were female (Table 1).

Table 1: Sex of the graduates

Sex	Number	Percentage (n=3,568)
Male	1,266	35.5
Female	2,308	64.5
Total	3,574	100.0

It was found that 60.7 percent of the IT graduates obtained employment after graduation, but 39.3 percent were unemployed at the time of the survey (Table 2). Among the female IT graduates, 58.0 percent were employed, while 65.6 percent of the male IT graduates were employed. Although the majority of IT graduates were females, more females were unemployed (42.0 percent) compared to male graduates (34.4 percent). This higher percentage of unemployed female graduates indicates that there may be discrimination in hiring female IT graduates, but more research is needed before any definitive statements can be made.

Table 2: Employment status

Status	Gender		Total
	Male (percentage within group)	Female (percentage within group)	
Employed	65.6	58.0	60.7
Unemployed*	34.4	42.0	39.3
Total	100.0	100.0	100.0

*Unemployed included waiting for a job placement, pursuing postgraduate education or enrolled in a re-skilling programme.

Over two thirds (68.4 percent) of the IT graduates had a monthly family income of RM 2,000 or less (Table 3). Almost all the IT graduates (94.2 percent) had a monthly family income of less than RM 5,000.

Table 3: Monthly family income

Monthly income inclusive of allowances (RM))	Percentage N=3568
<500	9.5
501-1,000	26.0
1,001-1,500	19.3
1,501-2,000	13.6
2,001-2,500	9.7
2,501-3,000	7.1
3,001-5,000	9.0
>5,001	5.8
Total	100.0

US$ 1 = RM 3.4

Almost all the IT graduates (94.9 percent) obtained financial assistance for their undergraduate studies, and most received funding from the National Higher Education Loan Fund (PTPTN) (Table 4).

Table 4: Sponsorship or scholarship

Sponsors	Percentage with sponsorship or scholarship N=3,568
National Higher Education Loan Fund (PTPTN)	82.9
Self-sponsored	5.0
JPA (Public Service Department)	4.0
MARA (Federal agency)	2.3
State government	1.6
Ministry of Education Malaysia	1.0
Ministry of Higher Education	0.3
Telekom (National Telecommunication Company)	0.3
Bank Rakyat, Maybank, CIMB, etc. (Financial institutions)	0.2
Tenaga Nasional Berhad (National Electric Company)	0.1
Bank Negara Malaysia (Central Bank of Malaysia)	0.1
Ministry of Defence Malaysia	0.1
Ministry of Youth and Sport	0.1
Kuok Foundation Berhad (Private corporation)	0.0
Others	2.0
Total	100.0

Slightly more than half (55 percent) of the surveyed IT graduates entered the HEIs with either a Higher School Certificate (STPM) or a Matriculation Certificate (a pre-university certification) (Table 5). Approximately one quarter (25.9 percent) had a diploma and almost one sixth (15.5 percent) of the IT graduates already had a bachelor's degree in a different field. Additional research is required to study why students who already had a bachelor's degree would later pursue a degree in IT.

Majority of the IT graduates were full time students. Despite the potential of IT to support distance and off-campus learning, it is interesting to note that only a negligible number chose these modes of learning. It is possible that students needed access to equipment (computers, software, etc.) that were available only on campus, and the nature of the subject required significant hands-on support from trainers and tutors. Further research will be useful to explore how technology can be used to increase the number of students, particularly working adults, who may wish to continue their studies part time or by distance mode.

Table 5: Entry qualification and mode of study

Variable	Number	Percentage
Entry qualification		
Malaysian Certificate of Education (SPM)	37	1.0
Matriculation	963	27.0
Higher School Certificate (STPM)	998	28.0
IT Certificate (SIJIL)	72	2.0
Diploma	924	25.9
Bachelor's Degree	551	15.5
Advanced Diploma	1	0.0
Pre University (ASASI)	19	0.5
Others	3	0.1
Total	3,568	100.0
Mode of study		
Full time	3,426	96.0
Part time	125	3.5
Distance learning	4	0.1
Off-campus	13	0.4
Total	3,568	100.0

The Malaysian Universities English Test (MUET), an English proficiency test equivalent to TOEFL or IELTS, is a requirement for all students entering Malaysian public universities. The study found that most IT graduates were scored at Bands 3 and 4 (Table 6).

Table 6: MUET qualification

Score	Number	Percentage
Band 1	68	1.9
Band 2	666	18.7
Band 3	1,537	43.0
Band 4	1,024	28.7
Band 5	184	5.2
Band 6	11	0.3
Not applicable	78	2.2
Total	3,568	100.0

Almost one third of the graduates specialized in information systems and development and about one fifth specialized in computer sciences and computer systems (Table 7). The remainder specialized in networking; multimedia, management of information systems, industrial computing and artificial intelligence.

Table 7: Area of specialization

Area of specialization	Number	Percentage
Information systems and development	386	29.7
Computer sciences and computer systems	240	18.4
Networking	207	15.9
Multimedia	206	15.9
Management of information systems	145	11.1
Industrial computing	72	5.5
Artificial intelligence	46	3.5
Total	1,302*	100.0

* Data not available from 2,266 respondents

Only seven out of 3,568 IT graduates were people with a disability (PWD), of whom six had some physical disability and one with hearing problems (Tables 8). Further study is required to investigate whether there are any particular institutional or discriminatory barriers to PWD studying IT.

Table 8: Graduates with disabilities

With disability	Number	Percentage
Yes	7	0.2
No	3561	99.8
Total	3,568	100.0

There are 13 public universities in Malaysia. About half (50.5 percent) of the surveyed IT graduates graduated from three of these universities: Universiti Teknologi MARA (UiTM), Universiti Utara Malaysia (UUM) and Universiti Teknologi Malaysia (UTM). UiTM has the largest percentage of graduates (21.2 percent) with branch campuses in all states of the country (Table 9).

Table 9: Public universities and number of IT graduates

Public universities	Number	Percentage
Universiti Malaya	188	5.3
Universiti Kebangsaan Malaysia	386	10.8
Universiti Putra Malaysia	319	8.9
Universiti Islam Antarabangsa Malaysia	60	1.7
Universiti Teknologi MARA (UiTM)	755	21.2
Universiti Sains Malaysia	142	4.0
Universiti Teknologi Malaysia (UTM)	505	14.2
Universiti Utara Malaysia (UUM)	539	15.1
Universiti Malaysia Sarawak	73	2.0
Universiti Malaysia Sabah	180	5.0
Universiti Teknologi Tun Hussein Onn	77	2.2
Universiti Malaysia Terengganu	82	2.3
Universiti Teknikal Malaysia Melaka	262	7.3
Total	3,568	100.0

Cross tabulation

Cross tabulation (chi square test) analysis was done between:

- IT graduates' monthly income and their employment sector (Tables 10, 11 and 12)
- IT graduates' monthly income and their employment status (Tables 13, 14 and 15)
- IT graduates' cumulative grade point average (CGPA) and their employment status (Tables 16 and 17), and
- IT graduates' monthly income and their CGPA (Table 18).

IT graduates' employment and their monthly income

Most of the IT graduates (79.6 percent) were working in the private sector, while 20.4 percent were working with the government or with government-linked companies (Table 10). Among those who were in the private sector, local private companies were the main employers, followed by MNCs. A small percentage found employment in NGOs while 2.8 percent were self employed. Future studies can be conducted to gauge the needs of these various sectors in terms of the graduates' skills and how public universities could produce IT graduates with the right skills and knowledge needed. With high unemployment rates, IT graduates will benefit substantially if they also receive training in entrepreneurship to help them start their own businesses.

Table 10: Employment sector

Employment sector	Number	Percentage
Government	275	12.6
Statutory bodies	85	3.9
Government-linked companies	84	3.9
Local private companies	1,046	48.2
Multinational/foreign private companies	562	25.9
Own companies (self-employed)	60	2.8
Non-government organizations	31	1.4
Others	29	1.3
Total	2,172*	100.0

***Note:** Data not available from 1,396 respondents

The average IT graduate's salary level was RM 1,500 per month. Clearly, self-employed graduates and those working for NGOs earned less than their counterparts in the private sector (Tables 11 and 12). It is not surprising that most graduates prefer to work for private companies or MNCs.

Table 11: Monthly income and percentage within employment sector (Malaysian ringgit)

Monthly income inclusive of allowances (RM)	Sector								Total
	Govt.	Statutory bodies	Govt-linked company	Local private company	MNC/ foreign private company	Own company	NGOs	Others	
<500	2.2	1.2	-	2.4	0.7	25.0	-	10.3	2.5
501-1,000	17.5	7.1	3.6	12.0	3.2	30.0	12.9	27.6	10.6
1,001-1,500	29.9	22.4	8.3	22.3	7.3	20.0	41.9	24.1	19.1
1,501-2,000	23.7	22.4	33.3	38.3	24.6	10.0	29.1	20.8	30.9
2,001-2,500	18.6	23.5	33.3	21.4	41.7	13.3	16.1	6.9	26.4
2,501-3,000	5.5	15.2	11.9	2.5	17.6	-	-	-	7.5
3,001-5,000	2.6	8.2	3.6	1.0	4.4	-	-	6.9	2.5
>5,001	-	-	6.0	0.1	0.5	1.7	-	3.4	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

US$ 1 = RM 3.4

Table 12: Percentage within monthly income by employment sector

Monthly income inclusive of allowances (RM)	Sector								Total
	Govt.	Statutory body	Govt-linked company	Local private company	MNC/ foreign private company	Own company	NGOs	Others	
<500	11.1	1.9	-	46.3	7.4	27.8	-	5.6	100.0
501-1,000	20.9	2.6	1.3	54.3	7.8	7.8	1.7	3.5	100.0
1,001-1,500	19.9	4.6	1.7	56.2	9.9	2.9	3.1	1.7	100.0
1,501-2,000	9.7	2.8	4.2	59.6	20.6	0.9	1.3	0.9	100.0
2,001-2,500	8.9	3.5	4.9	39.2	40.9	1.4	0.9	0.3	100.0
2,501-3,000	9.2	8.0	6.1	16.0	60.7	-	-	-	100.0
3,001-5,000	13.0	13.0	5.6	18.5	46.3	-	-	3.7	100.0
>5,001	-	-	45.5	9.1	27.3	9.1	-	9.1	100.0
Total	12.6	3.9	3.9	48.2	25.9	2.8	1.4	1.3	100.0

US$ 1 = RM 3.4

IT graduates' monthly income and their employment status

Table 13 shows that about 68 percent of the graduates earned at least the average monthly salary of RM 1,500. Most of the employed IT graduates were either permanent or contract staff (Table 14). Over 78 percent of graduates with permanent work status and 69 percent on contract earned at least the average monthly salary compared to 33.3 percent who were self-employed, 28.4 percent of the temporary workers and 25 percent who worked for their families (Table 15).

Table 13: Monthly income

Monthly income inclusive of allowances (RM)	Number	Percentage
<500	54	2.5
501-1,000	230	10.6
1,001-1,500	413	19.1
1,501-2,000	674	30.9
2,001-2,500	573	26.4
2,501-3,000	163	7.5
3,001-5,000	54	2.5
>5,001	11	0.5
Total	2,172*	100.0

US$ 1 = RM 3.4
* Data not available from 1,396 respondents

Table 14: Job status

Job status	Number	Percentage
Permanent	1,115	51.3
Contract	726	33.4
Temporary	289	13.3
Self-employed	30	1.4
Working with families	12	0.6
Total	2,172*	100.0

* Data not available from 1,396 respondents

Table 15: Employment status and income

Monthly income inclusive of allowances (RM)	Employment status					Total
	Permanent	Contract	Temporary	Self-employed	Working with families	
<500	1.1	1.0	9.0	20.1	25.1	2.5
501-1,000	5.1	7.7	37.0	23.3	25.0	10.6
1,001-1,500	15.4	21.9	25.6	23.3	25.0	19.1
1,501-2,000	30.2	37.3	20.8	10.0	8.3	30.9
2,001-2,500	33.1	25.0	6.9	3.3	8.3	26.4
2,501-3,000	11.1	5.0	0.7	3.3	8.3	7.5
3,001-5,000	3.3	2.1	-	6.7	-	2.5
>5,001	0.7	-	-	10.0	-	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

US$ 1 = RM 3.4

IT graduates' grade point average, their employability and income

The cumulative grade point average of IT graduates tends to be positively correlated with their employability and with their enrolment in further studies, as indicated in Tables 16 and 17. There is also a positive correlation between IT graduates' CPGA and their monthly income (Table 18).

Table 16: Cumulative grade point average and employment status

CPGA	Number					Total
	Employed	Further studies	Upgrade skill	Waiting for job placement	Unemployed	
2.00-2.49	120	4	4	11	90	229
2.50-2.99	815	28	45	60	444	1,392
3.00-3.49	932	94	32	67	370	1,495
3.50-3.69	185	23	8	10	53	279
3.70-4.00	115	24	1	8	25	173
Total	2,167	173	90	156	982	3,568

Table 17: CGPA (percentage within CGPA) and employment status

CPGA	Number					Total
	Employed	Further studies	Upgrade skill	Waiting for job placement	Unemployed	
2.00-2.49	52.5	1.7	1.7	4.8	39.3	100.0
2.50-2.99	58.6	2.0	3.2	4.3	31.9	100.0
3.00-3.49	62.4	6.3	2.1	4.5	24.7	100.0
3.50-3.69	66.3	8.2	2.9	3.6	19.0	100.0
3.70-4.00	66.4	13.9	0.6	4.6	14.5	100.0
Total	60.8	4.8	2.5	4.4	27.5	100.0

Table 18: Monthly income and CGPA

Monthly income inclusive of allowances (RM)	Percentage within recorded CGPA					Total
	2.00-2.49	2.50-2.99	3.00-3.49	3.50-3.69	3.70-4.00	
<500	5.8	3.7	1.6	1.1		2.5
501-1,000	12.5	16.7	6.9	4.9	5.2	10.6
1,001-1,500	35.0	22.6	17.3	7.0	11.3	19.1
1,501-2,000	27.5	30.0	32.9	28.1	28.7	30.9
2,001-2,500	10.0	19.1	31.0	42.6	31.3	26.4
2,501-3,000	6.7	4.7	7.6	14.1	17.4	7.5
3,001-5,000	1.7	2.8	1.9	2.2	6.1	2.5
>5,001	0.8	0.4	0.8			0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

US$ 1 = RM 3.4

Factor analysis

Subjecting the variables to a vigorous analysis, the factors that have contributed the most, or the least, to the graduates' employability in terms of their innate skills, acquired skills and the ability and capability to do the job, were identified.

Innate and acquired skills

The factors measured included:

- General IT skills
- Proficiency in Bahasa Malaysia
- Proficiency in English
- Creative and critical thinking skills
- Problem solving and decision making skills
- Analytical skills
- Teamwork/group work
- Development of self-confidence
- Enhancement of self-maturity
- Development of self-resilience
- Becoming knowledgeable
- Enhancement of interest in learning
- Becoming more sensitive towards current affairs
- Increasing ability to be independent/self-reliance
- Being ready to face the working world and challenges
- Effective communication

The results from the measure of sampling adequacy was 0.97 and Bartlett's test of sphericity was 56,544.04 ($p<0.01$), which indicated that all items related to innate and acquired skills were appropriate.

The study found that maturity, resilience, self-confidence, problem solving and decision making skills, become more knowledgeable, and the ability to be independent or self reliance were the prime innate skills that contributed to the graduates' employability. In contrast, six items – teamwork, creative and critical thinking, ready to face the working world and challenges, enhanced interest in learning, increased sensitivity towards current affairs, and effective communication – were found to be less important.

The acquired skills that contributed most to the employability of graduates were problem solving, creative and critical thinking, and analytical skills. Whereas, these four items – teamwork; proficiency in English; proficiency in Bahasa Malaysia; and general IT skills – had less influence on their employability.

Ability and capacity to perform the job

A factor analysis was also conducted on the items listed below to measure the graduates' ability and capability to perform their jobs.

- Workplace adaptability
- Problem solving and decision making skills
- Confidence to perform the task required
- Working in a team
- Communication skills
- Proficiency in Bahasa Malaysia (spoken)
- Proficiency in Bahasa Malaysia (written)
- Proficiency in English Language (spoken)
- Proficiency in English Language (written)
- Usage of ICT
- Ability to use ICT applications

The resulting measure of sampling adequacy at 0.82 and Bartlett's test of sphericity at 21,135.05 ($p<0.01$) indicated that all the items measured were appropriate. Four factors – adaptability; proficiency in Bahasa Malaysia; proficiency in English Language; and technical skills – were the main factors influencing the graduates' ability to perform their jobs. Three items – workplace adaptability, working in a team and communication skills were found to contribute the least.

Table 19 provides an overview of the various factors and the strength of their contribution to the graduates' employability based on these findings.

Table 19: Factors contributing to graduates' employability

Innate skills		Acquired skills		Ability to perform a job	
More influential	Less influential	More influential	Less influential	More influential	Less influential
Maturity	Teamwork	Problem solving	Teamwork	Adaptability	Workplace adaptability,
Resilience	Creative and critical thinking	Creative and critical thinking	Proficiency in English language	Proficiency in Bahasa Malaysia	Working in a team
Self-confidence	Ready to face the working world and challenges	Analytical skills	Proficiency in Bahasa Malaysia	Proficiency in English language	Communication skills
Problem solving and decision making	Enhanced interest in learning		General it skills	Technical skills	
Become more knowledgeable	Increased sensitivity towards current affairs				
Ability to be independent/ self reliance	Effective communication				

Further research will be needed to determine the reasons for these findings and suggest how universities can enhance these skills in their IT graduates.

Qualitative analysis of focus group discussions with graduates

A total of 27 graduates participated in the focus group discussions (Table 20). The core questions posed during the focus group discussions included:

a. Acquired skills
   - What are the important skills acquired in university and how useful are those skills in the workplace?

b. Method to acquire skills
   - How do the graduates acquire those skills?
   - What other ways can the skills be taught?

c. Relationship between CGPA and employability
   - What are the graduates' views on the relationship between CGPA and employability?

Table 20: Focus group participants

No.	Gender	Grad. year	University	Major
1	Male	2000	Local university	MSc. IT
2	Female	1995	Local university	Distributed Computing (PhD candidate)
3	Female	1995	Local university	Systems (PhD candidate)
4	Female	2009	Local university	Computer Science
5	Female	2008	Local university	Mechanical-Automotive Engineering
6	Female	2007	Local university	Parallel and Distributed Computing
7	Male	2003	Local university	Software Engineering
8	Male	2008	Local university	Information Systems
9	Male	2008	Local university	Operations Management
10	Male	2007	Foreign university	Information System
11	Male	2008	Foreign university	Software Engineering
12	Male	2004	Foreign university	Physics Science
13	Female	2006	Local university	Information Systems
14	Female	2004	Local university	Information Technology (Networking)
15	Female	2009	Local university	Software Engineering
16	Female	2007	Local university	Information System Engineering
17	Female	2008	Local university	Computer Science
18	Female	2008	Local university	Business Information Systems
19	Female	2008	Local university	Business Information Systems
20	Female	2008	Local university	Business Information Systems
21	Female	2005	Foreign university	Electronic Engineering
22	Male	2008	Local university	E-commerce
23	Male	2007	Local university	Marketing
24	Male	2007	Local university	Natural Language Processing
25	Male	2006	Local university	Mathematics
26	Male	2008	Local university	Software Engineering
27	Female	2008	Local university	Information System

a. Acquired skills

The respondents talked about acquired skills in terms of five main sub-categories, as shown in Table 21. They are ranked in order of importance with technical skills being the most important, followed by soft skills, managerial skills, teamwork and adaptability.

Table 21: Categories of acquired skills

Acquired skills	Broad definition
Technical skills	Computer or IT knowledge and skills, specific programming languages and applications and mathematical knowledge
Soft skills	Interaction with others as well as delivering content and knowledge to others
Managerial skills	Planning and coordinating people and tasks
Teamwork	Working and collaborating with others
Adaptability	Ability to adjust to new working environment as well as to different job requirements

i. Technical skills

This category includes the skills related to the core components of computer science and information technology courses or academic content, computer and IT knowledge and skills, specific programming languages and applications (e.g., C, Java, C#-C Sharp, Visual Basic, and web-based programming languages such as PHP and ASP.NET), and mathematical knowledge. Below are some examples of the respondents' answers.

> *"I have degree in IT, and for me the important skills are on the programming side. During my study, I was taught a lot of programming, and what I have studied is mostly Java and PHP. After I completed my practical training, I was asked if I have any skills in programming, I said yes." (Respondent FG3-T, female)*

> *When we began studying, we didn't know anything about programming languages, so we started from zero. But after half a semester, ohh! I knew the language very well."* (*Respondent FG1-H, male*)

The respondents also mentioned learning computer programmes such as Microsoft Office during their university studies, which rather a hands-on type of activity. In some cases, however, the students complained that they had not learned basic computer programmes at the university, although the ability to use these basic programmes was more useful to them in their employment than skills such as programming.

> *"The things that I used most in my employment were programmes such as Microsoft Word and Excel. But these are the things that were not taught in university life. So I think in university, we should have one subject on using office applications." (Respondent Group Interview-F, female)*

In addition to learning how to use specific computer software programmes like Microsoft Office, another respondent felt that basic but practical skills for setting up a computer or network should be part of the technical skills taught at the university.

A few respondents also expressed the importance of mathematics in their workplace. They emphasized that a strong foundation in mathematics is crucial for the nature of positions such as software engineer or construction manager.

> *"So for me, the mathematical knowledge is important because I'm working as a Systems Engineer, which involves a lot of calculations."* (*Respondent FG3-K, male*)

> *"I work in a construction site. So let's say one day I meet a client and they say they want to build a house. I have to immediately calculate the requirements for them. If I'm late and they are rushing to do the project, they will take others. So mathematics skills are very important for me."* (*Respondent FG3-A, male*)

ii. Soft skills

Soft skills were the next most commonly cited set of skills that graduates acquired at university. In fact, some focus group members believed that these skills were more important than technical skills.

Communication and presentation skills

Communication and presentation skills were perceived to be the two top desirable skills. Communication skills involved any interaction with others, in both formal and informal settings. These skills also included proficiency in the English language when dealing with clients, subordinates or employers.

Some respondents commented that having good social skills were important in the workplace and that most of the time potential employers chose employees based on the soft skills demonstrated during job interviews.

> *"Social skills are very important. I work closely with my team, my seniors and my manager. They teach me how to use my technical skills and apply that to company solutions."(Respondent FG1-T, male)*

> *"During the first seven years when I worked in Sapura IT, I was involved in about 45 projects. We had to have skills in dealing with other people; we are dealing with our customers, the end-users, and with our bosses, so we need communication skills. That is one of the important things, other than technical background, that you need to have." (Respondent FG1-R, female)*

Presentation skills were also critical skills students learned during their university years. They found that these skills enabled them to have self confidence in performing their jobs. One respondent highlighted that her employer, a multinational company, looked for candidates with presentation skills during the job interviews after the students' CGPA had been reviewed.

> *"During the interview, it was clear that people who did not have the soft skills, did not have the presentation skills, were not chosen." (Respondent FG2-A, female)*

One respondent, a lecturer in a private college, mentioned how the soft skills are important in her workplace:

> *"The skills that I needed didn`t come from computer science; they came from presentation confidence, public speaking, motivating the students, counselling. When I was there [at university] learning presentation skills was very important. You have to be confident when you are teaching, to know your stuff, but presenting is totally a different thing." (Respondent G1-V, female)*

Managerial skills

Managerial skills, commonly mentioned by respondents during the focus group discussions, were related to planning and coordinating people and tasks. These included skills such as leadership and organization. Respondents noted that managing their assignments and projects at the university had helped them in organizing and managing projects, people, tasks and time at their workplace. Likewise, graduates who were leaders in extra-curricular activities or clubs found that the leadership skills they gained proved to be useful in their jobs.

> *"Management skills are also important because you have to manage yourself in order to submit your assignment by the deadline." (Respondent Group Interview-F, female)*

> *"I think besides programming skills, what I learned in university is communicating and management skills."(Respondent Group Interview-H, male)*

Teamwork

Teamwork also emerged as an important skill learned at university, which helped the graduates in their workplaces.

> *"I joined the student representative council and we met student representatives from different courses and departments. We all contributed ideas and skills for the activities we planned. I used my IT skills to design the poster. Others did different things. Teamwork is like getting all the ideas and the material and the brains that we have, and making a very good combination of them."* (*Respondent FG1-C, female*)

b. Methods to acquire skills

Two sub-categories were identified for methods to acquire skills (Table 22). Respondents noted that most of the time they obtained their technical and soft skills in the classroom through assignments, projects and case studies, but they also gained skills through co-curricular activities such as societies, clubs and sports.

Table 22: Methods to acquire skills

Methods	Definition
Classroom	Skills acquired within the computer science or IT faculty, most of the time through assignments, projects and case studies
Co-curricular	Skills acquired as part of university activities such as societies, clubs and sports

One participant pointed out that by taking courses outside his major field of study, he was able to share his technical skills with others, while at the same time helped him to learn how to communicate better with people outside the field.

> *"I shared knowledge with students from the social science department. They don`t know about IT, they don`t know about the use of programming, so I was able to tell them. So, it`s like an exposure, this is where I learned my social skills."* (*Respondent FG1-T, male*)

In addition, students listed other ways they could acquire technical skills in university, e.g., certification, short courses on programming languages, laboratory sessions for learning programming, and competitions, and concurred that the university should initiate more of these activities in the future.

> *"University A has a very good culture. They encourage students to enter competitions."* (*Respondent Group Interview-D, male*)

> *"Sometimes the hard disk is down. The blue screen comes up, and people ask you to solve it because you're a computer science student, but you don't have the knowledge. What we're doing in our university studies is about problem solving on software matters, not hardware. But maybe we should have an additional course about hardware."* (*Respondent Group Interview-D, male*)

c. CGPA and employability

The CGPA was considered to be important for employability.

> *"For the first job, yes, they are looking at the CGPA and they rely on your academic results. For the next job, the second job, it is based on your working experience. But for the first job, they will ask about the subjects you studied during your degree and how you understand the subjects." (Respondent FG2-A, female)*

> *"I think to get to the interview itself, you need a good CGPA. After that, during the interview, it depends on communication skills, how you present yourself, how you sell yourself." (Respondent Group interview-D, male)*

However, other participants had different opinions about the relationship between the CGPA and employability.

> *"CGPA help you to get a job, but I'm not so concerned about my CGPA, as long as I can sustain a good level, so I want to go out and mix around with other people." (Respondent FG1-T, male)*

> *"Some companies look at the CGPA. But others look at your communication skills. You should perform well and impress the interviewer during the interview with your communication skills."* (*Respondent FG3-F, female*)

Qualitative analysis of interviews with employers

The survey team interviewed 19 respondents from the business sector (Table 23). The key questions asked were:

- What are the important skills needed by the industry?
- What other skills are needed from the employees?
- What is your opinion on the relationship between CGPA and employability?

Table 23: Description of employers participating in the study

No.	Sex	Position	Organization
1	Female	Assistant Manager	Government
2	Male	IT officer	Government
3	Male	IT officer	Statutory Body
4	Female	IT officer	Government
5	Male	Mechanical Engineer	Multinational company
6	Female	IT Manager	Multinational company
7	Male	Mechanical Engineer	Multinational company
8	Male	RFID consultant	Local Private
9	Female	IT Manager	Local Private
10	Male	Web programmer	Local Private
11	Male	Specialise in virtual reality & open source	Local Private
12	Male	Software Engineer	Local Private
13	Male	Managing IMS (IP Multimedia Subsystem) lab in MIMOS	Local Private
14	Male	IT Manager	Local Private
15	Male	IT Manager	Local Private
16	Male	IT Manager	Local Private
17	Male	Computer Science Lecturer	Statutory Body
18	Male	IT Manager	Local Private
19	Male	IT Manager	Local Private

Based on their responses, the skills needed by the industry can be classified as shown in Table 24.

Table 24: Skills needed

Types of skills needed	Specific skills or knowledge needed
Knowledge	Hardware, electrical skills, latest technology, business model, design
Hands-on capacity	Practical training, projects, real-world problem-solving, case studies
Soft skills	Ethics, stress management, listening skills, presentation, languages

Most employers agreed that the CGPA was important in terms of employability, but felt that it was used mainly for filtering candidates at the interview stage. According to one respondent, a CGPA of 2.75 was the minimum requirement for the IT industry. This indicates that a good CGPA is necessary but is not the only criterion in getting a job.

Qualitative analysis of interviews with academics

Six heads of departments, deans or deputy deans from six leading universities in Malaysia and a visiting professor from the United Kingdom were interviewed to seek the perspectives from the supply side. From their responses, it was clear that their universities had provided opportunities for their students to enhance their knowledge and experience. They had collaborated with outside vendors such as the Multimedia Development Corporation (MDeC),[23] Microsoft, Oracle and CISCO to offer extra short courses and certification programmes. Infosys from India sponsored top students to enrol in their programmes in both Malaysia and India. The Malaysian government had arranged for 3P workshops to be held in the universities.[24] In addition, it was quite common for the IT or Computer Science faculty to organize local contests or send their students to participate in national and international competitions. The programmes offered at each university and the associated skills taught are listed in Table 25.

Table 25: Special programmes and skills to assist graduates find employment

University	Special programmes	Skills taught
University A	Within the curriculum • Final year project competition • Three compulsory English language courses including spoken English • National language course • Optional foreign language courses – 10 major languages with 4 courses each (free options) • Third language package (optional) – 10 major languages with 3 courses each (offered as a package) • Compulsory course on professionalism and technopreneurship that includes business plan exercises • 6-month full time industry training during the sixth semester • Industry seminars, career talks, on-campus recruitment exercise/interview • Optional business plan and business idea competitions at university and national level • Optional minor package in management • Optional course on critical thinking • Optional course on research methods in computer science Outside the curriculum • Year I workshop • Professional certification programme after the final semester (eighth) e.g. MCPD (Microsoft), MCTS (Microsoft), CISCO, ACP.NET (Adobe, Flash & Dreamweaver) External (optional) • 3P programme • Cisco, Intel, MDeC, Microsoft, Oracle, and other local IT companies, e.g. Train the Trainer workshops in Creative Thinking and Innovation with Intel • Thinking Skills course	*Teamwork* • Through special courses, i.e. group project, and in many instances final year project • Embedded in many courses through group assignments including practical and lab assignments, co-curricular courses *Communication skills and language skills* • English language embedded in class activities and project work through presentations, tutorials, seminars *Entrepreneurship skills* *Creativity and critical thinking, self confidence, resiliency, maturity* • These skills are embedded in many elements of assignments and project work in many courses • Problem-solving based approach is part of many courses *Technical skills*

23 MDeC is a government agency responsible for ICT development in Malaysia.
24 3P is a certification programme run by a local company appointed by the Ministry of Higher Education.

University	Special programmes	Skills taught
University B	Within the curriculum • Three two-credit courses to enhance English language skills: English for Academic Communications, Advanced English for Academic Communications, and Elective English Language • One three-credits IT Entrepreneurship course as one of the core subjects that all computer science students must take after three semesters. • Annual career fair. Companies visit the university and conduct job interviews among students • Compulsory three-day *How To Get Yourself Employed* programme. • Employment advertisements are published in the faculty's website • Company talk every semester by the IT companies	*Teamwork* *Communication and language skills, creativity and critical thinking, self confidence, resiliency, maturity, dependability, adaptability* • These skills are embedded in the subjects *Entrepreneur skills* *Programming skills, analytical skills, logical skills* • These skills are embedded in almost all core subjects, through computer lab work, presentations, tutorials and problem-based learning
University C	Within the curriculum • Career talks and discussions External (optional) • MDeC courses • 3P programme	*Industry knowledge* *Interview skills* *Technical skills*
University D	Within the curriculum • Students are required to register for two credit co-curricular courses in which soft skills are incorporated • Career fair and career talks with IT industry representatives • Alumni mentorship programmes • Finishing School programme External (optional) • MDeC courses • 3P programme • Infosys Campus Connect programme	*Cognitive skills* *Soft skills* *Technical skills*
University E	Within the curriculum • Project work • Competitions: First-year students entered a competition to design technologies for marginalized communities • Community service activities. • Real-life projects during holidays • Mentoring programmes • *Best Practices in Teaching and Learning* seminars • Distinguished speaker series • Incentive programmes, e.g. marks for initiating a best practice • Enhanced faculty environment conducive to creativity and collaborative work. • An area to showcase student works • Introduced student portfolios External (optional) • 3P programme	*Mathematics and computer science skills* *Presentation skills*

University	Special programmes	Skills taught
University F	Within the curriculum • Compulsory practicum training • It is a highly structured and planned practicum with guidelines that are to be followed by the companies • Self development group • Students are assigned to lecturers who become their mentors and advised on their academic progress and monitor their levels of self-confidence, English language skills, entrepreneur skills and adaptability • Final year project (undertaken in groups) • Innovation competition Internal short courses • Conducted through lecturers and a centre called CoPED that provides training for certification External (optional) • 3P programme • Courses provided by MDeC, Microsoft, Cisco, Oracle, and other local IT companies	*Teamwork* *Creativity and critical thinking* *Analytical, logical and programming skills* *Technical skills* • Microsoft Certified Technology Specialist: NET Framework 3.5 ASP.NET Application • Microsoft Certified Technology Specialist: SQL Server 2008 (Database Development) • Adobe Dreamweaver CS4 • Adobe Flash CS4 • CompTIA Security + Certification • EC Council Project Management • Sun Certified Java Programmer

The visiting IT professor from the United Kingdom highlighted the three types of important skills required for graduates in the UK: technical skills; problem solving and critical thinking skills; and communication and teamwork skills. Noting that soft skills are often lacking in UK students, she recommended problem-based learning (PBL) as a teaching tool to assist the students in gaining hands-on and critical thinking skills in order for them to perform well in the workplace.

Discussions

An overview of the results from the quantitative and qualitative data is shown in Table 26. There was strong correlation between some of quantitative and qualitative responses, but also significant divergence among others, underlining the differences in the expectations among employers, academics and graduates regarding the level of skills that graduates should have when they enter the workforce.

Table 26: Summary of data analysis

Variables	Quantitative	Qualitative
Innate skills		
(a) Adequate		
enhance self-maturity	Rank 1	NA
develop self-resilience	Rank 2	NA
develop self-confidence	Rank 3	important
problem solving and decision making	Rank 4	important
become knowledgeable	Rank 5	important
ability to be independent/self reliance	Rank 6	NA
(b) Lacking		
team work/group working	Rank 7	important
creative and critical thinking	Rank 8	NA
ready to face the working world and challenges	Rank 9	NA
enhanced interest in learning	Rank 10	NA
more sensitive towards current affairs	Rank 11	NA
effective communication	Rank 12	important

Variables	Quantitative	Qualitative
Acquired skill		
(a) Adequate		
problem solving skills	Rank 1	important
creative and critical thinking	Rank 2	NA
analytical skill	Rank 3	important
(b) Lacking		
team work/group work	Rank 4	important
proficiency in English	Rank 5	important
proficiency in Bahasa Malaysia	Rank 6	NA
general IT skills	Rank 7	important
Capacity to do the job		
(a) Adequate		
confidence to perform the task required	Rank 1	important
problem solving and decision making skills	Rank 2	important
workplace adaptability	Rank 3	important
(b) Lacking		
working in a team	Rank 4	important
communication skills	Rank 5	important

*NA = data not available

From the focus group discussions, the graduates had identified two important sets of skills they had acquired at their university: teamwork and communication skills (which include both Bahasa Malaysia and English language proficiency). This is not surprising since the graduates had emphasized the importance of communicating with their professors and peers, and in giving presentations. In their opinions, these skills had helped them performed well in the workplace. Unfortunately, this conclusion did not coincide with the feedback from the employers.

Furthermore, the graduates in the focus groups had not mentioned creativity and critical thinking. It could be because they thought that these attributes were unimportant or that they did not acquire these attributes while in university. Regretfully, there is not enough information to verify the reason for this omission.

In contrast, the employers found the graduates' creative and critical thinking skills to be wanting, and recommended the universities to do more to instil these skills in their graduates. The employers also did not think that the universities were equipping their undergraduates with sufficient technical knowledge and skills.

The academics believed they were providing graduates with adequate skills, with many of the academics reporting that they had tried to encourage such skills through their curricula. This indicates either that industry is expecting too much, students are not trying hard enough to gain these skills, or universities are not delivering the right thing.

Speaking on behalf of their universities, the academics maintained that they had prepared their students adequately, both in terms of general and specific technical skills and knowledge, to enter the workforce. This was disputed to some extent by the graduates who felt that they lacked some crucial skills, a sentiment supported by the employers.

Reiterating that the students were given opportunities to attend special programmes and courses, and receive certification from other vendors, the academics contended that the expectations from the IT industry were too high. Universities cannot provide all the skills demanded by the labour market within a three to four year undergraduate programme. It is also very challenging for universities to keep pace with the rapid changes in technology without sufficient funding for research and time to modify their curriculum and course content. It is no wonder that most universities are a few steps behind the industry, and cannot teach the latest IT programmes or applications. It would be more effective for the industry to play an active role in building the skills they require by providing internship programmes for students and on-the-job training for their newly recruited employees.

Recommendations and conclusions

There is a distinct gap between the expectations of the employers and academics. While both would like the graduates to be creative, think critically and have solid technical know-how, they disagreed about the university's contribution in producing such graduates. The academics considered their graduates to be sufficiently trained; the employers did not. To address this gap, it is expedient for the universities and employers to re-examine and re-adjust their expectations accordingly.

Another recommendation is for universities to review their IT curriculum annually to keep up with the fast changing nature of the field. At the same time, they need to balance the demand to turn out productive workers against the fundamental goal of educating students to be moral, ethical and responsible citizens. Universities should re-examine their activities designed to improve creativity and critical thinking to ensure that the students are in fact gaining these skills, and to incorporate problem-based learning as much as possible to encourage greater creativity and critical thinking.

It cannot be assumed that all employers have the same demands and expectations. Employers themselves are often under great pressure to innovate and adapt within a short period of time. Therefore it would be unrealistic to expect the universities to churn out graduates who can meet each and every need in the workplace considering the time consuming process for the academics to update their own knowledge and then to revise the curriculum and courses. Rather, the universities can focus on inculcating more general skills and aptitudes in their students, while the industry hones the specific knowledge and skills required through on-the-job training.

Meanwhile, the students should not depend entirely on the university and the formal education system for their personal development. They have to be more proactive and take the initiative to acquire essential skills. Involvement in extracurricular activities is an excellent outlet for building self confidence and soft skills. Starting a business, instead of waiting for job offers to materialized, is increasing seen to be an attractive option, supported by many examples of successful and enterprising young entrepreneurs in the IT industry.

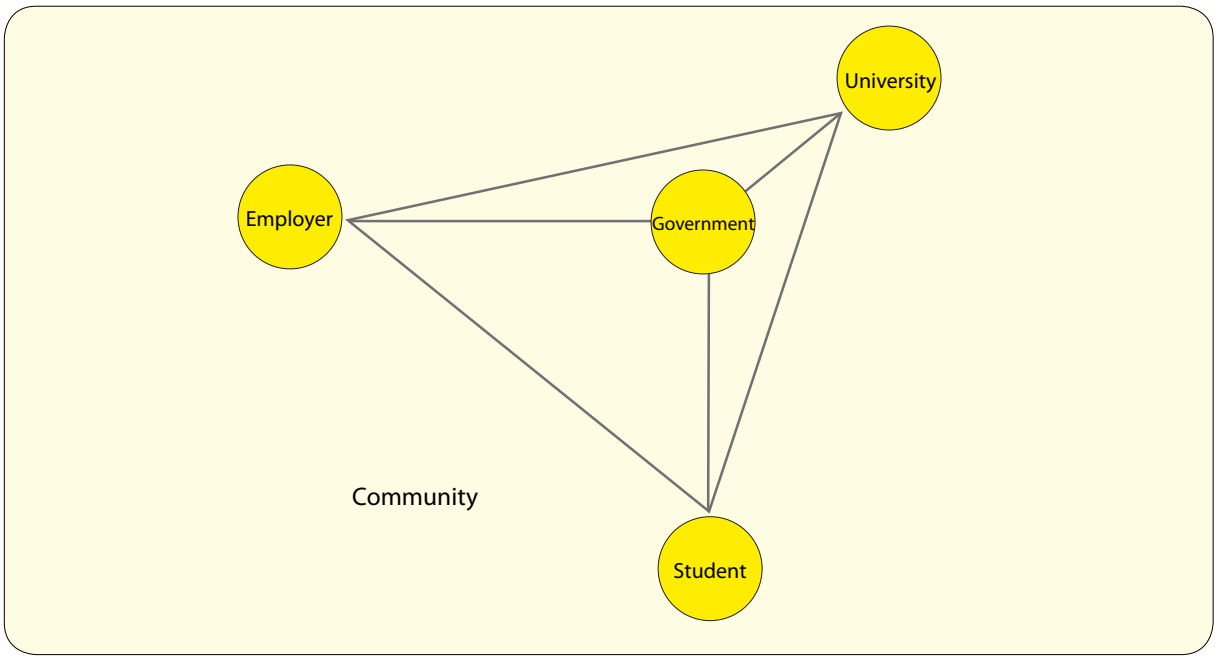
Playing its role, the Ministry of Higher Education has formulated a National Higher Education Strategic Plan to address issues of employability. To implement the action plan, it would appropriate for the government to establish a regulatory body for Computer Science and Information Technology Education to support professionals in this field. The regulatory body would be similar to existing professional bodies such as the Malaysian Medical Association, Malaysia Institute of Accountancy and Institute of Engineers Malaysia, which ensure high professional standards in among their members.

Last but not least, major IT players in Malaysia have initiated efforts to create a platform to look into issues of the quality of IT graduates and professional recognition of IT graduates. This initiative is still in its infancy, but efforts have been made to incorporate this into the 10th Malaysian Plan commencing in 2011.[25]

It is clear from the above discussion that the major stakeholders (graduates, academics/university, employers and the government) must work together to improve graduate employability. Universities cannot guarantee employment for their graduates without collaboration with the employers in the IT sector. Certainly, the students themselves have to make the effort to learn and acquire the knowledge and skills within an enabling environment. Government input is required to ensure the policy structure and economic conditions are favourable for employment opportunities in the IT industry. The linkages among the stakeholders are illustrated in Figure 1.

25 Minutes of the first meeting on Directions of IT with Malaysian National Computer Confederation, 20 August 2009, Kuala Lumpur.

Figure 1: Stakeholders in improving graduate employability



There have been positive developments since the launch of this study in 2009. Several parties – MDeC,[26] ICT Deans Council and the Human Resource ICT Task Force[27] – have initiated activities to enhance graduate employability, particularly in terms of employment for IT graduates and the need for a regulatory body for IT professionals. The ICT Deans Council has recommended changing the 3-year computer science or IT university degree to a 3½- or 4-year programme. The revised curriculum will be aligned to the Association for Computer Machinery guidelines, with a compulsory 6-month on-the-job training. Public universities have begun implementing this in stages.

IT companies have also taken action to improve the situation. For example, Intel will roll out TRIZ, a methodology that relies on the study of patterns of problems and solutions, to all universities and, in the long run, to all primary and secondary schools.

In 2010, the MoHE announced the formation of 19 Industry Clusters for various domains including IT. The clusters will foster a more structured collaboration between universities and industries, and thereby help to raise the level of university education in Malaysia. One of the goals of the clusters is to improve graduate employability. The IT Cluster is co-chaired by the Chairperson of the ICT Deans Council and MDeC, with MOHE playing a steering role. Members of the IT Cluster are representatives of the ICT Deans Council and industry.

The MoHE also introduced the National Professors Council as a forum to congregate Malaysian academics. The Council has several sub-categories, each to be headed by a professor. One of the areas is IT, also named as the IT Cluster. It is likely that this group will also examine the issue of IT graduate employability.

In conclusion, these initiatives serve to underscore the importance the various stakeholders have given to graduate employability in Malaysia.

26 MDeC, an entity under the Ministry of Science, Technology and Innovation, has been continuously concerned about IT graduate employability issues and has been actively providing quick solutions to address the concern.

27 Human Resource ICT Task Force, initiated by Malaysian pioneers in computer science, comprises representatives from industry and academia.

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Appendix 1: Enhancing graduate employability at the International Islamic University Malaysia

Shukran Abdul Rahman, International Islamic University Malaysia

The International Islamic University Malaysia (IIUM) was established with the aim of producing fully functioning persons who will serve as agents of change in their respective communities. The academic programmes and student activities offered at IIUM are designed to support the university's educational philosophy which aims to equip students with the knowledge, skills, abilities and attributes that are relevant to both the needs of the society and world of work.

The university's Strategic Planning Report 2001-2010 outlines IIUM's aim to be the leading model of an International Islamic University, based on the principles of integration of knowledge and comprehensive excellence for the progress of Malaysia and humanity, while ensuring that its graduates can compete in today's job market.

This paper reports the initiatives taken by the university in developing students' employability. Such initiatives include co-curricular and career development programmes. This paper also reports on the research conducted by the university in studying students' employability.

Employability programmes at IIUM

Various efforts have been implemented though co-curricular activities managed by the Student Development Division and the Alumni and Career Services Division. The details of the two establishments and their activities are described below.

Student Development Division

The mission of the Student Development Division is to offer programmes that equip students with the necessary knowledge, skills, abilities, and other desirable characteristics to enable them to face the challenges in the workplace. The capacities and aptitudes of the students are enhanced through the co-curricular programmes which complement the competencies taught in classrooms. There are two types of programmes: credited and non-credited activities, managed by the Co-Curricular Activity Centre (CCAC) and the Non-Credit Co-Curricular Activity Centre (NCCAC) respectively.

The main roles of the CCAC are to cultivate specific identifiable skills that suit the needs of the students, offer courses that are beneficial for the development of students' personality, grant credit hours for the students' co-curricular activities, provide a platform (training ground) for the students to continuously develop their leadership skills and talents, and equip students with the basic skills that are required for every individual. Attainment of learning outcomes is assessed and students are granted academic points. The university has made it compulsory for all students to enrol in co-curricular activities. Unlike the three credit-hour points for one academic course, each co-curricular programme carries 0.5 points.

The NCCAC was established to provide platforms for students of diverse interests to channel their talents, creativity and skills in various extra-curricular activities through clubs and societies. The functions of the centre are to supervise, monitor and facilitate student clubs and societies, provide guidelines for students in organizing programmes, monitor budget allocations for student activities, coordinate students' extra-curricular activities, and organize training for students. Students' participation in NCCAC activities is voluntary and they do not gain any academic credits. However, depending on their level of participation, the activities of students are recorded in the Co-curricular Transcript. The NCCAC has four main units: the cultural and arts unit, uniform and interest-based unit, community and services unit, and training and records unit. Two types of programmes are offered, namely student-driven and department-driven

activities. The former entails the implementation of activities planned, proposed and run by students. The students may organize programmes with or without funding from the university. The programmes are monitored and supervised by the related Unit, however. The department-driven programmes include those which are proposed and organized by the unit. They are fully sponsored by the university or are sponsored by an external organization. They are fully supervised by the unit but assisted by students.

Alumni and career services division

The Alumni and Career Services (ACS) Division was established with the aim of coordinating and organizing programmes related to promoting graduates' employability, and increasing the graduate employment rate. The ACS aims to help IIUM students in exploring career options, equip them with job-seeking skills, and subsequently assist them to find suitable employment. The ACS organizes career development programmes, also known as the Finishing School Programme (FSP). The activities help students to identify their area of career interest, plan their career path, and develop skills to make them more employable and prepared to enter the world of work.

In particular, the FSP aims to (a) create career awareness among the IIUM students, (b) equip students with job-seeking skills, such as the preparation of resumes and application letters, (c) equip students with skills to perform effectively in interviews, (d) expose students to work-related experience by facilitating and organizing structured career development activities, (e) assist students in matching their interests, abilities and values with a career, (f) provide guidance to students in managing their career-seeking activities, (g) expose students to activities which develop relevant work-related experience and offer opportunities to enhance students' employability skills.

The services offered by the ACS Division include:

a. Psychometric test: This test is used to help students develop their self-knowledge, including their interests, abilities, and personal and academic strengths.
b. Career clinic: A one-day session aimed to equip the students with skills such as how to prepare a resume, respond to interview questions, and make a good impression, so that they meet the needs of the current job market.
c. Career seminar or career talk: This seminar gives students an opportunity to obtain information about the required work-related personality attributes, which include ability, potential, self-evaluation and determination. The seminar presents the viewpoints of speakers who talk about their job experience.
d. Career recruiter programme: The programme provides an avenue for IIUM students to hear from representatives of various companies who speak about their organizations. Students can learn about their activities, the career opportunities offered by them, and their expectations of workers.
e. Career exposé camp: A three-day, two-night work simulation programme where students are exposed to a simulated work environment in which they must complete a task assigned to them individually as well as in a group. A panel made up of industry experts from the IIUM alumni evaluates their work.
f. Career consultation: A weekly programme offered to students, it consists of consultation on resume writing, grooming tips and interview skills, career related video sessions and test sessions.
g. Career exposé excursion: In collaboration with other university agencies, the division arranges excursions to employing organizations to increase students' awareness about employers' expectations, and familiarize students with workplace surroundings.
h. Work experience programme: This enables students to participate in a practical training/internship programme to explore their interests, motivations and abilities. The ACS Division and the relevant Kulliyyah (or faculties) also assist students in securing a placement in the company or organization. This is also facilitated by the Industrial Networking and Practical Training Section of the ACS Division.

Research on IIUM graduate employability

Since 2000, studies have been conducted to assess the employability of IIUM graduates and their pattern of employment after graduation. The tracer study is conducted every year and enables the university to find out whether graduates are employed, and whether the university has equipped its students with the necessary skills, knowledge and abilities to meet the requirements of the job market. The study particularly examines the impact of the university's effort in improving the employability of students through co-curricular activities and career development programmes.

Perceived importance of co-curricular activities

The findings of the tracer studies indicate that students who participate in co-curricular activities perceive that they have a higher chance of being employed after graduation (Shukran et al., 2006). In 2005, for example, out of 2,020 students surveyed, 78 percent participated in co-curricular activities while 22 percent did not. The respondents who participated in co-curricular activities perceived that their involvement in these activities had produced beneficial outcomes as follows: (a) the opportunity to work in various work sectors; (b) the opportunity to play an effective role in community development; (c) enhanced leadership skills; (d) improved time management skills; (e) knowledge and skills relevant to their present job; (f) improved communication skills; (h) increased teamwork spirit; and (i) better human relations skills.

Employment rate

IIUM aims to achieve an 80 percent employment rate among new graduates (IIUM, 2007). According to the findings from the trace studies, six months after graduation only 6 percent of surveyed graduates were unemployed, while 8.6 percent were pursuing further studies, 9.8 percent occupied in other engagements and the remainder had found employment, The findings also indicated that about 58 percent of the employed graduates work on a temporary or contract basis, while 41 percent work had permanent posts.

Predictors of graduates' employment

The strongest predictor of graduate employability was graduates' English language proficiency ($\beta = 0.42$, $t = 5.52$, $p < .001$). Graduates' involvement in training programmes was also predictive of employment ($\beta = 0.19$, $t = 2.88$, $p < .001$). Furthermore, the more involved graduates had been in training programmes offered by the university, the more likely they were to be employed permanently after graduation. As expected, the grade point average was also a significant predictor of graduate employability ($\beta = 0.09$, $t = 4.80$, $p < .001$). The higher the cumulative grade point average at the point of graduation, the more likely graduates were to be employed permanently after graduation. As for the co-curricular activities, graduates indicated that their involvement in co-curricular activities produced beneficial outcomes in terms of employability.

Improved strategies to encourage students' involvement in co-curricular activities

In the 2003 tracer study, when asked for suggestions on how to meet employers' requirements, the graduates highlighted training programmes such as internships and talks by professionals from various employing organizations about job requirements and corporate expectations. Shukran and Wok (2003) found that many graduates lacked information about their own abilities and interests. Respondents suggested that establishing a credential file system would help students to identify a career that suits their abilities and interests. The credential file system can be used to generate individual student reports on their participation in the career development programmes.

Satisfaction with institutional programmes

In terms of academic programmes, the graduates surveyed were not satisfied with the practical training (mean of 2.8 in 2005 and 3.0 for 2003 and 2004) and the work experience (mean of 2.6 in 2005 and 2.9 in 2003 and 2004) provided by the institution. In 2003 and 2004, graduates were also dissatisfied with the counselling and career services to assist them in obtaining a job. However, in 2005 the satisfaction rate improved.

Surveyed graduates were "satisfied" to "very satisfied" with the attributes of the teaching staff, and were most satisfied with the qualifications of the teaching staff.

With regard to the university services, the library received the highest rating (very satisfactory) for the three years between 2003 and 2005. In 2003, students were satisfied with the services provided by the Alumni Relations Unit, Counselling and Career Services, Student Affairs and Development Unit, and Admission and Records Division. However, these services were not rated highly in 2004. In 2005, only the Student Affairs and Development Unit and the Admission and Records Division remained unsatisfactory. Therefore, most of the divisions were considered satisfactory in providing relevant facilities and services.

Graduate employability profile

IIUM also conducted a cohort longitudinal study to profile the pattern of employability among the first degree graduates who graduated between 2003 and 2005 (Saodah et al., 2007). Through this study the characteristics of those who were easily employed upon graduation were identified. The study found that these graduates exhibited very good workplace adaptability, possessed good problem solving skills, were confident, worked well as a team, spoke and wrote proficiently in English and Bahasa Melayu, were versatile in ICT applications, and were able to acquire knowledge relevant to their jobs.

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