Full Length Research Paper

Efficient human resource deployment technique in higher education: A standpoint from Malaysia

Salina Daud[1]*, Nurazariah Abidin[1], Noraina Mazuin Sapuan[1] and Jegatheesan Rajadurai[2]

[1]College of Business Management and Accounting, Universiti Tenaga Nasional, Sultan Haji Ahmad Shah Campus, Bandar Muadzam Shah, Pahang, Malaysia.
[2]IKIP International College, Kuantan, Pahang, Malaysia.

Employability of graduates is dependent on the graduates' possession of relevant academic qualifications, skills and other attributes needed by the industry. The purpose of this research is to identify the gap between important attributes that graduates of Higher Education Institutions should exhibit and their actual performance when they are employed in industry. The dimensions of the attributes and the performance of these graduates are considered in four broad areas, namely knowledge, skills, abilities and personality. The results show that graduate performance has failed to meet managers' perceptions of the attributes that should be possessed by these graduates.

Key words: Higher education institutions, curriculum design, important-performance analysis.

INTRODUCTION

The need to improve the employability skills and attributes of the workforce has been an issue across the nation. It is of major concern that many graduates do not have the right combination of skills and personal attributes required by the employers, even though some may possess excellent academic qualifications (Alam, 2009a). Hence, they are unable to secure employment which subsequently contributes to an alarming number of unemployed graduates. According to Minister of Higher Education Malaysia, Y.B. Dato' Seri Mohamad Khaled Nordin (2009), 24% of Malaysian graduates remained unemployed six months after their convocation.

Higher Education Institutions (HEIs) are the recruiting grounds for numerous industries in search of future employees. Employers often develop long term relationships with those HEIs when they have consistent success at recruiting young executives who have the right combination of skills and personal attributes to contribute to their organizations (Alam, 2009b). However, over recent years, employers have complained that graduates from these HEIs are not able to meet their expectations in the current volatile and dynamic economic climate. Universities are urged to ensure that they produce employable graduates who are able to compete in the employment market (Moreau and Leathwood, 2006; Harvey, 2000).

As HEIs are the final setting before the graduates enter the workforce, HEIs are often blamed for not providing graduates with the relevant skills and capabilities. Recognizing their critical roles, HEIs have been actively involved in research and academic discussions to address the issue of unemployed graduates and to provide recommendations and action plans to improve the quality of graduates. Industries also demand HEIs make their curriculum more relevant to the current situation in order to avoid a mismatch in regard to graduate quality and skills. Thus, collaboration between education providers and industries is strongly encouraged to reduce the gap between the graduates' abilities and the requirements of the industries (Tenth Malaysian Plan, 2011-2015).

*Corresponding author. E-mail: Salina@uniten.edu.my.

Since there is a growing concern about the employability skills of graduates, this study takes on the challenge to investigate the employability skills possessed by graduating students in HEIs and to determine to what extent graduating students would be hired by employers. It is also in the interests of this research to study the extent to which graduates now possess the 'soft skills' with which universities have been told to equip their graduates (Singh and Singh, 2008). Thus, the objective of this study is to gauge the gap between important elements of HEIs graduate attributes and their performance when they are employed in industry. The dimensions of attributes and the performance of these graduates are considered in four broad areas namely knowledge, skills, abilities and personality (KSAP) (Salina et al., 2010c).

THEORETICAL BACKGROUND

The study discussed graduates' attributes from the perspective of HEIs resource deployment and HEIs' collaboration with industries. The related theories used in this study are a resource-based view, alliance theory and demand and supply theory.

Resource-based view

The continuity of company success is mainly a function of its internal and unique competitive resources (Penrose, 1959). This argument was supported by Wernerfelt (1984), Barney (1991) and Teece et al. (1997) who believe that a company needs to emphasize internal aspects of the organizations. Companies perform well and create value when they implement strategies that respond to market opportunities by exploiting their internal resources and capabilities. The resource-based view suggests that companies can earn sustainable supra-normal returns if, and only if, they have superior resources. Companies' resources include all tangible and intangible assets such as capabilities, company processes, company attributes, information, knowledge, physical structures, etc. that are controlled and owned by a company and that enable it to implement strategies for improved efficiency and effectiveness which lead to improved company performance (Daft, 1986; Jones, 2007; Wernerfelt, 1984).

Capability is the capacity to perform a task or activity that involves complex patterns of co-ordination and co-operation between human capital and resources (Amit and Schoemaker, 1993; Grant, 1991). The capabilities might include superior customer service or high quality manufacturing, know-how that can be traded (e.g. patents and licenses), etc. These resources and capabilities are known as strategic assets (Amit and Schoemaker, 1993; Marr and Roos, 2005) and must be

embedded in the end-products or services that create value to the customers. Resources themselves never create value; value is created from the services these resources can render (Penrose, 1959). HEIs' capability in creating and designing unique curriculum development will produce a competitive workforce that can meet industry needs. They need to deploy their resources according to industry needs and requirements.

Alliance theory

In order to produce a competitive workforce, HEIs need to have a close and strong alliance with industries. They need to create alliances with industry practitioners in order to get information on current industry requirements and needs. Forming alliances is viewed as a means of acquiring more resources and capabilities that are expensive to develop internally, or that are not readily available in the local market place. The examination of alliance theory indicates that it has, over the years, evolved from a descriptive notion into a theoretically anchored concept (Contractor and Lorange, 1988; Kogut, 1988).

With the decision to collaborate comes the issue of partner selection (Trim, 2003). Selecting an appropriate partner, whose objectives are similar to the selector, is a very intensive task but, if it is carried out correctly, will ensure a higher quality and longer lasting relationship. Decision makers must have information and knowledge about partners' objectives, finances, resources, skills, processes and culture. Legal knowledge is needed to understand the ramifications of aligning with a particular organization and industry knowledge is also important when selecting partners (Rich, 2003).

According to Elmuti and Kathawala (2001), partner selection in an alliance is the main contributing factor to the success of the alliance. This can be attained through collaborative links between competent partners seeking mutually beneficial business results. The term "competent partners" relates to the partners' strategies, objectives and goals (Elmuti and Kathawala, 2001). Partners selected should leverage the strengths of the other partner. Partnerships tend to be more effective if the partners share similar goals, have comparable products or service lines, share similar cultures and can help fill strategic gaps in either capabilities or market offerings (Rich, 2003). An alliance must be organized in a way to facilitate success for the parties involved. It must be the partners' intention that the alliance will succeed through speed, adaptation and facilitated evolution (Elmuti and Kathawala, 2001). Ideal partners have compatible objectives, complementary resources and skills, organizational "fit" in terms of cultures and processes, and a willingness to ally with each other (Rich, 2003). Thus, HEIs need to collaborate closely with industry practitioners in order to enhance graduates'

performance in the job market.

Demand and supply theory

The demand and supply of graduates for a labour market can be considered within the simple demand and supply framework originally proposed by Alfred Marshall (1842-1924) in his book "Principles of Economics" (1890). Marshall showed that demand and supply curves operate simultaneously to determine the market price based on a partial equilibrium model and goes some way to explain movements in various markets including the labour market. However, there are issues that complicate the application of this theory to the labour market and employment and frustrate the quest for equilibrium. These issues include curriculum content, the challenges inherent in economic growth and the discrepancy between industry expectations of its workforce and the universities' capacity to produce employable graduates.

Universities, in trying to meet the demand for qualified graduates, are attempting to produce them in greater numbers. When numbers of graduates seeking jobs increase, employers become more selective, look beyond formal qualifications and take into account applicants' soft skills such as social skills, interpersonal relationships, motivation, critical thinking, creativity, etc. These skills are usually not taught within the formal setting (UNESCO, 2006) therefore, universities in the best interests of their students, are now pressured to include soft skills as part of their curriculum in order to remain relevant to industry (Salina et al., 2010a, b; Rajadurai et al., 2008). Therefore, it is evident from this situation, although universities attempt to churn out graduates to fill positions in industries to meet their demand, industry expectations challenge universities' efforts to reach equilibrium.

When there is economic development, challenges arise in relation to the location of industries and the supply of appropriately qualified manpower. A country trains up its work force to meet the demands of specific industries but in the Asia- Pacific region industries are seldom permanently located in one country. They tend to move to locations that provide cheaper resources including finance, land and manpower. This migration creates a surplus of manpower in the country that produced the qualified work force originally but a demand for workers in the country where these industries have moved into (UNESCO, 2006). This imbalance will always exist and challenges the quest for equilibrium.

Associated with the issue of economic growth is the demand for pure science graduates as opposed to social science graduates. The reality is that students are selecting social science courses resulting in a shortage of suitably qualified applicants for science based research positions; positions in greatest demand for economic growth. This is especially the case in Malaysia (New Economic Model of Malaysia, 2010).

A discrepancy between industry expectations of its workforce and the universities' capacity to produce employable graduates will always exist. Industry is the first to be exposed to new technology and innovations and, therefore, sets new and higher standards for its employees. Universities are not at the forefront of these advances and therefore struggle to keep abreast of these new developments. Consequently, their curriculum is not up to date with industry expectations. Fleming and Soborg (2010) highlighted this mismatch among the main stakeholders in the Malaysian higher education sector. These employment environment dynamics will always continue to persist and, therefore, continue to hinder the quest for equilibrium in the demand and supply of manpower.

INDUSTRY PERSPECTIVE ON GRADUATES' CAPABILITY

Nicholson and Cushman (2000) found a difference in perception between industry participants and educators when ranking attributes for success in the retailing field. They concluded that HEIs need to be careful not to dwell on cognitive skills at the expense of affective skills such as 'leadership' and 'decision making' which may be more important for long term success in retail. Nowadays, employers are concerned with graduates' skills, where 'graduate skills' are more important in the recruitment process than the graduates' academic performance (Harvey, 2000). Basically, employers want graduates who are equipped with interactive skills, personal skills (Harvey, 2000) and generic skills (Hager et al., 2002). This finding has also been supported by Purcell et al. (2002) who discovered that, for some employers, a degree may represent nothing more than a minimum requirement. Hence, according to Candy et al. (1994), HEIs have a leadership role in producing graduates with skills for continuing lifelong personal and professional development.

The Malaysian employers' consensus is that Malaysian graduates are well trained in their areas of specialization but unfortunately lack the 'soft skills' (Nurita et al., 2004). This 'deficit' in graduate skills has also been acknowledged by the United Kingdom's government with respect to its graduates (Dickinson, 2000). Lawrence (2002) added that America is also experiencing the same problem. Birrell (2006) reported in his study that of 12,000 students at Monash University in Australia, it showed that more than one-third of foreign students in Australian universities, where 24% of whom are Malaysian students, are not proficient in English. The study also noted that although graduates had sufficient command of language in managing their day-to-day activities, they were still not competent enough to engage in an intellectual discussion.

According to Nurita et al. (2006), Malaysian employers

are searching for graduates who are balanced, with good academic achievements and possessing 'soft skills' such as communication, problem solving and interpersonal skills and the ability to be flexible. There are few views who believe that people with good "soft" skills are born with them; as such these skills are part of their personality traits. However, Hager et al. (2000) found in their research that employees are able to improve their soft skills through their experiences and practices. This is due to the fact that these "soft skills" are the foundation skills that apply across the board; no matter what job the employee is performing (Lawrence, 2002). They need to equip themselves with hard skills as well as soft skills in this emerging global economy.

GRADUATE EMPLOYABILITY IN MALAYSIA

Employers are looking for a more flexible, adaptable workforce as they themselves seek to transform their companies into more flexible and adaptable entities in response to changing market needs. In the year 2005, the Human Resources Minister of Malaysia highlighted that 30,000 Malaysian graduates had only managed to get casual and temporary work, such as, cashiers and restaurant workers because of their poor English proficiency. This factor hinders graduates in becoming better in their jobs, thus reducing their chances of better career prospects, especially in getting jobs that are relevant to their career training.

Chang (2004) reported in his paper the reason graduates are unemployed is that they do not have the right degree. Some graduates with specific qualifications are already abundant in the market, whereas Engineering and other Science degree graduates are still in high demand. Another reason is that graduates with a degree no longer automatically qualify for their first job. Instead, graduates who possess the greatest knowledge and skills in their study domain get hired first.

With a competitive business world, computerization makes job performance measurement very transparent. Managers will only want to hire people who can contribute to team success. Proficiency in English, an ability to present ideas, explain issues and problems, to speak up in a constructive manner, to resolve problems, to understand issues and problems faced by company and to come up with workable solutions to problems, are all good communication and interpersonal skills sought by employers (Chang, 2004). Thus, an employee is expected to contribute on many fronts from day one of being employed.

A Malaysian employment agency namely JobStreet.com conducted a survey on graduate unemployment rate in year 2005. The survey was conducted on 3,300 Human Resource personnel and bosses. Among the factors contributed to graduate unemployability are; weakness in English (56%), poor social etiquette (36%), demanding too much pay (32%), degrees not relevant (30%), fresh graduates too choosy (23%), and no vacancies (14%). The weakness in English and poor social etiquette are the top reasons for graduates being unemployed. These findings show that Malaysian graduates are unemployed, not because they are unintelligent, but rather because most of them lack of skills required by the employers.

The Malaysian Ministry of Higher Education has implemented various initiatives to alleviate the problems of unemployed graduate over the last few years. Among the initiatives are the introductions of soft skills modules to embed communication skills, leadership and team building as well as reporting skills into the graduate's curriculum of studies. In addition, basic entrepreneurship modules, internship or industrial training program, and collaborative programs with the relevant industries have been introduced (Khaled, 2009).

The studies carried out by the Ministry of Higher Education on graduate employability from 2006 until 2009 has shown a significant improvement on their employability. In 2006, the unemployment rate among graduates was at a high 31%; in 2007, the unemployed graduate rate had dropped to 27%. The unemployment rate among graduates was further improved with a percentage point of 24% in 2008 (Khaled, 2009). In 2009, the percentage remains the same as in 2008, where 24% of graduates remained unemployed (Khaled, 2009). The percentage of unemployed showed an improvement and progress in getting more graduates employed in the job market. This is a result of a policy created by the Malaysian Ministry of Higher Education to produce graduates who are highly relevant to the job market and possess the required skills, competencies and attitude needed to succeed in their world of work.

GRADUATES ATTRIBUTES

The key performance indicator (KPI) for HEIs is employability of the graduates (Morley, 2001). In order to achieve the KPI, HEIs are urged to ensure that they are able to produce employable graduates that meet the needs of the industry (Moreau and Leathwood, 2006; Harvey, 2000). In this study, individual employability is defined as graduates being able to demonstrate the attributes to obtain jobs. Hillage and Pollard (1998) stated that employability of the graduates depended on the graduates' knowledge, skills and aptitudes. Harvey and Howard (1999) suggested in Treleavan and Voola (2008) that graduates' success in their jobs depends more on graduate attributes than on narrow discipline specific degrees.

Trauth et al. (1993) added that there is an "expectation gap" between industry needs and academic preparation. HEIs must work together to close this gap where HEIs need to place more emphasis on the integration of

technologies, applications, data and business functions and less on traditional and formal system development. Candy et al. (1994) noted that HEIs have an important role in producing graduates who are not only attuned to the needs of the industry but also equipped with the skills to afford them continuing lifelong personal and professional development.

Raybould and Sheedy (2005) noted that for graduates to be attractive to employers, it is important that they are able to show evidence of having the ability to cope with uncertainty, the ability to work under pressure, demonstrate action-planning skills, communication skills, information technology skills, team work, readiness to explore and create opportunities, self confidence, self management skills, and a willingness to learn. In addition, Baxter and Young (1982) have indicated that employers need entry level workers who are dependable and trustworthy, have basic communication, thinking and problem solving skills, have the desire to learn and advance, the ability to work as part of a team and possess a proper attitude.

According to Noe et al. (2007), the four main dimensions such as knowledge, skills, abilities and "others" (KSAO) are used to look at the qualities of employees when performing their tasks. Knowledge refers to factual or procedural information that is necessary for successfully performing a task. Knowledge can be classified into tacit and explicit knowledge (Nonaka and Takeuchi, 1995; Polanyi, 1966). Polanyi (1966) described tacit knowledge as knowledge that is difficult to express and is usually transferred by demonstration rather than description, while explicit knowledge is easily written down and easier to communicate and transfer between individuals.

Skills refer to an individual's level of proficiency at performing a particular task or the capability to perform a job well. Skills can be divided into technical elements and behavioural elements (Noe et al., 2007). Technical elements measure "hard" technical skills while behavioural elements measure "soft" skills which include the attitudes and approaches applicants take to their work, such as the ability to collaborate on team projects.

Ability refers to an individual's capacity to perform the various tasks in a job. It is a current assessment of what one can do. An individual's overall abilities are essentially made up of two sets of factors; intellectual and physical abilities (Robbins and Judge, 2009). Intellectual abilities are those needed to perform mental activities like number aptitude, verbal comprehension, perceptual speed, inductive reasoning, deductive reasoning, spatial visualization and memory, while physical abilities relate to tasks demanding stamina, dexterity, strength and similar characteristics.

For "others", the discussion is focused on Big Five Personality traits (Gibson et al., 2006; Kreitner and Kinicki, 2008; Robbins and Coulter, 2009; Robbins and Judge, 2009) or Global Factors Personality (Russell and Karol, 1994). They comprise openness, conscientious-ness, extroversion, agreeableness and emotional stability. Openness is an appreciation of art, emotion, adventure, unusual ideas, curiosity, and a variety of experiences. Conscientiousness is a tendency to show self-discipline, act dutifully, and to aim for achievement. It is planned rather than spontaneous behavior. Extroversion is energy, positive emotions, urgency, and the tendency to seek stimulation in the company of others. Agreeableness is a tendency to be compassionate and cooperative rather than suspicious and antagonistic towards others. Emotional stability is calm, focused, and self-confident in handling stress as opposed to insecure, anxious, and depressed.

IMPORTANCE-PERFORMANCE ANALYSIS (IPA)

The importance-performance concept is based on multi-attribute models. This technique identifies the performance of an attribute that can be changed without affecting the importance of the attribute (Kitcharoen, 2004). According to Nale et al. (2000) a particular application of the technique starts with an identification of the attributes that are relevant to the situation selected to be investigated.

This approach, also known as quadrant analysis, was introduced by Martilla and James (1977). In their study of customer satisfaction they focused on pinpointing those quality and service elements that; a) are most important to customers and/or are likely to make the strongest contribution to overall customer satisfaction and loyalty and b) are in need of improvement because customers' evaluations of the company's performance on these elements are relatively unfavourable (that is, customers are dissatisfied and/or perceive that the company's performance is in need of improvement). By using the central tendency measure such as mean, performance scores are ordered and classified into high or low categories, then by pairing these two sets of rankings, each attribute is placed into one of the four quadrants that will be displayed graphically using an importance-performance matrix as in Figure 1 (Eskildsen and Kristensen, 2006). With little modification, IPA has been applied to a diverse range of contexts including hospital services (Yavas and Shemwell, 2001), tourism management (Wade and Eagles, 2003), education (Nale et al., 2000; O'Neill and Palmer, 2004) and service quality (Ennew et al., 1993; Ford et al., 1999).

The IPA matrix consists of four quadrants; concentrate here, keep up the good work, low priority and possible overkill Oliver (1997). Firstly, the 'keep up the good work' quadrant (high importance, high performance) assumes that all elements or attributes that fall in this quadrant are to be key drivers of consumer satisfaction/preference, and the management's job is to ensure that the organization continues to deliver or perform well in these
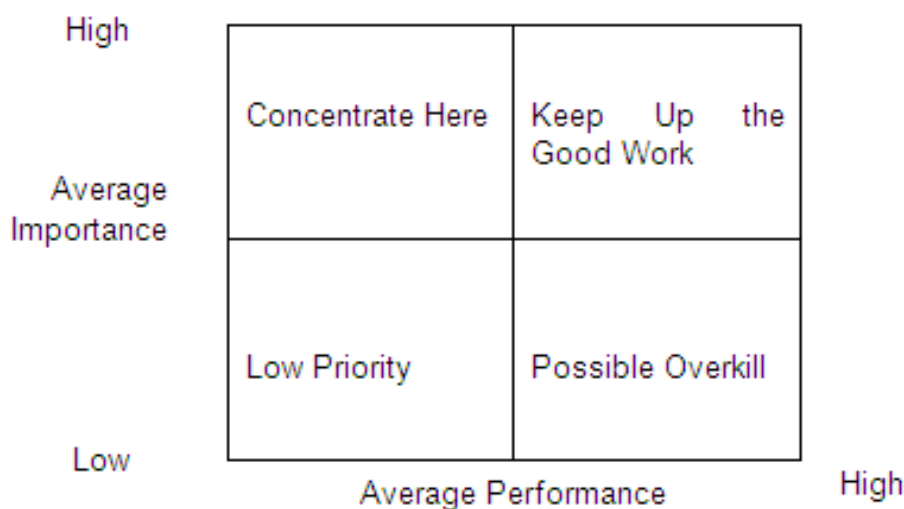
Figure 1. Importance-performance analysis.

areas. Secondly, the 'concentrate here' quadrant (high importance, low performance) assumes that all elements or attributes that fall in this quadrant are the key drivers of consumer satisfaction or preference and should be viewed as critical performance shortfalls.   It is the management's responsibility to ensure that adequate resources are allocated to these attributes to improve performance in these areas. These areas are priorities for improvement. Thirdly, the 'low priority' quadrant (low importance, low performance) assumes that all elements or attributes are relatively unimportant, such that poor performance should not be given a great deal of priority or attention by management. Finally, the 'possible overkill' quadrant (low importance, high performance) assumes that all elements or attributes are relatively unimportant, should be viewed as an area of performance "overkill" and management may want to redirect resources from these elements to high-priority areas in need of improved performance.

MATERIALS AND METHODS

The study was carried out in two phases. Phase 1 involved a focus group session of 10 members whose task was to extract information from managers through a brainstorming session. This session focused on the growing concern among employers about the relevance of the HEIs curriculum in the face of developments in the real world today. The researchers, being the moderators of the focus group, sought unprompted discussion of the issues contributing to graduate unemployment in Malaysia. Using the KSAP (knowledge, skills, abilities and personalities) dimensions (Salina et al., 2010c) as a basis for the study, questions were derived through the focus group interview and specific issues put forward by the group. In Phase 2, the dominant theme(s) emerging from the focus group study were used to establish a questionnaire pertaining to the KSAP dimensions.

Measures

The KSAP dimensions consisted of 11 factors, which included two factors for knowledge dimensions namely explicit and tacit knowledge, two factors for skills dimensions that included hard and soft skills, two factors for abilities dimensions comprised intellectual and physical abilities and five factors for personality dimensions that consisted of conscientiousness, agreeableness, emotional stability, openness and extroversion personalities. The question items used to represent each factor were between 4 and 5. This is in keeping with the thoughts of Hair et al. (2006) who indicated that a minimum of 4 question items is recommended to represent a factor.

Instrument

The questionnaire was divided into two sections. Section A was based on demographic profiles of the respondents while Section B measured the managers' perceptions of important characteristics and the corresponding performance of those characteristics among the graduates based on the KSAP dimensions. The Likert scale was used to measure respondent opinions. The first attempt was to measure respondent judgements on important characteristics of graduates, where '1' represented extremely unimportant and '7' represented extremely important, followed by a second evaluation of actual performance of these graduates, where '1' represented extremely bad and '7' extremely good. The questionnaire was distributed personally to the managers of all the companies that were listed in the top 1000 Company Directory for completion. This exercise enabled the examination of the gap between the perceptions of managers towards the important characteristics of graduates and their actual performance in terms of their knowledge, skills, abilities and personality.

Sample and analysis

The sample for the study was obtained from the top 1000 Company Directory (Malaysian Top Corporation Directory 2007-2008) which contains comprehensive information on Malaysian companies in a

wide range of corporate and industrial sectors, ranking them in terms of financial performance and listing the leaders of the respective sectors. This directory was considered to be reputable and reliable in Malaysia. However, there is likely to be a bias in the data as this directory is published annually and, therefore, may not have listed all Malaysian companies eligible to be investigated at the time the data was collected. Given the lack of other official sources of Malaysian companies, at the time of this study, the approach adopted was considered to be valid as there is a well established precedent for researchers to compile databases this way (Glaister and Buckley, 1998, 1994; Hergert and Morris, 1998; Kauser and Shaw, 2004).

Pre-analysis was carried out using factor analysis and reliability analysis. Descriptive analysis was then used to describe the data. The findings were presented in the form of a quadrant analysis. It is important to note that importance measures are direct and self-reported measures and, therefore, could have method bias. Stated methods reflect what a respondent will admit to readily and thus may not reflect fully the importance of attributes that the respondent would not admit to or of which the respondent is not aware. Consequently, stated measures may reflect a social desirability or awareness bias (Bacon, 2003). Another point to consider concerning the stated method is that the attributes may be uniformly rated highly because some respondents rate everything as very important.

RESULTS AND DISCUSSION

Demographic Profile

The respondents' demographic profile is presented in Table 1. Four hundred and seventy eight (478) completed questionnaires were received representing a 48% response rate. The majority of the graduates were attached to manufacturing companies (53%) followed by service and construction industries with 25 and 13%, respectively. Most of these graduates were employed by companies located in the central region of Peninsular Malaysia (50%). Approximately two thirds of the respondents in the survey were in middle management positions (64%) and the majority of their executive staff was degree holders (45%). Half of the respondents were Malay (57%) and 65% of them were male.

Validity and reliability of the instruments

The survey questions used for this study conformed to the validity requirement. Content validity was established in the development of the graduates' attributes dimensions. This is because it was based on focus group suggestions and literature review. The feedback and emergent issues regarding graduates' attributes which included soft and hard skills, communication skills and level of confidence, raised by the focus group were translated into scale items in the questionnaire. Factor analysis was used to establish construct validity for all the scale items of the dimensions employed in this study (Kerlinger and Lee, 2000). All of the items in the

dimensions are factor-analyzed and loaded in accordance with prior theoretical expectations. Table 2 presents Kaiser-Meyer-Olkin measure of sampling adequacy (KMO), eigenvalues and percentage of variance for each item under this study. The results of the analysis of data revealed satisfactory outputs for further analysis.

The reliability of the data was verified using Cronbach alpha, where the closer the Cronbach alpha is to 1, the higher the internal consistency reliability (Sekaran, 2000). The alpha coefficients for this study are all above 0.70 and were considered to be reliable (Hair et al., 2006; Nunnally, 1978). Table 3 presents the Cronbach alpha coefficient for each variable.

Importance-performance analysis

A summary of managers' importance-performance means for 11 scale items is presented in Table 4. The negative gap values between importance-performance indicate that, the graduates' performances have not met the managers' perceptions of the importance attributes that should be possessed by these graduates. In other words, graduates from the HEIs were under performing significantly in all attributes rated important by the supervisors and managers.

Figure 2 presents the managers' importance-performance map. The data used to construct the importance-performance grid was the overall means of importance and performance for all factors which are 6.41 and 5.64, respectively. Two factors fall into the "concentrate here" quadrants (high importance/low performance) which are soft skills and conscientiousness personality. The HEIs need to take immediate action on these graduates' attributes.

While three factors were located in the quadrant "keep up the good work" (high importance/high performance), and included extroversion personality, emotional stability personality and openness personality. The HEIs only need to maintain their current allocation of resources in developing these factors in the curriculum design of the HEIs. These three attributes are the strength attributes possessed by graduates of the HEIs in the sample, which means that graduates produced by this institution possess good personalities, namely extroversion, emotional stability and openness personality.

The five attributes that fall in the "low priority" quadrant are in relation to hard skills, intellectual abilities, explicit knowledge, tacit knowledge and agreeableness personality. This indicates that these attributes do not require immediate resource allocation as they are performing at the level appropriate to the importance attached to them at the present time. However, the HEIs should hold in reserve resources to cope with a possible change of importance attached to them due to changes in the employment environment in the future.

A physical ability is the only attribute located in the

Table 1. Demographic profile.

Items	%
Type of industry	
Manufacturing	53
Construction	13
Service	25
Information Technology	3
Heavy industry	4
Others	2
Location of company	
Northern	20
Southern	16
Central	50
Eastern	8
Western	6
Type of company	
Holding/parent	55
Subsidiary	10
Others	35
Number of employees	
Less than 20	11
20 to 50	14
51 to 150	15
51 to 500	18
More than500	42
Position at the company	
Top management	25
Middle management	64
Lower management	11
Highest qualification held by executive level employees	
Postgraduate degree	41
Degree	45
Diploma	12
Others	2
Highest education level	
Postgraduate degree	19
Degree	47
Diploma	20
STPM/SPM	13
Others	1
Number of years experience	
1 to 5 years	34
6 to 10 years	37
More than 10 years	29

Table 1. Contd.

Race	
Malay	57
Chinese	37
Indian	5
Others	1
Gender	
Male	65
Female	35

Table 2. Summary of factor analyses.

Dimensions	Items	Importance			Actual Performance		
		KMO	Eigenvalues	% of variance	KMO	Eigenvalues	% of variance
Knowledge	Explicit knowledge	0.88	3.79	75.89	0.84	3.67	73.39
	Tacit knowledge	0.83	3.18	79.52	0.83	3.23	80.74
Skills	Hard skills	0.86	3.82	76.40	0.85	3.81	76.20
	Soft skills	0.78	3.28	65.52	0.85	3.54	70.87
Abilities	Intellectual abilities	0.84	3.67	73.49	0.84	3.74	74.81
	Physical abilities	0.85	3.33	83.35	0.79	2.72	67.86
Personality	Conscientiousness	0.82	3.79	75.78	0.84	3.86	77.25
	Agreeableness	0.82	3.00	75.07	0.84	3.13	78.19
	Emotional stability	0.79	3.22	80.53	0.79	3.21	80.29
	Openness	0.85	3.73	74.58	0.84	3.85	76.93
	Extroversion	0.80	3.26	81.61	0.80	3.24	80.96

Table 3. Reliability statistics for importance and actual performance scale.

Dimensions	Items	Importance	Actual performance	No. of item
Knowledge	Explicit knowledge	0.920	0.909	5
	Tacit knowledge	0.914	0.920	4
Skills	Hard skills	0.922	0.922	5
	Soft skills	0.866	0.897	5
Abilities	Intellectual abilities	0.909	0.915	5
	Physical abilities	0.933	0.702	4
Personality	Conscientiousness	0.919	0.926	5
	Agreeableness	0.888	0.907	4
	Emotional stability	0.919	0.918	4
	Openness	0.914	0.925	5
	Extroversion	0.924	0.921	4

"possible overkill" quadrant. This requires the HEIs to immediately remove resources allocated to developing this attribute and redeploy the resources saved to developing attributes located in the "concentrate here" quadrant. The next focus is to look at items for each attribute on which the HEIs needs to take immediate

Table 4. Summary of means importance and actual performance.

| Dimensions	Items	Importance	Performance	Gap (P-I)
Knowledge	Explicit knowledge	6.408	5.633	-0.775
	Tacit knowledge	6.376	5.637	-0.739
Skills	Hard skills	6.400	5.629	-0.771
	Soft skills	6.431	5.623	-0.808
Abilities	Intellectual abilities	6.403	5.615	-0.788
	Physical abilities	6.333	5.662	-0.671
Personality	Conscientiousness	6.427	5.638	-0.789
	Agreeableness	6.343	5.607	-0.736
	Emotional stability	6.449	5.643	-0.806
	Openness	6.423	5.656	-0.767
	Extroversion	6.464	5.645	-0.819
Overall		6.405	5.635	

(P-I) value is significant at $P<0.05$.
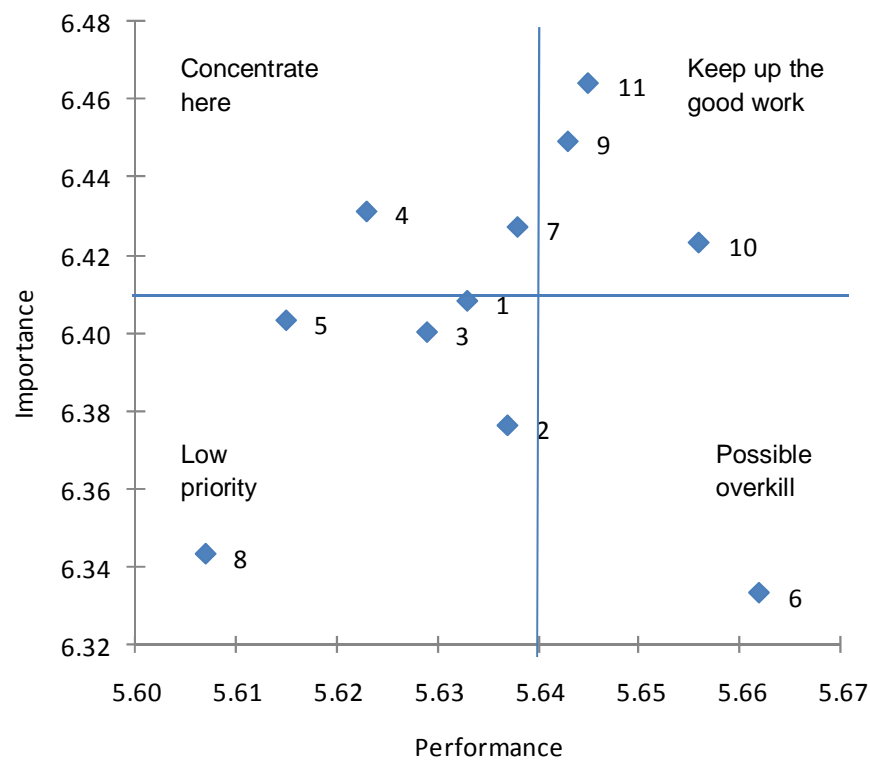
Figure 2. Importance-performance map. Note: 1. explicit knowledge, 2. tacit knowledge, 3. hard skills, 4. soft skills, 5. intellectual abilities, 6. physical abilities, 7. conscientiousness, 8. agreeableness, 9. emotional stability, 10. openness, 11. extroversion.

action. These fall into the "concentrate here quadrant" and require a reduction in resource allocation from dimensions that are underperforming in the "possible overkill" quadrant.
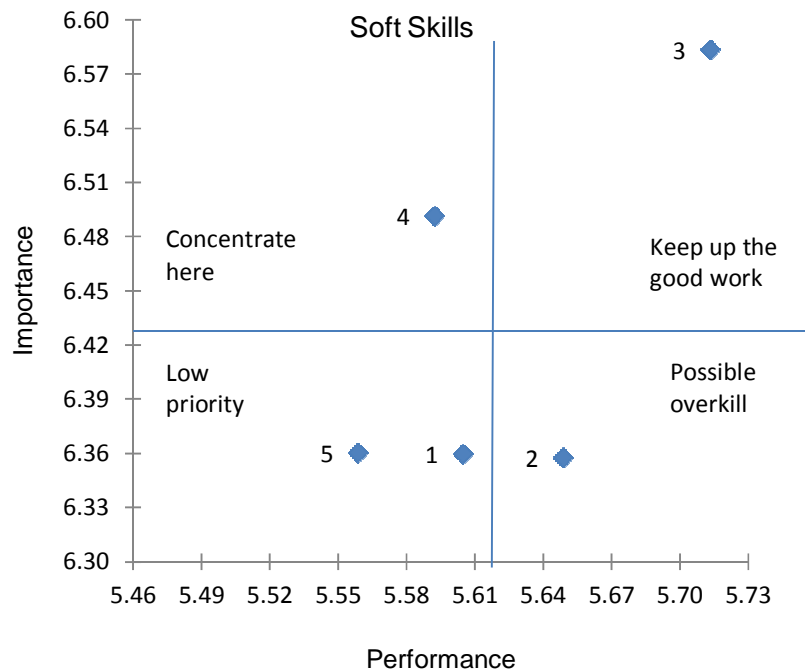
Figure 3. IPA Map for soft skills factor. Note: 1. Able to solve situational problems, 2. Present strong leadership skills, 3. Able to establish good relationship with co-workers, 4. Able to establish good relationship with top managers, and 5. Able to establish good relationship with senior staff members.

"Concentrate here" quadrant

There are two factors that fall into this quadrant; soft skills and conscientious personality.

Soft skills factor

Soft skills are difficult to describe and intangible. An example might be a bedside manner, a pleasant voice or a cooperative spirit. Leadership, creativity and the ability to teach and learn are all considered soft skills and they are really the essence of what an employer is looking for in a job applicant (Robbins and Judge, 2009). Mean importance-performance for this factor is 6.43 and 5.62 respectively. There are five items under this factor; 1) Able to solve situational problems, 2) Presents strong leadership skills, 3) Able to establish good relationships with co-workers, 4) Able to establish good relationships with top managers, and 5) Able to establish good relationships with senior staff members. Figure 3 indicates that one item falls into the "concentrate here", "keep up the good work" and "possible overkill" quadrant. Another two items fall into the "low priority" quadrant. Supervisors or managers of graduates from these HEIs are satisfied with their co-workers in terms of their ability to establish good relationships with co-workers. However, supervisors or managers commented that these graduates need to improve their skills related to establishing a good relationship with their top managers. At the same time, they have reservations about the graduates' abilities in relation to maintaining a good relationship with senior staff members, and an ability to solve situational problems. These attributes may not be important at the moment, but such requisites can emerge and HEIs must allocate resources to develop these qualities in their graduates in the future. Presenting a strong leadership skill is an item that requires the HEIs to immediately remove resources allocated in developing this attribute and redistribute the resources saved to develop attributes located in the "concentrate here" quadrant.

Conscientious personality factor

Conscientious personality is a tendency to show self-discipline, act dutifully, and to aim for achievement. This personality is planned rather than spontaneous behaviour. Mean importance-performance for this factor is 6.43 and 5.64, respectively. There are five items in this factor; 1) Willing to accept responsibilities, 2) Works in an organize manner, 3) Passionate about job responsibility, 4) Ability to meet task datelines, and 5) Participates actively in the work environment. Figure 4 indicates that one item falls into the "concentrate here", "keep up the
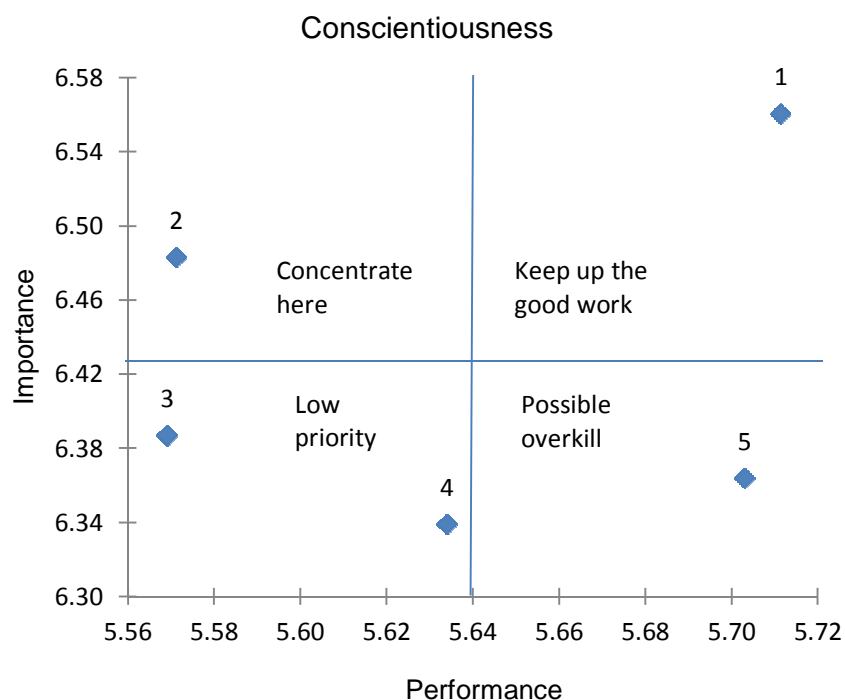
Conscientiousness

Figure 4. IPA Map for conscientiousness personality factor. Note: 1. Willing to accept responsibilities, 2. Work in an organize manner, 3. Passionate about job responsibility, 4. Able to meet task dateline, 5. Participate actively in work environment.

good work" and "possible overkill" quadrant. Another two items fall into the "low priority" quadrant. Supervisors or managers of these graduates suggested that graduates from these HEIs need to organize their work more systematically. Thus, HEIs need to take immediate action on these attributes when designing their curriculum. At the same time, supervisors or managers commented that these graduates were willing to accept the responsibilities given to them, which in fact, is one these graduates' strengths. In the meantime, HEIs need to remove resources allocated to develop the "Participate actively in work environment" attribute and redeploy the resources saved to develop attributes in the "concentrate here" quadrant. Finally, supervisors or managers have reservations about the graduates' abilities in relation to their passion for their job responsibilities and their ability to meet task datelines. These attributes may not be important at the moment, but such requisites can appear and HEIs must allocate resources to develop these qualities in their graduates in the future.

"Possible overkill" quadrant

A physical ability is the only factor that falls into this quadrant.

Physical abilities factor

Physical abilities are described as abilities that are required to do tasks that required stamina, dexterity, strength and similar characteristics. Mean importance-performance for this factor is 6.33 and 5.66 respectively. There are four items under this factor; 1) Confronting problems effectively, 2) Ability to cope with work pressure, 3) Having strong mental endurance, and 4) Displaying a proactive disposition. Figure 5 presents these four items, where one item falls into the "concentrate here" quadrant and "possible overkill" quadrant respectively.

Managers or supervisors in the samples commented that graduates need to have the ability to cope with work pressure. HEIs need to take immediate action on this attribute when designing or improving their curriculum. At the same time HEIs need to remove their resources allocated to the graduates' attribute of "displaying a proactive disposition" and redeploy this resource to the "concentrate here" quadrant attribute.

There are two items that fall neither into the "concentrate here" quadrant nor into the "low priority" quadrant, namely the ability to confront problems effectively and having strong mental endurance. HEIs need to check these two attributes from time to time according to market demand. HEIs also need to consider
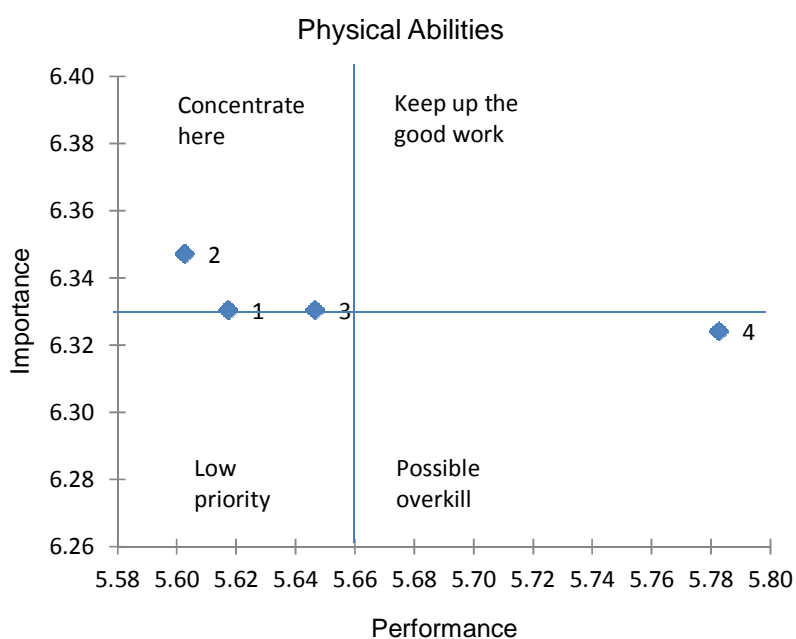
Physical Abilities

Figure 5. IPA map for physical abilities factor. Note: 1. Confronting problems effectively, 2. Able to cope with work pressure, 3. Strong mental endurance, 4. Display a proactive disposition.

these attributes when designing or updating their curriculum.

CONCLUSION AND FUTURE RESEARCH

This study has provided evidence of the usefulness of the IPA in designing curriculum development strategies for HEIs in Malaysia. The outcome of the analysis provides impetus for enhancing the quality of the higher education curriculum and making it relevant to the needs of the market and industries.   The study highlights the practicality of the IPA as a means of assessing and directing continuous curriculum development efforts within the higher education sector. The use of the IPA in evaluating managers' perceptions of graduates' can identify how graduates are performing, identify specific problem areas and help target corresponding improvement efforts.

The study reveals the factors relevant to the managers' perceptions of the graduates and their satisfaction level with the performance of the HEI's graduates. The results of this study indicate that managers attach different weightings to different aspects of the graduates' performance and, therefore, curriculum development efforts should be directed towards attributes that are expected of the graduates. This will allow for corrective actions which can then be taken to improve perceived problem areas.

The findings also supported the suggestion reported by Abdullah (2009) on the Integrated Approach proposed by Dr. Ranjit Singh Malhi, a CEO and Principal Consultant of TQM Consultants Sdn. Bhd. and Self- Esteem Seminars Sdn. Bhd. He proposed an Integrated Approach to HEIs which includes a compulsory stand-alone Personal Development Module for developing soft skills. He recommends a holistic approach to enhance graduate employability by embedding soft skills into the curriculum, getting students involved in extra-curricular activities, work placements and vocational guidance on how to get a job.

The findings of this study suggest that the HEIs in Malaysia should target improvements or inclusions of soft skills and a specific personality development component pertaining to conscientiousness in their curriculum. These HEIs should reduce their resources for enhancing physical abilities in the curriculum and maintain a low level of resource deployment in developing knowledge, hard skills, intellectual abilities and a sense of agreement in the manner in which their curriculum is delivered.

Clearly, from the above discussion, this study contributes new findings to the field of graduate employability and HEIs' curriculum development. Besides focusing on the knowledge, skills and abilities; this study introduces the big five personalities (KSAP) which are also vital for graduate employability. The graduates need to be equipped with such personalities in order to be competent, industrious, of high quality and able to fulfil

the industry's requirements. The findings also supported the resource-based view and the alliance theory that were used as underlying theories in this study.

Evidently, the HEIs should undertake extensive employer research in order to identify those factors to be in evidence when evaluating graduate performance. Consequently, this information can assist in decision making on a range of fronts, including facilities development, positioning attributes, curriculum development and the delivery of the core curriculum in Malaysia, in an effort to produce a competitive workforce for the international marketplace.

It should be noted that this is a case study of graduates from HEIs in Malaysia. Future research could seek to establish whether a consistent pattern is observable across graduates from all other HEIs in different categories of industry and different levels of managers' expectations among other countries within the South East Asian region. This would facilitate a greater mobility of graduates within the region. It also should be noted that the quantitative analysis used does not explain why the observed ratings occurred. A supplementary exploratory study is required to address this concern. However, it must be remembered that the managers' expectations and performance ratings for specific attributes change over time due to changes in the macro environment.

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