

Employability Of Politeknik Melaka Engineering Graduates From Industry And Employer Perspectives In Terms Of Technical Skills And Generic Skills

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Abstract

National education aims to produce the leading human capital in terms of skills and knowledge in the field taken through various challenges. It is vital to transforming the Malaysian economy towards achieving developed and high-income status. Therefore, the quantity and quality of graduates born must be the best to meet the standards of the industry and employers. It is the main thrust that contributes towards the success of the country's aspirations. The employability of graduates is the main focus throughout the selection phase to ensure that qualified graduates are accepted to work. Therefore, this marketability study is conducted based on the current situation, which sees various constraints in meeting the criteria set by the industry and employers. This study will be able to reference higher learning institutions, especially the Politeknik Melaka, to prepare graduates to succeed in the hiring process. This study gave questions to several employers and industries that received engineering technical students (Civil, Mechanical and Electrical) who undergo industrial training, including graduates working in the industry. Among the aspects of assessment is their perception of the quality of students and the measure of the quality level of the education system in the polytechnic for a graduate to get a job and career development. The results of the study found that the performance of graduates is excellent, with some weaknesses in some aspects as prescribed by the employer. This critical situation needs to get the attention of the polytechnics through improvements in terms of theoretical and practical learning as well as facilities to achieve the mission and vision of polytechnics as the leading institution of TVET Malaysia.

Keywords: Marketability; Technical Skills; Generic Skills; Employer

1.0 Introduction

Human capital is the mainstay in the development process of a country. It is also core to innovation and a productive, high-income economy. Quality human capital generated through the country's education system is the cornerstone of a country's economic strength. The education system should be able to produce graduates who are strong in various disciplines, spiritual, mind, emotional, interaction of manners and ethics in line with the country's aspiration to strengthen human capital further. In this regard, the government is very concerned and takes the needs of human capital seriously. Various strategies, policies and programs for human capital development have never been excluded from the government's plan. Several budgets are allocated to finance programs and projects related to human capital

development at a high level. In addition, the Job Creation Strategic Plan 2021-2023 was introduced to enable the country to provide the resilient and highly skilled workforce that the industry needs. All these are concerted efforts from all parties to ensure the successful employability of graduates to meet the needs of employers and local industries. In addition, the employability of graduates is the most important indicator that reflects and demonstrates the effectiveness of the education planning of any institution, particularly Politeknik Melaka, to produce a holistic technical field workforce. Therefore, it is the responsibility of one and all as the quality of graduates to be thoroughly assessed by the employer. Although the demand for polytechnic graduates is very encouraging, there is still space to be emphasized to strengthen the quality of graduates. This study aims to identify employers' perceptions of the quality of graduates in terms of technical and generic skills.

2.0 Problem Statement

Graduates are products from institutions of higher learning that enter the realm of employment and become part of the workforce, either in the government or private sectors. In reality, higher education institutions in Malaysia have produced sufficient numbers of graduates to meet the needs of the country's workforce. The capacity of higher learning institutions has increased since the first university in the country, the University of Malaya, in 1961. Current statistics show 942,200 students in 20 public universities, 32 private universities and university colleges, four branches of international university campuses, 21 polytechnics, 37 public community colleges and 485 private colleges (Ministry of Higher Education, 2007). Apart from ensuring physical capacity in this institute, the government has shown its commitment by creating the National Higher Education Fund Corporation (PTPTN) to provide education funding to diploma and first-degree students at government and private institutions. All qualified students are now not denied the opportunity to pursue their studies at local IPTs, whether public or private. However, the bigger challenge is to provide the human capital demanded by the industry. The unemployment problem among graduates is not a new issue and gives a negative perception to various parties about the country's development process, especially in education. This alarming situation shows the relevance of graduates' current employability level, whether graduates of public or private institutions of study. Utusan Online (2016) reported that 23.9% of graduates are still unemployed even after several years of graduating from higher education institutes. The increase in issues related to complaints from some employers and industry about the quality of these graduates, thus contributes to unemployment among graduates. The inability of the students to channel their skills according to the scope of the tasks set at the workplace thus gives a poor picture and adversely affects the institution's reputation. Several recent studies have proven that soft skills are a complementary element that is very important to technical skills to increase productivity and innovation culture in an organization (Ceschin et al. 2017; O'Leary 2017; Smith et al. 2016). The mismatch of technical skills and lack of ability to communicate well in Bahasa Malaysia and English also received serious attention from employers. The education system should be able to produce

graduates who are strong in various disciplines, spiritual, mind, emotional, interaction of manners and ethics in line with the country's aspiration to strengthen human capital further. Now, employers aim for a broader and more dynamic qualification for graduates in terms of academic qualifications and practical, spiritual and entrepreneurial skills. Seri Bunian Mokhtar & Ramlee Mustapha (2010) stated that the employability of graduates is a critical issue where there is a malfunction in generic skills among graduates. Employers not only look to technical skills but also to high generic skills to compete.

Employers are now very focused on generic skills to ensure graduates can think critically, creatively and positively. The failure of graduates to follow and leverage technology also needs to be enhanced to gain a place in the job market. It is important to ensure a company's performance to thrive and survive complex external competition. The ability of graduates to apply technology skills is becoming increasingly important in today's employment (Ferns & Lilly 2015; Jackson 2010; Singh & Gera 2015) has discussed the skills that graduates need to have and have good academic qualifications. These findings align with the Davis & Woodward study (2006) findings. The study in identifying the employability of graduates in this art of modernity is important and relevant as it can provide many beneficial inputs not only to local institutions of higher learning in Malaysia but also to the graduates themselves. Therefore, this study is carried out to identify graduates' employability level and whether it is successful in meeting the requirements of industries or vice versa.

3.0 Literature Review

3.1 Meeting Industry's Standard

The current phenomenon of unemployment in Malaysia is clearly due to skills mismatch. Besides, a report by the World Bank entitled "Malaysia and the Knowledge Economy: Building a World-Class Higher Education System in 2007" has placed skills impersonation among the 3 main pillars contributing to unemployment. The transition from the realm of schooling to the realm of work is a time-consuming process in which newly entered labourers will find a suitable job match. They will look for job opportunities that allow them to apply the training that has been the highest possible gain to meet their career aspirations and brand income expectations. The education system should be able to produce graduates who are strong in various disciplines, spiritual, mind, emotional, interaction of manners and ethics in line with the country's aspiration to strengthen further human capital (Siti Zaleha Omain et al., 2007). According to Li & Zhang (2010), employers tend to choose graduates who have outstanding achievements. Now, employers aim for a broader and more dynamic qualification for graduates in terms of academic qualifications and practical, spiritual and entrepreneurial skills. Azah Mohamed et al. (2007) have discussed the issue of skills that graduates need to have and good academic qualifications. The findings align with the findings in the Davis & Woodward (2006) study, which stated that continuous innovative

development leads to the need for jobs that regularly go through the phases of change to meet the standards set by the industry.

3.2 Skills Gap

The rapid development of all aspects of the industry's needs significantly impacts graduates' employability. According to Fanning (2006), one of the biggest threats for a graduate is to ensure that the skills possessed keep up with the development of the engineering industry. Moreover, Skills mismatch has many dimensions: a balance in demand-supply between areas of study (such as humanities, science and engineering), a balance between technical and generic (soft) skills and a balance between theoretical and practice-oriented in education and accepted training. Part of the skills mismatch results from individual career choices regarding field of study and work-related priorities. Skills mismatch can also arise from weaknesses in tertiary educational institutions in the form of quality of education, faculty and pedagogy, delivering academic programs tailored to market needs, and whether career counselling is provided to students. A case study conducted by the National Higher Education Research Institute (IPPTN) found that employers generally need employees with communication skills, good personal characteristics and knowledge of ICT. Noor Azlan (2003) found that most graduates of local institutions do not possess the job skills required by the market, and there seems to be a "mismatch" in preparing graduates for the local job market. For decades, many employers have hinted to the IPT that there is a 'skills gap' between employers and those owned by graduates (Dickinson, 2000). Individual and family priorities are also why graduates voluntarily remain unemployed to find suitable jobs and are willing to wait for high-status positions in the public sector. Generic or soft skills are also a criterion that has gained the industry's attention today. Technical professionals in various disciplines such as information technology, engineering, architecture, and research and development are increasingly needed to broaden their skill sets to master soft skills (Bancino & Zevalkink, 2007). A study by (Muhammad Hazrul Ismail, 2012) found that the largest gap was recorded for decision-making and problem-solving features by recording gap scores. Based on this study, the actual performance of the graduates is lower than the employer's expectations. The ability to make decisions and solve problems is a critical generic skill to spearhead the industry's and employers' success. It is an extra skill that the employer emphasizes to ensure that the scope of tasks assigned can be carried out best and sustainably. There are various claims that graduates in Malaysia find it difficult to get a job because they do not meet the needs of employers in terms of skills (Siti Zaleha et al., 2007).

3.3 Unemployment Issues

The situation is most likely based on the assessment and observation of the employer. There is an assignment and way of working for a graduate in performing the assigned task specialization. Although the scope of work is within the field of study, a few graduates do not seem to have the skills to do the job. Among the worst impacts a country has is the issue of unemployment.

Unemployment among graduates is a phenomenon in many countries. It may be due to several factors, such as a slow economic growth rate, industry demand changing unexpectedly, and graduates produced not matching the demands of the industry. According to Shaharuddin Ahmad et al. (2011), a graduate's employability differs in nature and degree. The areas of technical knowledge learned the achievement of academic approval, generic skills and personal factors are among the important elements that affect the level of graduate employability. Azah Mohamed, Farah Liza Mohd Isa, & Haryati Shafii (2007) claimed that the issue of unemployment among university graduates is frequently linked to the inadequate competency of graduates produced by the institution itself. The most difficult aspect of human resource management is hiring qualified employees. Due to changes in the educational landscape and, consequently, in the selection criteria for job candidates, this difficulty is amplified (Moreau & Leathwood, 2006). Makhbul et al. (2015) discovered that employers assess potential hires based on technical capabilities and generic skills (soft skills).

4.0 Methodology

The study's methodology is a very important part of implementing the research. A total of 93 employers were selected to answer the questionnaire on the employability of the engineering graduates of Politeknik Melaka (Civil, Electrical and Mechanical). Employers were selected based on their recruitment frequency and Industrial Training Engagement with Politeknik Melaka. The study's findings showed the Mean Score Value and Standard deviation obtained using the Statistical Package for the Social Science (SPSS). SPSS was used to perform statistical analysis on Mean and Standard Deviation. To explain the data more clearly, we used the questionnaire's 5-point Likert Scale for satisfaction index items. The highest point is 1, while the lowest is 5. These points are classified as follows based on the Likert scale: 1 (Excellent), 2 (Good), 3 (Moderate), 4 (Less Skilled), and 5 (Failed). In addition to the Likert Scale, the findings were also presented in percentage form. The Likert Scale was applied to determine graduates' exact competency from the employer's perspective.

5.0 Results and Discussion

5.1 Employability of graduate from the industry perspective

Table 1: Likert Scale

1	2	3	4	5
Excellent	Good	Moderate	Less Skilled	Failed

Siti Nor Hayati M. Yusop & Karimah Umar (2018)

To explain the interpretation of the mean score of the findings of the graduate satisfaction index on the aspect of the service being assessed, the table of interpretation of the score is as follows:

Table 2: Min Score Interpretation

1.00 – 1.80	1.81– 2.60	2.61– 3.40	3.41- 4.20	4.21 – 5.00
Strongly Satisfied	Satisfied	Average	Dissatisfied	Strongly Dissatisfied

Siti Nor Hayati M. Yusop & Karimah Umar (2018)

Table 3: Mean Score Values and Standard Deviation

Question	Items	Min Score	Standard Deviation (SD)
1	Employer's perception of the overall performance of graduates	1.54	0.65
2	Employer's perception of the technical skills of graduates	1.60	0.72
3	Employer's perception of generic leadership skills, teamwork, communication, discipline and others)	1.53	0.64
4	Employer's perception of the overall performance of male graduates	1.54	0.65
5	Employer's perception of the overall performance of female graduates	1.75	0.80
6	The ability of graduates to perform tasks according to the specifications and time set	1.54	0.75
7	The ability of graduates to perform tasks without the monitoring of the employer	1.69	0.79
8	The ability of graduates to master new skills	1.52	0.67
9	The ability of graduates to adapt to workplace conditions	1.48	0.67
Average mean score / average standard deviation score		1.58	0.70

The results of the study found that the employer's perception of the overall performance of the graduates was at the Strongly Satisfied level, where the score reading was (Mean = 1.54, SD = 0.65). This finding shows a signal that the overall assessment from employers on the skills of polytechnic graduates is at the level of Strongly Satisfied. 54.2% of employers agree that the perception of graduates is at an excellent level. For assessing the employer's perception of the graduate's technical skills, the score reading (Mean = 1.60, SD = 0.72). This result shows that the student's technical skills are Strongly Satisfied. Next, the employer's perception of generic skills indicates a score reading (Mean = 1.53, SD 0.64). Technical and generic skills graduates achieved 51% and 54.2%, respectively, at Strongly Satisfied. This finding is in line with the study carried out by (Jackson 2010; Truong et al. 2017, 2018)

which states that generic skills are an important requirement often overlooked in the education and training system as it puts more emphasis on technical skills. The score reading for employers' perception of the overall performance of male graduates is (Mean = 1.54, SD = 0.65).

Meanwhile, the employer's perception of the overall performance of female graduates shows a score reading (Mean = 1.75, SD = 0.80). The percentage of Excellent performance level for male graduates was high at 54.2% compared to female 43.8%. The findings for the employer's perception show that the performance of male graduates is higher compared to females. However, these findings are not in line with those presented by Faridah (2016) and Siti Maria (2012) through their studies, which state that there is a trend of increasing female workers in the industry showing that performing tasks on par with employees and the ability of women to perform their work more carefully and carefully than male workers, especially in performing complex tasks. The findings on the ability of graduates to perform tasks without employer monitoring were also at a Strongly Satisfied score (Mean = 1.69, SD = 0.79), of which 46.0% for Excellent, 42.7% for Good, 7.3% for Moderate, and 2.2% Less Skilled. It proves that the marketability of the Politeknik Melaka engineering graduates is strong. In addition, the score for the ability of the graduates to perform the tasks according to the specifications and time set by the employer is (Mean = 1.54, SD = 0.75). This result shows that the engineering graduates of the Politeknik Melaka can perform their tassystematically and disciplinedner. Items for the ability of graduates to master new skills recorded a score reading (Mean= 1.52, SD = 0.67). Item 9 for graduates' ability to adapt to workplace conditions to score (Mean = 1.48, SD 0.67).

Furthermore, the mean reading score on the 9th item is also at a Strongly Satisfied level. This finding reflects graduates' ability and initial preparation to pursue employment and successfully balance technical skills and generic skills that need to be highlighted in the workplace. These three items are at the highest percentage level of 57. 3%. Individuals with high skills, knowledge and employability characteristics can become productive individuals and contribute towards the modernization of society, especially in economic growth and development (Pinheiro & Pillay 2016). The major finding was that the graduates of Politeknik Melaka had all the skills and qualities in their respective engineering fields as demanded by employers.

6.0 Conclusion

The employability study of the engineering graduates of Politeknik Melaka shows that employers' perception is positive and excellent for the average mean score and standard deviation recorded values of 1.58 and 0.70, respectively. This result shows that the marketability of the Politeknik Melaka engineering graduates is Excellent. Future studies can be extended to the whole of Malaysian Polytechnic. Therefore, higher learning centres need to emphasize the quality of graduates born to meet the job market's needs, which is quite challenging today. A graduate's quality assessment level is also now

seen in a broader scope where graduates need to have added value or added value in terms of technical skills. However, a quality and balanced level of education with the modernity of technology industry needs should always be the priority of higher education centres in Malaysia, especially in the technical field. Efficient and relevant efforts and strategies need to be implemented continuously through the organization of various forms of skills programs. The application of generic values in helping students to obtain careers programs related to career opportunities and industry needs according to the program of study is also an important medium for disseminating information, which is right in addition to raising awareness of graduates about their careers. Thus, the role of a lecturer has a big impact, especially in educating graduates to become excellent human capital that can generate a country's economy. In addition, the management also needs to ensure that all aspects of the service are in satisfactory condition so that the learning process can be carried out properly. Problems and suggestions for enhancement should be acknowledged by taking significant action.

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Author Contributions

Hussein A.: Conceptualization, Methodology, Writing Original Draft Preparation;

Nurul A. A.: Writing-Reviewing and Editing;

Eric Yeo C. A.: Data Curation, Software Supervision.

Conflicts Of Interest

The manuscript has not been published elsewhere and is not under consideration by other journals. All authors have approved the review, agree with its Submission and declare no conflict of interest in the manuscript.

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