

Performance in Industrial Training: Industry Evaluation on Business and Management Students.

Zaharah Safin^{1*}, Nor Amira Ali², Hasmah Laili Jamalurus³, Rosliza Md Zani⁴ and Kamarul Ariffin Mansor⁵

¹Faculty of Business and Management, UiTM Cawangan Kedah, Merbok, Kedah, Malaysia.
zaharah963@kedah.uitm.edu.my

²Faculty of Business and Management, UiTM Cawangan Kedah, Merbok, Kedah, Malaysia.
noram370@kedah.uitm.edu.my

³Faculty of Business and Management, UiTM Cawangan Kedah, Merbok, Kedah, Malaysia.
hasmahlaili@kedah.uitm.edu.my

⁴Faculty of Business and Management, UiTM Cawangan Kedah, Merbok, Kedah, Malaysia.
rosliza568@kedah.uitm.edu.my

⁵Faculty of Computer Sciences and Mathematics, UiTM Cawangan Kedah, Merbok, Kedah, Malaysia.
Ariff118@kedah.uitm.edu.my

*Corresponding author

Abstract: Emergent inquiries from industry regarding poor industrial training quality had forced the higher learning institutions to seek means to enhance their industrial training quality. Universiti Teknologi MARA (UiTM) as one of the established higher learning institution in Malaysia believed that one of the platforms used to produce high quality graduates is through industrial training. Hence, this research was conducted by focusing on the industries' evaluation of UiTM Kedah Business and Management practical students. This research also aim to identify the performance of industrial training students and how the university can benefit from the result. The questionnaires were developed in accordance to the objectives of the university and was based on the UiTM Practicum Evaluation Report by Industry. 228 sets of questionnaires were collected from the supervisors from various part of Malaysia, both public as well as private sector. The results were analysed using Smart PLS application software and it was found that cognitive, skills and attitudinal values development outcomes have a positive and significant relationship with the practical students' performances in industrial training.

Keywords: attitudinal values, cognitive, industrial training, performance, skills.

Introduction

Industrial training is one type of experiential education which provides the opportunity for students to experience the real working environment which directly relate to the knowledge application. Rezal Hamzah et al., (2011), refers industrial training as job experience that is relevant to professional development. With reference to Course Information IBM671 (2013), industrial training course serves as a platform for the student to gain practical knowledge and acquire job skills in an organization. According Nor'Aini Yusof and Siti Nur Fazillah Mohd Fauzi (2013), there are several terms used to describe industrial training such as practical training, industrial internship programs, industrial placement, and practicum program. As part of the learning processes and industrial exposure, Universiti Teknologi Mara (UiTM) has made it compulsory for Business and Management students to undergo a 16 week of industrial training to successfully graduate with a bachelor degree. The underlying principle for industrial training is to create a competent, qualified, and efficient future worker whom will be able to do a decision making and give opinions whenever necessary.

In an attempt to become a developed country, Malaysian's workforce are anticipate to be well equipped with both hard and soft skills. Hence, it is very crucial to expose the fresh graduates to these skills, to prepare them both physically and mentally before entering the real working environment by providing them with appropriate industrial training. A study by Megat Mohd Nor and Suhaiza Ismail (2015) said that scholars and researchers need to investigate the effectiveness of the industrial training programme in preparing students for their future career development. Neil et al., (2003) agreed that industrial training program is very important and it is an essential component in undergraduate courses. There were previous studies conducted regarding industrial training, however, less attention was given to measure the students' performance from the viewpoints of industry especially for Business and Management students. Lately, the industry's feedback regarding poor industrial training quality had forced the higher learning institutions to seek means to enhance their industrial training quality. According to Nor 'Aini Yusof and Siti Nur Fazillah Mohd Fauzi (2013), there is limited evidence regarding the performance of students within the industrial training program and most of the studies

related to industrial training have been focused on the perception of students and employers. Thus, this study was conducted to find the relationship between the industrial training program with the students' performance. This study involved three variables which are cognitive development, skills development and attitudinal values outcomes. The variables were based on three domains of educational activities based on Bloom's Taxonomy (Siti Aminah Osman et al., 2016).

Literature Review

Industrial Training

Industrial training program refers to the experience obtain in the real working environment which assist in future employment. It is a vital element in the process to develop thorough professional skills and work ethics, which is also a requirement for business management students (Gibson, 2001). Industrial training is a crucial component in university education which create professionals. Among the objectives of industrial training or also known as internships is to transfer of knowledge or experience from university to working environment (Maertz, Stoeberl and Marks, 2014). Students who had completed an industrial training programme were more likely to achieve a first or upper second class degree compared to those who were not (Wallace, 2002). In addition , Lam & Ching (2007) said industrial training can assist students to bridge the gap between the academic learning process and the practical reality.

Students' Performances

According to Rancangan Malaysia Kesepuluh RMK-10 (2010), public university must be responsible on achievement and performance achieved, as most financial requirements are funded by public allocation. Research by Jamaludin et al., (2016) has found that industrial training exposed students to the real working environment, gained a new knowledge from the industry, experience the latest technology application as well as improve students' technical skills in real industry situation. Apart from that, in a study by Omar et al., (2008) from the students' points of view, the results showed that there were differences between students' performances before and after completing industrial training. The students believed that they benefited significantly from the training and satisfied with their performances.

Cognitive Development Outcomes

Cognitive development consist of the acquisition of knowledge in fulfilling certain jobs, capability of learning in new tasks, the application of knowledge and the ability to think creatively as well as self-directed learner (Course Information IBM 671, 2013). Bratton et al., 2007 proposed that human consciousness cannot be investigated adequately by unscrambling its component but only by investigating its overall shape or pattern. According to Mohammad Rezal Hamzah et al., (2013), cognitive learning is the ability to understand job and its execution is especially important, as this trait will be utilized in the industry. Besides that, the industry also emphasis on quality of work as it is vital to every individual

Skills Development Outcomes

According to Hasbullah and Sulaiman (2002), skills can be categorized into two categories which are hard and soft skills. Hard or technical skills refer to knowledge and expertise that are necessary for the job. Whereas, soft skills which sometimes interchanged with term generic skills, are interpersonal abilities attributes that individual possesses (Robles, 2012). For this particular study, UiTM aims to evaluate students in terms of their level of task, job or managerial skills, level of problem solving and analytical skills, communication and language proficiency, social and human interrelation as well as information technology skills. Yorke (2006) and Woon et al., (2007), said that industrial training programs will improve the students' technical and soft skills before they enter the real work setting.

Through industrial training, the students may be able to match their proficiencies with the industry's expectation (Junaini et al., 2008).

Attitudinal Values Outcomes

Hogg & Vaughan (2005) define attitude as a settled way of thinking or feeling about someone or something, typically one that is reflected in a person's behavior. Milman (2002) identifies that job attitudes and working morale are the key sources to enhance the performance of employee. Based on the finding by Erni (2015), industrial supervisors satisfied with performance of business students whom were excellent in the area of punctuality, honesty and relations with colleagues. Mohammad Rezal Hamzah et al., (2011) on the other hand said that industrial trainees with high motivation level willing to finish their task according to the organization's requirements.

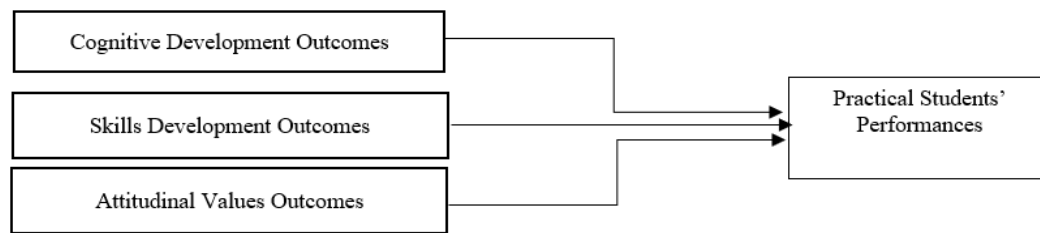


Fig. 1: Conceptual Framework

Figure 1 illustrates the relationship between cognitive development, skills development and attitudinal values outcomes with the practical students' performances.

Research Methodology

Research Design and Type of Study

This study was conducted by using a quantitative research. There are various issues involved before choosing the right research design whether exploratory, descriptive, or causal. However, for this particular study, the researcher finally decided to choose causal study in order to test whether or not one variable causes to another variable. Quantitative method was used and there were several hypotheses developed to be tested which based on the objectives of this study that answered the research questions.

Population and Unit of Analysis

The population for this study is 358 supervisors for UiTM Kedah Business Management practical students from various organizations all over Malaysia both from public as well as private sector. The unit of analysis for this study is individual, the questionnaires were distributed and completed by the supervisors whom responsible for the practical students. These supervisors had a close-monitoring on these practical students which allow them to be the right person to evaluate the practical students' performances. Hence, they had evaluated the practical students' performance during industrial training placement for 16 weeks in semester Feb-June 2015.

Sampling Frame and Sampling Method

The sampling frame were the supervisors for the practical students from six different program under the faculty of Business Management in UiTM Kedah mainly BBA (Hons) Marketing (BM240/220), BBA (Hons) Finance (BM242/222), BBA (Hons) Human Resource Management (BM243), BBA (Hons) International Business (BM246/226), BBA (Hons) Islamic Banking (BM249/229), and lastly BBA (Hons) Business Economics (BM250). As for the sampling methods, the researcher had chosen disproportionately stratified sampling under the probability sampling. This method requires the

researcher to partition the sampling frame into relatively homogeneous subgroups that are distinct and nonoverlapping. Then the researcher chose the elements from each stratum according to its relative importance (Hair et al., 2012). For this study, the sample size were divided according to their relative importance between six program without considering the size of the stratum relative to the overall sample size.

Sample Size

The sample size for this study was 196 supervisors for the practical students. The sample size was determined by referring to Sekaran and Bougie (2010) since the population for this study is 358 supervisors. 358 questionnaires were distributed and the researcher manage to obtain 228 responses which amounted to 64% of respond rate.

Questionnaire Design

Questionnaires were constructed based on Practicum Evaluation Report by Industry (Report A), which is accordance to the university objectives and aligned with the Faculty of Business and Management practices. A five point Likert scale questionnaire was used to measure the attributes which are cognitive development outcome, skills development outcome and attitudinal values outcome. A pilot test was conducted to determine the reliability of the questionnaires since it was never being tested. The result for 30 sets of questionnaires indicated that all the variables are reliable with the Cronbach alpha value more than 0.8.

Data Analysis Method

The researcher used both SPSS and Smart PLS software as the data analysis method for this study. SPSS were used to analyze the demographic part and to determine the frequency and descriptive analysis. While Smart PLS was used to analyze the model validity, discriminant validity, path coefficient by using bootstrapping and reliability to test the hypothesis relationship between variables.

Data Analysis

Profile of Respondents

For the demographic, the result showed that 63.6% of the respondents were male and only 36.4% were female supervisors. Out of 228 respondents, 42.5% were executive level while the rest (57.5%) were non-executive level. The respondents came from various department where the highest were from finance and administrative department with the percentage of 18.4% respectively. On the other hand, the lowest will be from the department of economic and strategic planning which resulted in only 4.4% of the overall result. 39.0 % of the respondents were from the private sector followed by government linked company with 34.6% and finally public sector which amounted to 26.3%. The industry where the respondents work also vary and the highest was in banking and financial industry with 23.2%, followed by hotel and tourism industry with 13.1% while the lowest was under the oil and gas industry which resulted in 2.6% of the overall analysis.

Assessment of Measurement Model Results

For the proposed research model (refer Figure 2), the PLS-SEM algorithm converged after four iterations which indicate that the researcher estimation is good, or in other words means that there is no abnormal issue with the data. Before examining the structural model, the reliability and validity of the latent variables must be identified. The indicator reliability and internal consistency reliability were used to analyse the reliability while convergent validity and discriminant validity were used to assess validity. The R^2 value of 0.641 indicates that approximately 64.1% variations in the dependent variable can be explained by the combination of the independent variables proposed in the model.

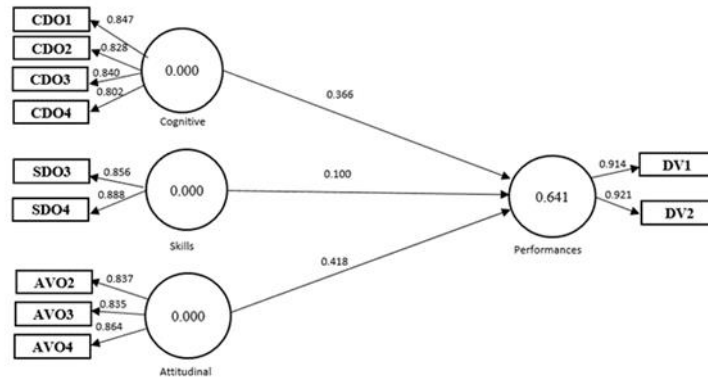


Fig 2: Proposed Research Model

Table 1 below provides the summary of the item loadings, the indicator reliability, the average variance extracted (AVE) and the composite reliability (CR) for each latent variable. Few items has been eliminated from the full model due to loadings less than 0.5 and violation of discriminant validity assessment. According to Ab Hamid, Sami and Mohmad Sidek (2017), Hair (2014) and Hulland (1999), the indicator reliability value of 0.4 is considered as acceptable, and 0.7 is preferred. As suggested by Hair et al. (2012), composite reliability (CR) is consider as a replacement to cronbach's alpha in assessing the internal consistency reliability in PLS-SEM. Hence, for this study the convergent validity is confirmed as all the AVE values are greater than 0.5 which is the suggested acceptable threshold value.

Constructs	Items	Loading	IR	AVE	CR
Performance	DV1	0.914	0.835	0.842	0.914
	DV2	0.921	0.848		
Cognitive	CDO1	0.847	0.718	0.688	0.898
	CDO2	0.828	0.686		
	CDO3	0.840	0.705		
	CDO4	0.802	0.643		
Skills	SDO3	0.856	0.732	0.761	0.864
	SDO4	0.888	0.789		
Attitudinal Values	AVO2	0.837	0.700	0.714	0.882
	AVO3	0.835	0.697		
	AVO4	0.864	0.746		

Table 1: Result Summary for Reflective Outer Model

Instrument Validity and Reliability

Next, to establish the discriminant validity as suggested by Fornell and Larcker (1981), the “square root” of AVE of each latent variable must be higher than the correlations among the latent variables. These values are shown in ‘bold’ numbers in the diagonal of Table 2. Based on the result shown in Table 2, the result indicates that discriminant validity is well established.

Constructs	[1]	[2]	[3]	[4]
[1] Attitudinal	0.845			
[2] Cognitive	0.715	0.829		
[3] Performance	0.742	0.735	0.917	
[4] Skill	0.629	0.711	0.622	0.872

Note: Diagonal represents the square root of Average Variance Extracted (AVE) while the other entries represent squared correlations

Table 2: Fornell-Larcker Criterion Analysis for Checking Discriminant Validity

In addition, the discriminant validity is also assessed through the examination of all the item loadings. According to Snell and Dean (1992), an item is said to have a cross loading problem if it loads highly in more than one factor and the difference between the loading values is less than 0.1. Table 3 it clearly shows no cross loading problem exist and thus discriminant validity can be assumed. Last but not least, Tenenhaus et al. (2005) suggested the global fit measures (GoF), is used to access the validity of a PLS model globally. However, recent study by Ravand and Baghaei (2016) stated that uses of GoF as a fit measure may not be suitable in PLS-SEM contexts and thus suggest that PLS-SEM model should depends on its predictive capability such as through the evaluation of its R2 measure.

Constructs	Items	Attitudinal	Cognitive	Performance	Skill
Performance	DV1	0.685	0.639	0.914	0.562
	DV2	0.676	0.709	0.921	0.580
Cognitive	CDO1	0.607	0.847	0.613	0.581
	CDO2	0.611	0.828	0.631	0.582
	CDO3	0.591	0.840	0.614	0.580
	CDO4	0.561	0.802	0.580	0.618
Skills	SDO3	0.539	0.630	0.509	0.856
	SDO4	0.558	0.612	0.573	0.888
Attitudinal Values	AVO2	0.837	0.639	0.608	0.519
	AVO3	0.835	0.548	0.596	0.504
	AVO4	0.864	0.624	0.673	0.567

Table 3: Cross Loading

Discussion and Recommendation

Discussion

Hypothesis	Path	Beta	SEBeta	t statistic	p value	Decision
H ₁	Cognitive -> Performance	0.366	0.077	4.754	0.000	Supported
H ₂	Skill -> Performance	0.100	0.057	1.763	0.040	Supported
H ₃	Attitudinal -> Performance	0.418	0.064	6.496	0.000	Supported

Table 4: T – Statistics of Path Coefficients (Inner Model)

Based on the results (refer Table 4), the connection between cognitive, skills and attitudinal values development outcomes and practical students' performance is significant as the value of t-statistics was 4.754, 1.763 and 6.496 respectively which is more than the cutoff value of 1.645. Thus, this analysis had answered the first research objective and question which is to determine the relationship between the attribute and whether these attributes have influences towards the practical students' performance during their industrial training. A positive beta coefficient showed that all of the attributes positively influences the dependent variables which means a positive change in the attribute will increase the level of practical students' performances and vice versa.

Attitudinal values outcome had the highest influences towards the practical students' performances by looking at the highest beta value 0.418 which also had answered the second objective and research question in this study. From this study, the researcher found that, even though cognitive and skills development outcomes were important however most supervisors think that the most crucial attribute a practical student need to possess is a good attitude such as discipline, punctuality, motivational level, able to work in team, willing to accept feedback and sense of responsibility. This result was similar with study done by Imran Khan, Han Dongping and Tauqir Ahmad Ghauri (2014) and Milman (2002)

where they both agreed that attitude and working morale were the key sources to enhance practical students' performance in workplace.

Recommendation

From the result, the researcher strongly recommend the industrial trainees to increase their motivational level in completing the assigned task given by the organization. It is clear that eventhough skills gave impact towards the performance of the trainees from the viewpoint of the supervisor, however they are emphasizing more on the attitude. This is because, the industrial trainees with high attitude values were perceived to have brighter future and will be successful in their upcoming career path. Apart from that, the faculty can play their role by designing a program that emphasizes the important of good attitude in workplace. Trainees who potray good attitude and have high performance in industrial training will lead to higher chances to get employed. The university will benefits in term of high graduates employability rates which can attract potential students to enrol in the study programme. As for the future research, this study can be expend by looking from different categories of respondents for example different faculties or university in order to see the differences and make comparison between the result.

Acknowledgement

The researchers hereby acknowledge the support from University Teknologi Mara (UiTM) for providing a short term research grant that made the study possible and successful. (600-UITMKDH(PJL. 5/4/1/8/15)

References

- Ab Hamid M. R., Sami W. & Mohmad Sidek M. H. (2017). Discriminant Validity Assessment: Use of Fornell & Larcker criterion versus HTMT Criterion. *Journal of Physics: IOP Conference Series* 890. doi :10.1088/1742-6596/890/1/012163.
- Bratton, J. (2007), "Work and Organizational Behavior". New York: Paul Grave Mac Millan
- Course Information IBM 671, (2013). *Academic Program or Study Plan Faculty Business Management*, Universiti Teknologi MARA, Shah Alam.
- Erni bte Tanius (2015). Business' students industrial training: Performance and employment opportunity. *International Journal of Scientific and Research Publications*. 5(5).
- Gibson, D.C. (2001). Communication Faculty Internship. *Public Relations Review*, 27, 103-117.
- Hair, J. F., Sarstedt, M., Ringle, C. M. & Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the Academy of Marketing Science*, 40(3), 414-433.
- Hair J. F., Hult G. T. M., Ringle C. & Sarstedt M. (2014). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* , Los Angeles: SAGE Publications, Incorporated.
- Hasbullah, H. & Sulaiman, S. (2002). Industrial internship programme at Universiti Teknologi Petronas – a collaboration strategy that enhanced students' soft skills in the ever-changing technology: *Proceedings of International Conference on Engineering Education*, August 18-21, Manchester, U.K, pp. 1-5.
- Hogg, M.A., and Graham & Vaughan, G.M. (2005). *Social Psychology* (6th ed.), Prentice Hall, Pearson.
- Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: a review of four recent studies. *Strategic Management Journal*, 20(2), 195–204.
- Imran Khan, Han Dongping & Tauqir Ahmad Ghauri (2014), Impact of Attitude on Employees Performance: A Study of Textile Industry in Punjab, Pakistan. *World Applied Sciences Journal* 30 (Innovation Challenges in Multidiciplinary Research & Practice): 191-197, ISSN 1818-4952 © IDOSI Publications.
- Jamaludin Jalani, S. Mashori, R. Norjali & A.S. Sadun. (2016). Preliminary investigation of the practicality of an industrial training for engineering technology program-industries view. *ARNP Journal of Engineering and Applied Sciences*, 11(11).

Junaini, N. S., Seyed Fadzir, Sy. F., Sidi, J., Ahmad Khairi, M.J. & Mohamed Othman, R. (2008). Harnessing university-industry collaboration in Malaysia through industrial training: *Proceedings of the 3rd International Conference Information and Communication Technology*, 1-5. Engineering Education (ICEED), IEEE. doi:10.1109/ICEED.2009.5490620.

Lam, T. & Ching, L. (2007). An exploratory study of an internship program: The case of Hong Kong students. *International Journal of Hospitality Management*, 26(2), 336-351.

Maertz, C. P., Stoeberl, P. A. & Marks, J., (2014). Career Development International Building successful internships: lessons from the research for interns, schools, and employers Building successful internships: lessons from the research for interns, schools, and employers. *Career Development International Education*, 19(6), 123-142.

Megat Mohd Nor & Suhaiza Ismail (2015). Effect of Industrial Training on Academic Performance: Evidence from Malaysia. *Journal of Technical Education and Training*, 7 (2).

Milman, A. (2002). Hourly employee retention in the relationship between Job Satisfaction and HR attraction industry: Research from small and medium- Practices, an Empirical Research of Different Sectors sized facilities in Orlando, Florida, *Journal of Retail & of University Teachers in Pakistan, International Leisure Property*, 2, 40-51.

Mohammad Reza Hamzah (2011). Industry's Perception on the Competencies of Engineering Students through Practical Training from University Malaysia Perlis Perspective. *Paper presented at the International Conference on Engineering Education ICEE*, Madinah, Saudi Arabia, December 2011.

Neill, N.T. & Mulholland G. E., (2003). Student Placement: Structure, Skills and Support. *Journal of Education and Training*, 45(2), 89-99.

Nor'Aini Yusof & Siti Nur Fazillah Mohd Fauzi (2013). Students' Performance in Practical Training: Academicians Evaluation, *Procedia - Social and Behavioral Sciences* 93, 1275 – 1280.

Omar, M.Z., Kofli, N.T., Mat, K., Darus, Z.M., Osman, S.A., Rahman, M.N.A. & Abdullah, S. (2008). Employers' evaluation on attributes obtained during industrial training: *Proceedings of the 7th WSEAS International Conference on Education and Educational Technology (EDU'08)*, 259-263.

Rancangan Malaysia Kesepuluh (RMK-10) 2010. *Membangunkan dan Mengekalkan Modal Insan Bertaraf Dunia*. 5, 194-251, Unit Perancang Ekonomi, Jabatan Perdana Menteri, Putrajaya.

Robles, M. M. (2012). Executive Perceptions of the Top 10 Soft Skills Needed in Today's Workplace. *Business Communication Quarterly*, 75(4), 453-465. doi:10.1177/1080569912460400.

Ravand, Hamdollah, & Baghaei, Purya. (2016). Partial Least Squares Structural Equation Modeling with R. Practical Assessment, *Research & Evaluation*, 21(11).

Siti Aminah Osman, Muhamad Azry Khoiry, Norinah Abd. Rahman, Ashrani A. Abd. Rahni, Mohd Radzi Abu Mansor, Darman Nordin & Suhana Johar (2016). The effectiveness of industrial training from the perspective of students of the civil and structure engineering department. *Journal of Engineering Science and Technology*, 1-12.

Snell, S.A. and Dean, J.W. (1992). Integrated Manufacturing and Human Resource Management: A Human Capital Perspective. *The Academy of Management Journal*, 353 (3), 467-504.

Sekaran, U., & Bougie, R. (2010). *Research methods for business: A skill-building approach* (5th ed.). Haddington: John Wiley & Sons.

Tenenhous M., Esposito Vinzi, V., Chatelin Y. M., & Lauro, C., (2005). *PLS Path Modeling*. Computational Statistics & Data Analysis, 48, 159-205.

Wallace, R.G., A (2002). Sandwich year can seriously damage your chances of obtaining a poor degree. *Presented at ASET European Conference*, Cambridge.

Woon, L.F., Abd Karim, Z.A. & Juhl, S.K., (2007). Examining a successful industrial training program model: inter-relationship among the three main stakeholders: student, university and host company: *Proceeding of the 2nd Regional Conference on Engineering Education (RCEE)*, December 3-5, Malaysia, pp. 24-30.

Yorke, M., (2006). *Employability in higher education: What it is-what it is not*. York: Higher Education Academy.