International Journal of Asian Social Science
ISSN(e): 2224-4441/ISSN(p): 2226-5139
journal homepage: http://www.aessweb.com/journals/5007

AN ANALYSIS ON THE IMPLEMENTATION OF INDUSTRIAL TRAINING FOR MECHANICAL ENGINEERING STUDENTS IN UNITEN

Meenaloshini S[†]
Department of Mechanical Engineering, Universiti Tenaga Nasional (UNITEN), Kajang, Malaysia
Linda C
Department of Mechanical Engineering, Universiti Tenaga Nasional (UNITEN), Kajang, Malaysia
Zaimah H
Department of Mechanical Engineering, Universiti Tenaga Nasional (UNITEN), Kajang, Malaysia
Noor Zaimah M
Department of Mechanical Engineering, Universiti Tenaga Nasional (UNITEN), Kajang, Malaysia

ABSTRACT

This paper examines the implementation of industrial training programme for Bachelor of Mechanical Engineering in Universiti Tenaga Nasional. The main objective of industrial training is to expose students to the real working environment of an engineering profession. It is also believed that through the industrial training programme, industries can contribute towards enhancing the learning process of students. In addition, it helps the universities and industries to develop stronger links and collaboration between them such as in research and development.

Our experience shows that about 40% of the students carried out their industrial training in the manufacturing sector, 20% in power utilities, while the other 40% in other sectors such as oil and gas, service and maintenance, engineering consultancy, and automotive industry. Feedbacks for the host supervisors from the industries indicate that the students are very productive and efficient. Our assessment also shows that at least 90% of the students are excellent in accomplishing the industrial training programme. Feedbacks form faculty members who visited the students on site were also gathered and analyzed. Finally, this paper will also highlight some pertinent views and recommendations from the host companies for further improvement of the industrial training programme.

Keywords: Industrial training programme, Host company, Training schedule, Industry.

1. INTRODUCTION

The value of developing stronger links with industry in he current economic climate is being

† Corresponding author
ISSN(e): 2224-4441/ISSN(p): 2226-5139

realized more and more by higher education institutions. Increase input by employers in course development, placement and sandwich options in many degrees stems from increasing awareness that it must be mutually beneficial to bring academic and industry closer together.Industry can influence the learning of undergraduates to produce a potential workforce with the academic knowledge and flexivbility they will require. (Mat *et al.*, 2011) Students can learn first hand the type of demands which will be made on them when they enter the world of work and hence will be better prepared.

Industrial training is a form of "contested learning".Contested learning means ambiguity and conflict between what is espoused and what is practiced in either the workplace and /or the university or college classroom. Contested learning in industrial training reflects competing interest (economic, educational and personal) that are found in the actions and values of students , teaching staff or workplace supervisor. In the context of national reviews of vocational education and training, industrial training also need to be reexamined in terms of contested findings on policy, administration,workplace practice and evaluation of learning outcomes. (Norhazzah et al., 2012)

2. INDUSTRIAL TRAINING PROGRAMME IN UNITEN

Industrial training in UNITEN has been part of the Bachelor of Engineeirng programme since the commencement of the university itself. The main objective of the industrial training as per outlined by the board of the university is to expose students to various aspects of industrial training practices and ethics, to apply the training knowledge for final year project,to allow students to integrate theory with practises, to introduce students to industry and its work culture, to provide oppurtunity for students to work with industrial practitioners, to expose students to potential employers and to acquaint students with industry and its programme (Cannon and Arnold, 1998). The programme is designed to exposed students to various types of experience, not just technical, relating to their respective fields but also non-technical like administrative jobs as well.

3. INDUSTRIAL TRAINING PROCEDURE

Three months prior to the beginning of the new semester,students are required to apply on-line in order to do industrial training in the following semester.The application goes through a vetting process to determine if the student qualifies to enroll for industrial training. Once the qualified names are announced, the students will be required to obtain five copies of the verification letter to verify that they belong to UNITEN students. Together with the verification letter, the students send out their resumes to various companies in order to be accepted in for industrial training. Once they get accepted by a company, they go ahead and fill in the acceptance form to inform the university of their offer. Prior to acceptance of students by the company, a briefing session would be held to inform students on the etiquette at the host company, dress code and what is expected of them at the host company. In the meantime, students are required to apply for the CIDB green card which is to be carried along with them when they go into the industry. Students are required to obtain a CIDB green card prior to going into the industry. CIDB Green Card programme is the amalgamation of the personnel registration and a one-day "Safety and Health Induction Course for Construction Workers".

Once the students have undergone the course, they will be issued a construction personnel

registration card known as the CIDB green card. This card must be kept while working at construction sites. Without the Green Card, construction personnel's are not allowed into the construction sites.

4. AT THE HOST COMPANY

Once at the host company, students will be given a training schedule, well planned for 12 weeks, ranging from technical (on-site) to non – technical (administrative work). They are required to record their everyday activities, knowledge gained for the day in their logbook on a weekly basis. Their host supervisor will endorse the logbook from time to time. A visiting supervisor from UNITEN would be assigned to visit the students, get feedback from them on their performance, experience at the host company, to ensure valuable knowledge is obtained at the host company. The visiting supervisor needs to submit a report on student performance after interacting with the student.

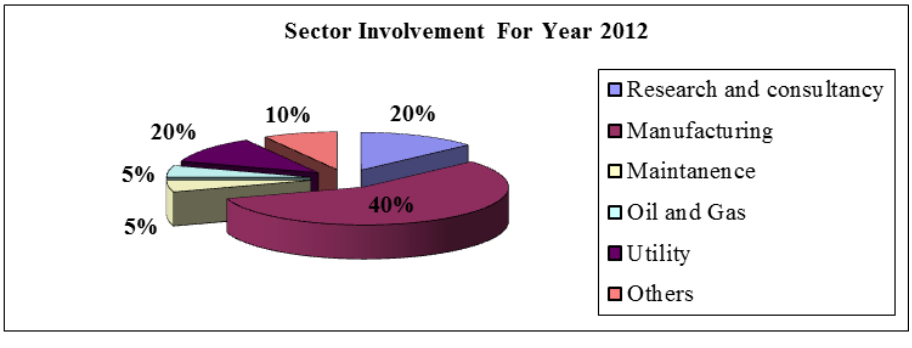
5. COMPLETION OF THE INDUSTRIAL TRAINING

Upon completion of the industrial training programme, students are required to submit a report to their respective visiting supervisors and also to carry out a presentation, which would then be evaluated by a panel of lecturers. A grade of PASS or FAIL would be issued at the end of the evaluation.

6. STUDENT DISTRIBUTION ACCORDING TO SECTORS AND REGION

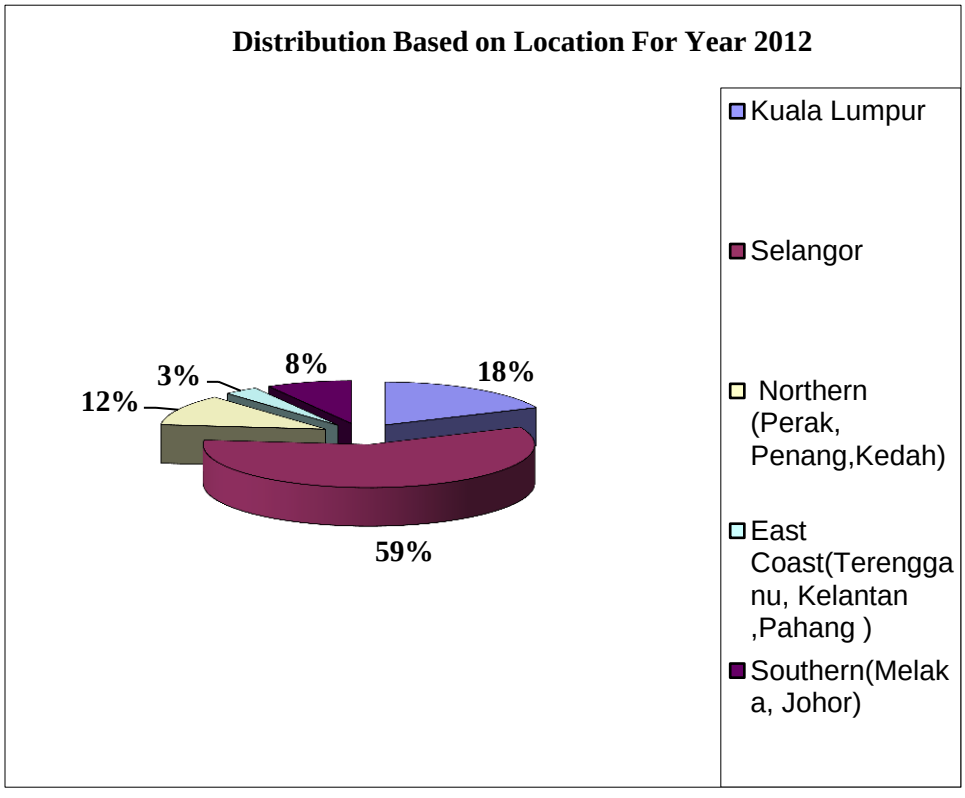
Our experience shows that about 40% of the students carried out their industrial training in the manufacturing sector, 20% in power utilities, while the other 40% in other sectors such as oil and gas, service and maintenance, engineering consultancy, and automotive industry as depicted in Figure 1.

Figure- 1. Student distribution Base on Sector for Year 2012



Most students choose to do their industrial training in Klang valley as the prospects of getting a placement in Klang valley is greater in comparison to other locations as shown in Figure 2.

Figure- 2. Student distribution Base on Location for Year 2012



7. PROBLEMS FACED DURING THE INDUSTRIAL TRAINING TENURE

Scheduling and organising an industrial training programme is a very difficult task. Full cooperation is needed from various parties, the student, the coordinators of industrial training, and the host company. Among the major problems faced include scheduling between university and workplace, mismatch between work and students' interest, lack of cooperation from employers and the issue of monitoring students' progress especially in the workplace. (Ramli *et al.*, 2001) Most of the time, keeping track of attendance of the trainee is the biggest issue.

At the University of North London, all students are given briefing at length on what to look out for, and how to make the most use of their industrial training. But despite this, the younger students often face difficulties. They have the double adjustments to make; both the realities of work in general and the application of specific professional skills. Often the traditional solution to this problem has been to give a student a project to do while on industrial training. This may cause the supervisor to complain that the student does not do much work useful to the organization. (Ramli *et al.*, 2001). Another problem to tackle will be the grading and the evaluation. The problems of assessing and grading industrial training performance are notorious due to disparate degrees of supervision, experience offered, and cooperation by the hosts, and problems of access for teaching staff. The solution should not be another theoretic essay divorced from the reality of the training place. It may be in the form of analytical report on the host. This involves the students in describing the activities that they are involved in on a day-to-day basis with the host. They should discuss on the significance of the activities done or seen with regard to this purpose, relevance and actual practice to the overall aims and objectives of the host organization and parent institutions. The

emphasis is on the significant activities. (Gillian and Susanne, 1996)

8. STUDENT EXPECTATIONS ON INDUSTRIAL TRAINING

A study carried out among UNITEN students found that overall students had moderate to high expectations on their host organizations work environment. Specifically, students expected other employees to be friendly and supportive of one another, to be concerned about and committed to their job; emphasizing good planning efficiency and getting the job done; and expected their physical environment to contribute to a pleasant work environment. On the other hand, the students expected their supervisors to use rules and pressures to keep employees under control and to be less supportive. They also expected their jobs to be low variety, change and new approaches, and having less clarity as to daily routine and how explicitly rules and policies are communicated. (Anthony, 1995)

9. HOST COMPANY EXPECTATIONS ON INDUSTRIAL TRAINING

In the perspective of a host company, they can actually benefit from the industrial training student. It provides them an opportunity to test and analyze the practices, policies and objectives of the organization through the critical but ultimately unhostile assessment by reasonable impartial and informed students. This is a major benefit of taking such students on placement in the first place. The industrial training experience well thought through and managed, should be symbiotic one between student, institutions and host organization and not a parasitical one as it sometimes appears to be (Paul *et al.*, 1997)

10. CONCLUSION

The essence of industrial training is sorting out what constitutes the real world. Reflection on what are real learning experiences involves students in socially reconstructing those elements that are contested in various contexts and by creating new alignments of meanings. In practice, this means personally resolving conflicts or by the identification of congruence among competing priorities, plans, policies and people.

REFERENCES

Anthony, J.B., 1995. Problem of practical placement, library career development. 3(3): 10-14.

Cannon, J.A. and M.J. Arnold, 1998. Student expectations of college internship programs. Journal of Education for Business, 73(4): 202.

Gillian, F. and T. Susanne, 1996. A competence approach to assessment of students placement. Education and Training, 38(1): 30-36.

Mat, K., M.Z. Omar, A.O. Siti, O.K. Norhisham, N.A.R. Mohd, J. Maslina and J. Nordin, 2011. The effectiveness of industrial training on UKM students. Procedia Social and Behavioral Sciences, 18(2011): 656–665.

Norhazzah, Y., M. Muhalim, A. Marina, M. Halina and M. Noorfa, 2012. Authentic assessment of industrial training program: Experience of Universiti Teknologi Malaysia. Procedia - Social and Behavioral Sciences, 56(2012): 724–729.

Paul, H., G. Kate and M.I. Heather, 1997. Developing work based transferable skills in a university environment. Journal of European Industrial Training, 21(2): 63-69.

Ramli, M.M., I. Sani and A. Abu, 2001. Tech _prep and school –to –work reforms in Malaysia: Meeting the global challenges. IVETA Annual Conference 2001, Montego Bay, Jamaica, July 31 – 2 August 2001.