



**UNIVERSITI PUTRA MALAYSIA**

**AN EFFECTIVE INDUSTRIAL PRACTICUM TRAINING PROGRAM FOR  
OPERATIONS MANAGEMENT STUDENTS IN MALAYSIA**

**SARIWATI MOHD SHARIFF**

**FPP 2007 25**



**AN EFFECTIVE INDUSTRIAL PRACTICUM TRAINING PROGRAM FOR  
OPERATIONS MANAGEMENT STUDENTS IN MALAYSIA**

**SARIWATI MOHD SHARIFF**

**DOCTOR OF PHILOSOPHY  
UNIVERSITI PUTRA MALAYSIA**

**2007**



**AN EFFECTIVE INDUSTRIAL PRACTICUM TRAINING PROGRAM FOR  
OPERATIONS MANAGEMENT STUDENTS IN MALAYSIA**

**By**

**SARIWATI MOHD SHARIFF**

**Thesis Submitted to the School of Graduate Studies, Universiti Putra  
Malaysia, in Fulfilment of the Requirements for the Degree of  
Doctor of Philosophy**

**August 2007**



## DEDICATION

This thesis is dedicated to:

my children who have endured with patience in supporting my personal aspirations and ambition, namely: Sazreen, Azim, Sazwani, Abu, Juwairiyah and Aziz.

my late parents, in particular my late father, Mohd Shariff Bin Kembar who entrusted me to pursue life long learning to the highest level.

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirements for the degree of Doctor of Philosophy

**AN EFFECTIVE INDUSTRIAL PRACTICUM TRAINING PROGRAM  
FOR OPERATIONS MANAGEMENT STUDENTS IN MALAYSIA**

By

**SARIWATI BINTI MOHD SHARIFF**

**August 2007**

**Chairman: Professor Mazanah Muhamad, PhD**

**Faculty: Educational Studies**

The objective of industrial training is to provide students an exposure to the real working world. It has been generally assumed that students in industrial training will learn something in the organization; the roles and responsibilities in providing the practicum training are left solely to the industry; trainees are not demonstrating the intended skills; training evaluation lacks assessment on the trainees' learning outcomes and the practicum guidelines are inadequate. It is now a concern for the institution of higher education to know whether the industrial training program is effective for the students. Henceforth, the purpose of the study was to investigate on the factors of an effective industrial training program from the trainees' perspectives, and the learning processes in an effective training.



This study adopted the constructivist approach, focusing on the trainees' perspectives where they described in their own words, expressions and reflections on the practicum experiences based on realities at work. A qualitative methodology was used to seek in depth understanding on the trainees' experiences, and the researcher was the instrument in data collection. This study adopted in depth interview technique with Operations Management students from Faculty of Business Management of a local public university as participants for this study. Twelve participants were purposively selected by the Head of program and practicum advisors. Interviews were taped recorded and transcribed with accuracy. The validity and rigor of data analysis were assured through triangulation, members check and peers review, and researcher's bias and assumptions were declared in the study. The study found that there were five factors contributed to effective practicum training: host organization, roles of facilitator, learning curriculum, roles of trainee and learning. The study showed that trainees' motivation, readiness to learn, self directedness and their roles contributed towards effective practicum. Ten learning processes were identified: observation, doing, solving, social interaction, work situations, self learning, experience, reflections, feedback and evaluation. The trainees' practicum training was effective based on three learning outcomes: cognitive development in acquiring work knowledge, behavioral development in possessing job skills and work experience, and personal development in attaining attitudinal values and self actualization. This study concluded with: both host organization and trainee must be selective for practicum attachment; trainee's characteristics influenced their roles in practicum; practicum training served as informal

learning for students and that transfer of learning occurred at the work place; and a comprehensive practicum evaluation to measure the effectiveness of practicum. This study provided implications to the body of knowledge whereby five factors for effective practicum training program were: host organization, facilitator, trainee, institution and learning curriculum. As for implication to practice, industrial training guidelines and comprehensive practicum evaluation system needed to be established as a standard for an effective practicum. Recommendations were put forth to improve the industrial training program: to strengthen the practicum curricula structure and to establish training guidelines; to prepare the mindsets of the trainees before practicum attachment; to improve the training evaluation system; and trainees' welfare and compliances to the related legislations at work place.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia  
sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

**PROGRAM LATIHAN PRAKTIKUM INDUSTRI YANG BERKESAN UNTUK  
PELAJAR PENGURUSAN OPERASI DI MALAYSIA**

Oleh

**SARIWATI BINTI MOHD SHARIFF**

**Ogos 2007**

**Pengerusi: Profesor Mazanah Muhamad, PhD**

**Fakulti: Pengajian Pendidikan**

Objektif latihan industri adalah untuk memberi pendedahan kepada pelajar di dalam dunia pekerjaan. Andaian bahawa pelajar yang menjalani latihan industri akan mempelajari sesuatu dari organisasi, maka tanggung jawab dalam latihan industri diserahkan sepenuhnya kepada organisasi; pelatih pula kekurangan kemahiran kerja; penilaian latihan gagal menilai hasil pembelajaran kerana kepincangan garis panduan latihan; maka sudah sampai masa nya pihak institusi perlu menilai samada latihan industri itu berkesan kepada pelatih. Maka objektif kajian ini adalah untuk mendalami apakah faktor faktor yang menyumbangkan kepada latihan praktikum yang berkesan dan mengenalpasti proses pembelajarannya.

Kajian ini menggunakan pendekatan "*constructivist*" dari perspektif pelatih di mana pelatih sendiri yang membuat pernyataan dan perasaan, serta imbasan



pengalaman mereka di dalam latihan praktikum. Kaedah kajian kualitatif digunakan untuk memahami pelatih serta pengalaman mereka di tempat kerja; dan penyelidik adalah instrumen kajian. Kaedah temubual terperinci dikendalikan dimana pelatih dipilih secara “*purposive*” dari program Pengurusan Operasi, Fakulti Pengurusan Perniagaan dari sebuah institusi pengajian. Pemilihan dua belas peserta kajian ini adalah berdasarkan pelajar yang terpilih oleh Ketua Program dan penasihat praktikum. Sesi temubual terperinci dirakamkan dan transkripsi dibuat dengan teliti. Kesahihan dan ketepatan data adalah terjamin dengan kaedah “*triangulation, members check, peers review*” dan juga penyelidik telah mencatatkan terdahulu andaian di dalam kajian nya.

Hasil kajian menunjukkan lima faktor menyumbangkan kepada praktikum yang berkesan ia itu: hos organisasi, peranan fasilitator, kurikulum pembelajaran, peranan pelatih dan proses pembelajaran. Penemuan kajian juga menunjukkan motivasi pelatih, kesediaan belajar, pembelajaran sendiri serta peranan pelatih menyumbangkan kepada latihan praktikum yang berkesan. Terdapat 10 proses pembelajaran yang dikenalpasti ia itu: pengamatan, pelaksanaan tugas, penyelesaian masalah, interaksi dengan rakan kerja dan budaya kerja, situasi kerja dan persekitaran, proses imbasan dan pengalaman, pembelajaran sendiri, maklumbalas dan penilaian. Latihan industri adalah berkesan berdasarkan tiga hasil pembelajaran dari: pembangunan kognitif dengan perolehan pengetahuan kerja, pembangunan fizikal dengan kemahiran dan pengalaman kerja, dan pembangunan diri seperti penerapan nilai nilai kerja serta perolehan kepuasan diri.

Rumusan kajian menunjukkan hos organisasi dan pelatih perlu memilih penempatan praktikum yang bersesuaian; ciri ciri pelatih mempengaruhi peranan mereka di dalam latihan praktikum; latihan praktikum adalah pembelajaran informal untuk pelajar dan penerapan pembelajaran terzahir di tempat kerja dengan perubahan positif dan pembangunan diri pelatih; dan penilaian praktikum yang menyeluruh untuk keberkesanan latihan praktikum. Implikasi kajian kepada bidang keilmuan menunjukkan lima faktor menyumbangkan kepada latihan praktikum yang berkesan, ia itu: hos organisasi, fasilitator, pelatih, institusi dan kurikulum pembelajaran. Implikasi kepada praktis pula, keperluan garis panduan latihan praktikum dan sistem penilaian sebagai piawaian latihan praktikum yang berkesan. Dengan hasil kajian ini, beberapa cadangan disarankan untuk penambahbaikan program latihan industri ia itu; memperkasa struktur dan kurikulum latihan praktikum dan penyediaan garis panduan latihan praktikum; penyediaan minda pelajar sebelum penempatan praktikum; penambahbaikan sistem penilaian latihan industri yang menyeluruh; penambahbaikan dalam pelaksanaan program latihan dan pematuhan kepada perundangan berkaitan dengan pekerjaan di tempat kerja.

## ACKNOWLEDGEMENTS

### **“In the Name of Almighty God and the Most Compassionate One”**

Five years through time, patience and perseverance, sacrifices and faith, together with the trust from my thesis chairman and the committees, and all the people whom have directly and indirectly supporting me, this thesis is finally completed with God's Will.

I am mostly indebted to my beloved thesis Chairman, Professor Dr. Mazanah Muhamad for her valuable time, dedication, patience, earnest support and her endurance in supporting me throughout the study. Her kindness truly shows, her thoughts and deeds reflect professionalism, and I cherish all those moments with her.

My special thanks and deep gratitude to the thesis committees, Associate Professor Dr. Jegak Uli, who is my academic advisor since the first day I stepped my foot in Universiti Putra Malaysia in 2001, and Dr. Shamsuddin Ahmad for their valuable guidance, trust, support and understanding in assisting me to complete my studies and specifically this dissertation.

Many thanks go to the professors who have taught me in the Department of Extension Education and Professional Studies for their valued contributions namely: Datuk Professor Dr. Rahim Sail, Y.M. Dr. Raja Ahmad Tajuddin Shah, Professor Dr. Aminah Ahmad, Professor Dr. Azimi Hamzah, Professor Dr. Maimunah Ismail and also all those whose names are too many to mention but they will be cherished in my heart. Special thanks go to the Viva

Committees, Professor Dr. Abu Daud Silong, Associate Professor Dr. Wan Zah Wan Ali and Puan Rusinah Joned and the external examiner who have given constructive feedback and comments to improve the thesis. Thanks also to the staff of the Graduate School Office for their support to this end.

I am indebted to Universiti Teknologi MARA for recruiting me as their academic staff in 2000, and approving my part time pursuit for this study. I would like to express my sincere and deepest thanks to my peers in the Faculty who inspired and motivated me throughout this study, especially Associate Professor Inayah Khalid, Associate Professor Dr. Roshidi Hassan, Dr. Rohana Kamaruddin and Md. Nasarudin Hussin.

Thanks to the students whom are involved in the study. Last but not the least, there are no words to describe my thanks for the love and sacrifices from my children, and the blessings from my parents before their demise. I also hoped that my children and grandchildren will be inspired to pursue their studies and follow my footsteps one day. Finally, I seek most humble apologies if I have offended in any way by words, deeds or acts through all these years. My doctoral study in UPM, Serdang was indeed a journey of rich adult learning experience.

Amin, May God Bless You Always and Forever.



I certify that an Examination Committee has met on to conduct the final examination of Sariwati Binti Mohd Shariff on her degree of Doctor of Philosophy thesis entitled “Effective Industrial Practicum Training For Operations Management Students” in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the candidate be awarded the relevant degree. Members of the Examination Committee are as follows:

**Rusinah Joned**

Associate Professor  
Faculty of Educational Studies  
Universiti Putra Malaysia  
(Chairman)

**Abu Daud Silong, PhD**

Professor  
Faculty of Educational Studies  
Universiti Putra Malaysia  
(Internal Examiner)

**Wan Zah Wan Ali, PhD**

Associate Professor  
Faculty of Educational Studies  
Universiti Putra Malaysia  
(Internal Examiner)

**Rosemary S. Caffarella**

Professor  
Faculty of Graduates Studies  
Universiti Putra Malaysia.

---

**HASANAH MOHD GHAZALI, PhD**

Professor/ Deputy Dean  
School of Graduates Studies  
Universiti Putra Malaysia

Date:



This thesis submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee are as follows:

**Mazanah Muhamad, PhD**

Professor  
Faculty of Educational Studies  
Universiti Putra Malaysia  
(Chairman)

**Jegak Uli, PhD**

Associate Professor  
Faculty of Educational Studies  
Universiti Putra Malaysia  
(Member)

**Shamsuddin Ahmad, PhD**

Lecturer  
Faculty of Educational Studies  
Universiti Putra Malaysia  
(Member)

---

**AINI IDERIS, PhD**

Professor/ Dean  
School of Graduates Studies  
Universiti Putra Malaysia

Date:



## DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UPM or other institutions.

---

**SARIWATI MOHD SHARIFF**

Date:

## TABLE OF CONTENTS

	<b>Page</b>
<b>DEDICATION</b>	<b>ii</b>
<b>ABSTRACT</b>	<b>iii</b>
<b>ABSTRAK</b>	<b>vi</b>
<b>ACKNOWLEDGEMENTS</b>	<b>ix</b>
<b>APPROVAL</b>	<b>xi</b>
<b>DECLARATION</b>	<b>xii</b>
<b>LIST OF FIGURES</b>	<b>xvii</b>
<b>LIST OF ABBREVIATIONS</b>	<b>xviii</b>
<b>CHAPTER</b>	
<b>I INTRODUCTION</b>	<b>1</b>
Background of Study	1
The Importance of Industrial Training Program	4
Issues in Industrial Training Program	9
Industrial Training Program	14
Statement of Problems	17
Purpose of Study	21
Research Questions	21
Significance of Study	22
Limitations of Study	23
Definitions of Terms	24
<b>II LITERATURE REVIEW</b>	<b>28</b>
Introduction	28
The Gap between Graduates Skills and Employers Needs	28
Industrial Training Program	33
Industrial Training	33
The Importance of Industrial Training Program	35
Factors for an Effective Industrial Training	37
Roles of Good Facilitator	38
Training Objectives	39
Training Program – OJT	41
Authentic Tasks and Activities	42
Problem Solving	43
Social Context and Culture	43
Situational Context and Work Environment	45
Feedback	45
Opportunities for Experience	46
Evaluation System	47





Learning in Industrial Training	49
Roles of Trainees in Industrial Training	49
Learning	49
Constructivist Approach	54
Learning in Observation	55
Learning in Doing Authentic Tasks and Activities	56
Learning in Problem Solving	56
Learning in Social Context and Culture	57
Learning in Situational Context and Work Environment	57
Self Directed Learning	58
Learning through Feedback	58
Learning through Experience	59
Learning in Reflections	60
Learning Curriculum	62
Learning Outcomes	64
Evaluation of Industrial Training	67
Related Studies	68
Summary of the Chapter	73
Conceptual Framework of the Study	75
<b>III RESEARCH METHODOLOGY</b>	<b>81</b>
Introduction	81
Pilot Study	81
Design of Study	82
Selection of Participants	87
Data Collection and Analysis	93
Researcher as the Instrument	93
Personal in depth Interview	94
Transcription	100
Document Review	104
Data Management	105
Data Analysis	106
Validity and Reliability	110
Internal Validity (Credibility)	111
External Validity	113
Reliability	114
Researcher' Bias and Assumptions	115
Reporting of the Findings	116
Summary of the Chapter	117



<b>IV</b>	<b>FINDINGS, DISCUSSIONS AND SUMMARY</b>	118
	Introduction	118
	The Participants and Host Organizations	121
	Overview of Participants and Host Organizations	124
	Industrial Training Program	127
	Factors on Effective Industrial Training Program	127
	Host Organizations	135
	Roles of Facilitator	145
	Learning Curriculum	147
	Trainees Learning in Industrial Training	164
	Trainees	165
	Roles of Trainees	170
	Learning in Practicum Training	171
	Training Evaluation	197
	Evaluation System	198
	Evaluation of Industrial Training Program	199
	Learning In Self Evaluation	201
	Learning Outcomes	202
	Cognitive Learning Outcomes	202
	Behavioral Outcomes	203
	Self Development Outcomes	204
	Discussions	207
	Summary	216
	What are the Factors for an Effective Industrial Training?	216
	What are the Learning Processes in an Effective Industrial Training?	222
<b>V</b>	<b>CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS</b>	229
	Introduction	229
	Conclusions	229
	Implications	236
	Recommendations	239
	<b>BIBLIOGRAPHY</b>	250
	<b>APPENDICES</b>	
A	Summary of Literature Review on Training and Learning	259
B	Consent Letter	262
C	Interview Guide	263
D	Interview Notes	264
E	Tape List of Participants	265
F	Participants' Profile	266
G	Audit Trail	268
H	List of Categories / Themes	271
	<b>BIODATA OF THE AUTHOR</b>	277

## LIST OF FIGURES

Figure		Page
1	Learning and Activity Transition from Institution to Work place	31
2	Conceptual Framework for Effective Industrial Training	79
3	Learning in an Industrial Training Program	80
4	Framework for an Effective Industrial Training Program	238

## LIST OF ABBREVIATIONS

AGR	Association of Graduate Recruiters
CB	Consumer Banking
CGPA	Cumulative grade Points Average
CEO	Chief Executive Officer
ER	Employees Relations
FMM	Federation of Malaysian Manufacturers
GM	General Manager
HR	Human Resource
ICT	Information, Communication and Technology
IHE	Institutions of Higher Education
ISO	International Organization for Standard
MEF	Malaysian Employers Federation
MTEN	<i>Majlis Tindakan Ekonomi Negara</i>
NEAC	National Economy Action Committee
OJT	On the Job Training
OSH	Occupational Safety and Health
PMS	Performance Measurement System
PO	Purchase Order
PPC	Production Planning and Control
PPE	Personal Protective Equipment
SLSM	<i>Skim Latihan Sangkut Siswazah</i>
SOP	Standard Operating Procedure
UILC	University – Industry Linkage Committee
UK	United Kingdom



Research done in the West found that employers recruit intelligent and enthusiastic individuals who can plan, organize their works and interact well with others effectively. The top six employability skills seek by employers are namely: the ability to communicate when doing things (59%), the ability to cooperate and work with others (46%), organizing skills (23%), motivated (18%), have job specific skills (18%) and adaptability towards changing circumstances (17%) (AGR Report, 1995). These findings highlighted the job employability skills much sought by the employers are: practical competence (59%), personal qualities and attitudes (24%) and cognitive ability (17%) (Singh, 2005).

The Secretary Parliament, Ministry of Higher Education, Adham Baba called upon all graduates to have mindset and mentality change towards knowledge management and skills applications for the job market (Ministry of Education Press release, 2004). Graduates need to have a “first class” mentality and equip themselves with strong communication skills, competitive edge and excellent merits. Graduates need to possess added values in themselves while they are still in the university so as to face the fast changing world and move towards technology, communication and recently biotechnology. Fresh graduates need to prepare and equip themselves with right tools for the job market in view of the difficulties in getting jobs for the future.

A survey carried out on four thousand human resource managers across all industries in Malaysia on the reasons for not recruiting some of these

graduates revealed that 56% of the managers highlighted that graduates have poor command of English language, 36% said due to graduates' poor character, attitude and personality, 31% said that there is a mismatch of graduates' skills and job requirements, and 26% of the employers' feedback that the graduates have no demonstrated ability to solve problems. (Job Street.com., 2005).

The nation wide survey carried out in 2004 – 2005 by Malaysian Economic Planning Unit, the Prime Minister Department on 59,315 unemployed graduates reported 24,619 (42%) of these respondents were not working and 34,696 (58%) were working on part time or temporary basis on jobs that were not at par or equivalent to the graduates' qualifications. Sixty percent of these graduates stated that they had no working experience and 35% of them revealed that they were weak in the English language. These are the graduates' perceptions as to what hindered them from securing jobs (MTEN Report, 2006).

Universities today generate business graduates who are hardly trained in business operations. Graduates hold a compartmentalized view of the conduct of business as subjects and the present curricular program are taught in unconnected and unsynergistic manner (Singaraju, 2004). Local institutions of higher learning should attempt to develop programs that match future skills and knowledge requirements of businesses in the 21<sup>st</sup> century, and integrative learning processes that not only emphasized on functional

skills but also to inculcate communication skills, the ability to learn continuously and operational focus within the graduates.

### **The Importance of Industrial Training Program**

One of the key issues pertinent to graduates not being able to meet the job market requirements is the lack of job skills, competence and lack of experience among the graduates. Today's competitive business environment places demands on graduates that cannot often be provided with the academia (Neumann and Banghart, 2001). There are genuine needs to establish industry-university partnerships, meaning that business and education must cooperate to create more real world opportunities for students for practice. University graduates need training and exposure to develop their psychomotor skills, behavioral skills and cognitive skill. Training in the form of industrial attachment at work place or practicum provides exposures for these students to the real work settings and business world. Industrial training is for skills and development while education is for life; training involves learning by doings, while education is learning by thinking, and development involves learning and thinking, doing and feeling (Garavan, 1997).

Attention has now focused on the importance and the need for industrial training program that develops students to equip them with some basic work exposure and job skills while they are still in the institutions. Students should be initiated into both practical training and reflection grounded in real experiences rather than remaining conceptual, and making meanings

attributed to all facets of education, training and work, thereby enhance professional practice (Hackett, 2001). Education is viewed as a prerequisite for a job because it certifies the individual's ability and qualifications, but training develops the competence, mastery learning, proficiency, work skills, accountability, efficiency, attitudes, values – these are attributes for effective performance in a work situation (Hackett, 2001).

The Malaysian Employer Federation (MEF) Executive Director, Shamsuddin Bardan sought the Malaysian government to provide more training programs or schemes to upgrade skills and knowledge for the local Malaysian workforce in order to reduce dependency on foreign labor in particular the construction industry (Bardan, 2005). MEF had proposed to the Prime Minister department to enforce all academic programs offered in public universities to have compulsory industrial training. He hoped that this proposal will be a reality as there are only few academic programs that call for industrial training. He stated that those whom had undergone industrial training had reaped valuable benefits as they have understood and experienced in the working world.

Graduates that have undergone industrial trainings have better chance of job employability due to work exposure and experience gained in their industrial training (Bardan, 2005). Past research impact study on sandwich or placement training has shown that there is a definite correlation between graduates with work experience and early job employability (Neill and Mulholland, 2003).





The most effective learning and developing student's competence occurs within a specific, natural work place where there are clearly visible models of application involving theory, skills and attitudes (Cornford and Athanasou, 1995). Formal education typically takes place in classrooms and involves transfer of knowledge through the use of formal methods such as lectures and discussions. Students learn theories, concepts, and cognitive skills (Dymock and Gerber, 2002) but the acquisition of skills and competencies are slacking and are usually not the intended learning outcomes (Garavan, 1997). There is a need for both university learning for disciplinary knowledge and on the job training for practical knowledge and that neither of these is sufficient on its own (Maistre and Pare, 2004). We need to help students move from the general (book knowledge) to the particular (real work settings, clients) as they move from the university to actual practice situations.

The industrial training program is important in the academic structure to provide students with practical exposure, training, jobs skills and work experience as these are only available at the real work place in the organizations. The earlier background scenarios have indicated that graduates lack of trainings, lack of job skills and no work experience; thus these emphasized the genuine need for industrial training program or practicum, internship or placement training for undergraduates. Given adequate and early training exposure or attachment in the industry to these undergraduates from the institutions will provide the opportunity for them to learn work skills, develop competence, gain work experience before they graduate and enter the job market (Knemeyer and Murphy, 2002). Further

