

Employers Survey on Student Learning Outcomes in Engineering, Science and Technology disciplines

Progress Report

by Charles Surya, EIE

3 February 2009



BACKGROUND

- This is a joint project between different departments offering programmes in **engineering-related fields**.
- Different engineering disciplines may have common employers.
- It is believed that synergism exists for various engineering-related departments will substantially improve the response rate from the employers.



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Objectives of the Employer Survey

- This exercise aims to collect information from the employers on:
 1. Their **expectations** of our graduates; and
 2. Their **evaluation** of the graduates' **key knowledge/skills/attributes**

Objectives of the Employer Survey(Cont.)

- The data collected help the departments to identify gaps between the stated programme outcomes and the actual graduate attributes as well as employers' expectation.
- Such information will be crucial in the quality assurance process for continual improvement in programme design

The Team

1. A Project Team is formed, comprising of representatives from 8 academic departments and the SAO.

Project Leader

EIE Prof Charles Surya

Team Members

AP Prof F G Shin

COMP Prof George Baci

CSE Dr Aron K Y Kwok

EE Dr Mark T K Ho

EIE Dr CK Leung

HTI Prof Daniel HK Chow
 ISE Mr Steve Frankland
 ME Prof S Q Shi
 SAO Mr Jack Kwan

Consultant

EDC Dr. K.P. Kwan

Project Management

MEDC Ms. Sally Yu

Other full-time project staff

Project Fellow (to be recruited)

Project Associate (to be recruited)

Milestones

Stage	Period	Deliverables	Task Performed
One	September -- October (2 months)	<ul style="list-style-type: none"> Identify programme objectives and the intended learning outcomes Identify employers 	<p><u>Completed</u></p> <ul style="list-style-type: none"> Programme objectives and learning outcomes of the 14 programmes Identify companies and contacts for the pilot study

Stage	Period	Deliverables	Task Performed
Two	1 Nov 08 – 30 Nov 08	<ul style="list-style-type: none"> •Literature survey of similar studies and instruments used •Design of questionnaires for both face-to-face interview and mass-mail survey 	<ul style="list-style-type: none"> •An on-going process •Finalization of the questionnaires; •Consulted with Dr K P Kwan of EDC for the design of the instruments.

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Stage	Period	Deliverables	Progress
Three	1 Dec 08 – 31 Jan 09 (2 months)	<ul style="list-style-type: none"> •Pilot study with 8 companies; •Study involves face-to-face interview; •Results will be used for fine-tuning of Instruments 	<ul style="list-style-type: none"> •On-going

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Stage	Period	Deliverables	Progress
Four	1 Feb 09 – 30 Sep 09	<ul style="list-style-type: none"> •Field work -- collection of data, for about 60-80 companies; •Analysis of data •Preliminary results dissemination 	<ul style="list-style-type: none"> • To start in February 2009

Stage	Period	Deliverables	Progress
Five	1 Oct 09 – 31 Dec 09	<ul style="list-style-type: none"> •Consolidation of findings •To formulate possible recommendations for Departments; •Report Writing; and dissemination of findings 	<ul style="list-style-type: none"> • To start in October 2009

THE PROGRESS

- Project Management Task contracted to MEDC and is managed by Ms Sally Yu
- Appointment of other Project Staff
According to the Project Budget, a Project Fellow and a Project Associate, for a period of 12 – 14 months, will also be appointed.

REPORT OF PILOT STUDY

Methodology and Instruments

Two instruments will be used in the Study: (1) face to face interview; and (2) questionnaire survey form.

Input from each Department has been sought for the design of the questionnaire

As each department provides a list of employers for completing the questionnaire

Interview Questionnaire

1. Introduction

2. Desirable graduate outcomes and attributes

- What are the most important knowledge, skills or attributes you look for when recruiting a fresh graduate employee in your company?
- What do you expect them to be able to do/perform when they first take up the post?

3. Competence and attributes of PolyU graduates

- Based on your experience of working with PolyU graduates from the programme in the past, what do you think are the strengths of our graduates/programme?
- What are their weaknesses?
- How do you compare graduates of our programme with those from other universities in Hong Kong? From overseas or Mainland China? In what aspects are they superior to or weaker than their counterparts elsewhere?

Preparing graduates for the profession

- What improvements could be made by the programme to better prepare our graduates to work in your company?

Other comments or suggestions

Dept.	Employer Company	Instru-ment(s)	Progress
AP	Bureau Veritas Hong Kong Ltd,	Question naire Survey	•Expect to receive the completed questionnaire survey form by 6 February
COMP	Hong Kong Monetary Authority	Question naire Survey	•On-going

Dept.	Employer	Instru- ment(s)	Progress
CSE	Gammon Constructi on	•Questio nnaire Survey •Face-to- face interview	•Received one completed questionnaire survey form from Gammon •Conducted a face-to- face interview with Mr Francis Sin, Senior Safety Manager of Gammon Construction on 14 Jan.
EE	CLP Engr. Ltd	Question naire Survey	•Expected to receive completed form by 30 Jan 09.

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Dept.	Employer	Instru- ment(s)	Progress
EIE	Automatic MFG. LTD.	•Questio nnaire Survey •Face- to-face interview	•Received 4 completed forms covering EIE programmes •Conducted face-to-face interview with Mr John Mok and Dr K M Chow, the Chairman general manager of the company on 9 Jan 09.
HTI	Medical Technolo gies Ltd	Question naire Survey	•Expect to receive completed questionnaire form(s) by 6 Feb 09.

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Dept.	Employer	Instru- ment(s)	Progress
ISE	G.E.W. Corp. Ltd.	Question naire Survey	•Expect to receive completed questionnaire form(s) by 9 Feb 09.
ME	Dah Cheong Hong	Question naire Survey	•Received two completed questionnaire survey forms from Dah Cheong Hong on 23 Jan




	Graduate's performance				Valid cases	Mean
	Usually exceeds	Generally meets	slightly below	Fails to meet		
Apply knowledge of science, technology, engineering and management	25.0	50.0	25.0	0.0	4	3.00
Design and conduct experiments, as well as to analyse and interpret data	0.0	75.0	25.0	0.0	4	2.75
Design a system, component of process to meet a desired need within realistic constraints	0.0	50.0	50.0	0.0	4	2.50
Function on multidisciplinary teams	25.0	75.0	0.0	0.0	4	3.25
Identify, formulate, and solve problems related to professional practice	0.0	50.0	50.0	0.0	4	2.50


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	Usually exceeds	Generally meets	slightly below	Fails to meet	Valid cases	Mean
Understand professional and ethical responsibility	0.0	100.0	0.0	0.0	4	3.00
Communicate effectively	25.0	50.0	25.0	0.0	4	3.00
Understand the impact of science and technology in a global, environmental and societal context	0.0	75.0	25.0	0.0	4	2.75
Recognise the need for, and engage in lifelong learning	0.0	50.0	50.0	0.0	4	2.50
Be aware of contemporary issues	0.0	75.0	25.0	0.0	4	2.75



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	Usually exceeds	Generally meets	Is slightly below	Fails to meet	Valid cases	Mean
Use the techniques, skills and modern information and technology tools necessary for professional practice	25.0	75.0	0.0	0.0	4	3.25
Ability to communicate effectively in English (written and oral)	25.0	75.0	0.0	0.0	4	3.25
Ability to communicate effectively in Chinese (written Chinese, Cantonese and/or Putonghua)	25.0	75.0	0.0	0.0	4	3.25


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	Usually exceeds	Generally meets	Is slightly below	Fails to meet	Valid cases	Mean
Creativity and innovation	0.0	25.0	75.0	0.0	4	2.25
Critical and analytical thinking	25.0	0.0	75.0	0.0	4	2.50
Sense of entrepreneurship	0.0	75.0	25.0	0.0	4	2.75
Global outlook	25.0	75.0	0.0	0.0	4	3.25
Interpersonal skills	25.0	75.0	0.0	0.0	4	3.25
Leadership skills	0.0	25.0	75.0	0.0	4	2.25
Generic information and technology knowledge and skills	25.0	75.0	0.0	0.0	4	3.25
Positive attitude towards work	25.0	50.0	25.0	0.0	4	3.00


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	Usually exceeds	Generally meets	Is slightly below	Fails to meet	Valid cases	Mean
Ability to work independently with minimal supervision	25.0	50.0	25.0	0.0	4	3.00
Sense of responsibility and commitment to work	0.0	75.0	25.0	0.0	4	2.75
Flexibility and adaptability according to company needs	25.0	75.0	0.0	0.0	4	3.25
Self initiative and motivation	25.0	50.0	25.0	0.0	4	3.00
Honesty	50.0	50.0	0.0	0.0	4	3.50
Ability to work according to schedule and to meet deadlines	25.0	75.0	0.0	0.0	4	3.25