Programme Exit Survey (PES) Report

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Abstract: The purpose of this Programme Exit Survey (PES) was to provide data to gauge perceptions of various aspects of programmes and services offered and to identify areas where improvements may be needed in the Department of Electronic Engineering (Computer) JKE, Politeknik Kota Kinabalu (PKK). This PES was conducted on 21 final semester students, graduating from Diploma in Electronic Engineering (Computer) (DTK). They were the second Cohort whose intake was in December 2010. The survey questionnaire had five main sections: respondents' profile; assessment of overall quality; assessment of skills and knowledge; assessment of Lecturers and Academic Advisor; and assessment of academic resources and facilities. All the data were analysed using the Statistical Product and Service Solutions (SPSS) software version IBM SPSS Statistics 19.0. For the assessment of the overall quality, attribute for teaching and learning experience was rated 100% with "excellent", "very good" and "good". Skills and knowledge section was evaluated by relating the statements with nine items as stated in the Programme Learning Outcomes (PLO). All the PLOs' were marked at least "good" by 98% of the students. Assessment on lecturers and academic advisor were rated 33.3% as "excellent" and 57.1% as "very good". In terms of academic resources and facilities, the access to Wi-Fi had the highest unsatisfactory concerned from the respondent whereby 28.6% rated the item as "weak".

Keywords: overall quality, skills and knowledge, lecturer and academic advisor, academic resources and facilities

I. Introduction

1.1 Programme exit survey (PES)

PES is a method of collecting information on the quality of diploma education from the perspective of graduating students upon the completion of their diploma programme. This report refers to an indirect measurement method by way of self-evaluation based on individual perception for the assessment of PLO. PLOs are the specific statements of graduates' knowledge, skills and attitudes acquired at the end of the programme as evidence for the programme objectives achievements. This PES was conducted to assess the graduate students' satisfaction and perceptions about various aspects of their academic experiences. 100% of the final semester students from the DTKprogramme had participated in the survey.

The main objectives of this PES are to:
1) Determine the students perception in their attainment on the overall quality of learning and teaching in PKK;
2) Determine the students self-assessment of knowledge, skills and soft skills achievement after going through the PLOs of the programme;
3) Evaluate the students' opinion towards contributions of Lecturer and Academic Advisor system implemented based on Outcome Based Education (OBE) approach;
4) Evaluate the students' opinion towards academic resources and facilities provided in PKK.

1.2 Programmelearning outcomes (PLO)

OBE is an educational philosophy that believed that educational assessment should recognise and reflect progress made by individual students. PLOs are statements that describe what graduates are expected to know or be able to do on graduation. In the curriculum for DTKprogramme it has been specified that there are nine (9) PLOs' to be acquired by the graduates upon graduation. The nine PLOs are as follows:
 i. Apply knowledge of mathematics, science and electronic fundamentals to electronic engineering principles.
 ii. Troubleshoot, repair and do maintenance for electrical and electronics equipment with specialization in computer.
iii. Communicate effectively with the engineering community and the society at large.
iv. Demonstrate critical thinking in providing effective solution to related computer and electronic engineering problems.
 v. Demonstrate awareness and consideration for societal, health, safety, legal and cultural issues and the consequent responsibilities, taking into account the need for sustainable development.
vi. Engage in professional development and independent acquisition of new knowledge and skill.

vii.   Recognize the need for entrepreneurship.
viii. Demonstrate an understanding of professional ethics, responsibilities and norms of electrical and electronic engineering practices.
 ix.   Work independently or as a team member successfully, with a capability to be a leader.

II. Methodology

This survey involved 21 DTK students from June 2013 semester. Students were asked to fill up the PES questionnaires which were posted online and 100% of them responded. The respondents were required to evaluate and rate themselves based on 5-Likert Scale indicated below:

         1 = Weak
         2 = Average
         3 = Good
         4 = Very Good
         5 = Excellent

Student's satisfaction and acceptance level was determined from the scale. Excellent, Very Good and Good indication rate shows the students are satisfied with the item. While Average and Weak indication rate shows the item need some improvements and correction for the program.

This online survey was conducted on October 2013. The survey questionnaires were divided into five sections as follows:

i.   Section A: General Information
ii.   Section B: Overall Quality of Teaching and Learning
iii. Section C: Skills and Knowledge
iv.   Section D: Contributions of Lecturers and Academic Advisors
v.   Section E: Academic Resources and Facilities

The data collected in this survey was processed through Statistical Product and Service Solutions (SPSS) software version IBM SPSS Statistics 19.0.

The questionnaires were based on students' perception on teaching and learning in PKK, students' response on skills and knowledge related to PLO's, students attainment on the soft skills, students' rating for lecturers and academic advisors contribution, student's opinion towards academic resources, overall services and facilities in PKK. This assessment strategy was aligned with the Curriculum Development Cycle - "develop-implement-review" as required by the MQA in order to improve the quality of programme.

III. Result

The response from the students were analysed based on the following four criteria:

i.   Students' response towards the Overall Quality
ii.   Students' response on Skills and Knowledge
iii. Students' ratings for Lecturer and Academic Advisor contributions
iv.   Students' opinion towards Academic Resources and Facilities

3.1 Section A: Profile

Table 1: Student's Gender

	GENDER	
	Male	Female
Qty	13	8
(%)	61.9	38.1

3.2 Section B: Overall quality

Overall quality was evaluated by relating the students experience with the teaching and learning environment in PKK. Two survey statements were given and the results were as follows:

Table 2: Overall quality rating

OVERALL QUALITY					
	Weak	Average	Good	Very Good	Excellent
What is your impression on the overall quality of curriculum; and teaching and learning at PKK?	0	0	3	12	6
(%)	0.0	0.0	14.3	57.1	28.6
To what extent has the quality of teaching and learning in PKK improved since you were here?	0	0	4	11	6
(%)	0.0	0.0	19.0	52.4	28.6

In short, an average of 100% of DTK students was satisfied with the knowledge they gained and agreed that they had understood the relevancy of the technological application during their studies in PKK.From the analysis on overall quality, with a mean score of 4.10≈4.14 (Good) and a standard deviation of 0.68, 100% of DTK students were satisfied with the overall quality for this program during their study in PKK based on the experience with the teaching and learning environment.

3.3 Section C: (Skills and Knowledge)
In Section C: (Skills and Knowledge) the statements have been classified under a particular PLO so that the data analysis can be done appropriately for accreditation purposes. The results can be used an indicator to show how well the students have acquired their skills and knowledge as required in the PLOs of the programme.

3.3.1 PLO 1 (Knowledge)
For PLO 1 (Knowledge), four statements were given and the results were as follows:

Table 3: PLO 1 Knowledge rating

SKILLS AND KNOWLEDGE					
PLO 1 (Knowledge)					
	Weak	Average	Good	Very Good	Excellent
I am able to apply knowledge of core discipline courses in my programme	0	0	2	13	6
(%)	0.0	0.0	9.5	61.9	28.6
I am able to apply knowledge of specialized courses in my programme	0	0	2	14	5
(%)	0.0	0.0	9.5	66.7	23.8
I am able to apply knowledge of elective courses in my programme	0	0	1	17	3
(%)	0.0	0.0	4.8	81.0	14.3
I am able to understand the technological applications relevant to my programme of study	0	0	2	11	8
(%)	0.0	0.0	9.5	52.4	38.1

In short, an average of 100% of DTK students was satisfied with the knowledge they gained and agreed that they had understood the relevancy of the technological application during their studies in PKK. With a mean score of 4.10≈4.29 and standard deviation of 0.56, this percentage is true and reflected the achievement of PLO1, asa large standard deviation isn't necessarily a bad thing; it just reflects a large amount of variation in the group that is being studied.

3.3.2 PLO 2 (Technical & Practical Skills)
For PLO 2 (Technical & Practical Skills), three statements were given and the results were as follows:

Table 4: PLO 2 Technical &practical skills rating

SKILLS AND KNOWLEDGE					
PLO 2 (Technical & Practical Skills)					
	Weak	Average	Good	Very Good	Excellent
I am able to apply information technology in my programme	0	0	1	14	6
(%)	0.0	0.0	4.8	66.7	28.6
I am able to demonstrate my practical skills effectively	0	0	2	13	6
(%)	0.0	0.0	9.5	61.9	28.6
I am able to use computing technology for applications in my programme	0	0	1	12	8
(%)	0.0	0.0	4.8	57.1	38.1

In conclusion for PLO2, 100% (21 respondents) of DTK students were satisfied and were able to make use of technical & practical skills they gained during their studies in PKK.

3.3.3 PLO 3 (Communication skills)
For PLO 3 (Communication Skills), three statements were provided and the results were as follows:

Table 5: PLO 3 Communication skills rating

SKILLS AND KNOWLEDGE					
PLO 3 (Communication Skills)					
	Weak	Average	Good	Very Good	Excellent
I am able to communicate effectively orally/visually (informal / formal / conversational / presentation)	0	0	4	12	5
(%)	0.0	0.0	19.0	57.1	23.8
I am able to communicate effectively in writing (writing reports and expressing ideas and opinions clearly and concisely)	0	0	2	15	4
(%)	0.0	0.0	9.5	71.4	19.0
I am able to use computing technology in communications	0	0	2	13	6
(%)	0.0	0.0	9.5	61.9	28.6

To conclude, with a mean score of 4.05≈4.19 and the standard deviation of 0.60, it can be said 100% of them were satisfied and were able to communicate effectively after completing their studies in PKK. As 0.60 standard deviation just indicates in average, the individual responses were a little over 0.6 point away from the mean.

3.3.4 PLO 4 (Critical thinking & problem solving skills)
For PLO 4 (Critical Thinking & Problem Solving Skills), three statements were given and the results were as follows:

Table 6: PLO 4 Critical thinking & problem solving skills rating

SKILLS AND KNOWLEDGE					
PLO 4 (Critical Thinking & Problem Solving Skills)					
	Weak	Average	Good	Very Good	Excellent
I am able to solve problems using methods, tools and skills related to my programme	0	0	2	13	6
(%)	0.0	0.0	9.5	61.9	28.6
I am able to think critically and logically	0	0	3	11	7
(%)	0.0	0.0	14.3	52.4	33.3
I am able to plan, organize and complete a task	0	0	3	15	3
(%)	0.0	0.0	14.3	71.4	14.3

It can be summarized that 100% (21 respondents) of DTK students were satisfied and were capable in critical thinking & problem solving skills which they had gained throughout their studies in PKK.

3.3.5 PLO 5 (Social skills and responsibilities)

For PLO 5 (Social Skills and Responsibilities), three statements were given and the results were as follows:

Table 7: PLO 5 Social skills and responsibilities rating

SKILLS AND KNOWLEDGE					
PLO 5 (Social Skills and Responsibilities)					
	Weak	Average	Good	Very Good	Excellent
I am able to understand the role of my work in relation to social or cultural issues	0	0	5	10	6
(%)	0.0	0.0	23.8	47.6	28.6
I am aware of the value of considering diversity and differences in cultures in my work	0	0	4	11	6
(%)	0.0	0.0	19.0	52.4	28.6
I am aware of the impact of my work in a social context	0	0	3	11	7
(%)	0.0	0.0	14.3	52.4	33.3

As a conclusion, with a mean score of 4.05≈4.19 and standard deviation of 0.71, it is true to state that 100% of the respondents were satisfied and aware of their responsibilities in social context; and were able to associate with community effectively which were influenced by the learning environment in PKK.

3.3.6 PLO 6 (Continuous learning & information management skills)

For PLO 6 (Continuous Learning & Information Management Skills), four statements were provided and the results were as follows:

Table 8: PLO 6 Continuous learning & information management skills rating

SKILLS AND KNOWLEDGE					
PLO 6 (Continuous Learning & Information Management Skills)					
	Weak	Average	Good	Very Good	Excellent
I am able to continuously learn new skills and knowledge	0	0	1	11	9
(%)	0.0	0.0	4.8	52.4	42.9
I am able to engage in continuous learning beyond the classroom	0	0	3	13	5
(%)	0.0	0.0	14.3	61.9	23.8
I am able to learn and apply new concepts	0	0	4	12	5
(%)	0.0	0.0	19.0	57.1	23.8
I am able to use information resources (databases, libraries, internet etc)	0	0	4	9	8
(%)	0.0	0.0	19.0	42.9	38.1

Based on the analyzed results, it can be stated that 100% of the respondents were satisfied and were able to learn new skills and gained new knowledge and used the information resources effectively after completing their studies in PKK.

3.3.7 PLO 7 (Management & entrepreneurial skills)

For PLO 7 (Management & Entrepreneurial Skills), two statements were provided and the results were as follows:

Table 9: PLO 7 Management & entrepreneurial skills rating

SKILLS AND KNOWLEDGE					
PLO 7 (Management & Entrepreneurial Skills)					
	Weak	Average	Good	Very Good	Excellent
I am able to build/develop my career upon completion of my studies	0	0	2	15	4
(%)	0.0	0.0	9.5	71.4	19.0
I am able to develop time management skills	0	0	3	13	5
(%)	0.0	0.0	14.3	61.9	23.8

With a mean score of 4.10 and standard deviation 0.58, it can be concluded as all 21 respondents were satisfied and do believe that their management & entrepreneurial skills were developed in PKK.Even with a 0.58 standard deviation, it just shows that the individual preferences in average were a little over 0.6 point away from the mean.

3.3.8 PLO 8 (Professionalism, ethics & moral)
For PLO 8 (Professionalism, ethics & moral), two statements were provided and the results were as follows:

Table 10: PLO 8 Professionalism, ethics & moralrating

SKILLS AND KNOWLEDGE					
PLO 8 (Professionalism, Ethics & Moral)					
	Weak	Average	Good	Very Good	Excellent
I am able to understand the professional and ethical responsibilities related to my work	0	0	2	13	6
(%)	0.0	0.0	9.5	61.9	28.6
I am aware of the importance of safety issues related to my work	0	0	1	15	5
(%)	0.0	0.0	4.8	71.4	23.8

As a conclusion for PLO8, each of the 21 DTKstudents were satisfied and understood the professional and ethical responsibilities and were aware of the importance of safety issues related to their work throughout their studies in PKK.

3.3.9 PLO 9 (Leadership &teamwork skills)
For assessment of the PLO 9 (Leadership &teamwork skills), four statements were provided and the results were as follows:

Table 11: PLO 9 Leadership &teamwork skillsrating

SKILLS AND KNOWLEDGE					
PLO 9 (Leadership & Teamwork Skills)					
	Weak	Average	Good	Very Good	Excellent
I am able to work with individuals from different backgrounds	0	0	2	9	10
(%)	0.0	0.0	9.5	42.9	47.6
I am able to work successfully as a member of a team	0	0	1	10	10
(%)	0.0	0.0	4.8	47.6	47.6
I am able to work successfully as a leader of a team	0	0	5	12	4
(%)	0.0	0.0	23.8	57.1	19.0
I am able to function in multidisciplinary teams	0	0	2	14	5
(%)	0.0	0.0	9.5	66.7	23.8

Even with an exception to one respondent, with a mean score of 3.95≈4.43 and standard deviation of 0.63, 100% of the students were satisfied and were able to work in a team successfully and capable of being a leader after completing their studies in PKK.

Therefore we can conclude for the nine (9) PLOs, with a mean score of 3.95≈4.43and standard deviation of 0.61, each of the respondents were satisfied and the PLOs targeted for them to be achieved, be equipped and holds were all successful.

3.4Section D: Contributions of lecturers and academic advisors

Responses from students towards the lecturers and academic advisors' contributions are summarized below. Graduates were asked to offer insights of encouragement given into the programme delivery process. Six attributes of encouragement were offered and the results were as follows:

Table 12: Contributions of lecturers and academic advisors rating

CONTRIBUTIONS					
Contributions of Lecturers and Academic Advisors					
To what extent did your lecturer/academic advisor encourage you to:	Weak	Average	Good	Very Good	Excellent
Set high expectations for learning?	0	0	2	12	7
(%)	0.0	0.0	9.5	57.1	33.3
Be an actively involved learner?	0	0	3	14	4
(%)	0.0	0.0	14.3	66.7	19.0
Show concern for student learning?	0	0	4	11	6
(%)	0.0	0.0	19.0	52.4	28.6
Provide feedback frequently and promptly?	0	0	4	11	6
(%)	0.0	0.0	19.0	52.4	28.6
Show concern for student learning?	0	0	2	12	7
(%)	0.0	0.0	9.5	57.1	33.3
Provide feedback frequently and promptly?	0	0	1	12	8
(%)	0.0	0.0	4.8	57.1	38.1

With a mean score of 4.05≈4.33 and standard deviation laid between 0.58 to 0.70, means most of the respondents were satisfied but expected further improvement from the lecturers as to be more student-centered learning.

3.5 Section E: Academic resources / facilities

In the education eco-system, academic resources/facilities were important in terms of educational hardware. The teaching and learning process would be greatly enhanced provided that there were sufficient resources/facilities for students to thrive academically. Table 13 shows the percentage of respondentsratings towards the sufficiency of resources/facilities at the PKK. Eleven statements of resources/facilities were given and the results were as follows:

Table 13: Academic resources/facilities rating

ACADEMIC RESOURCES/FACILITIES					
To what extent did Politeknik Kota Kinabalu provide you with the following resources/facilities?	Weak	Average	Good	Very Good	Excellent
Operation hours of the library	0	0	5	13	3
(%)	0.0	0.0	23.8	61.9	14.3
Access to databases and collections both physically and online in the library	0	0	10	9	2
(%)	0.0	0.0	47.6	42.9	9.5
Easy and responsive services of the HEP staff	0	1	7	13	0
(%)	0.0	4.8	33.3	61.9	0.0
Easy and responsive services of the counselling staff	0	0	7	14	0
(%)	0.0	0.0	33.3	66.7	0.0
Easy and responsive services of the library staff	0	0	5	15	1
(%)	0.0	0.0	23.8	71.4	4.8
Easy and responsive services of the administration staff	0	0	6	14	1
(%)	0.0	0.0	28.6	66.7	4.8
Access to Wi-Fi internet	0	6	9	5	1
(%)	0.0	28.6	42.9	23.8	4.8
Quality of computer labs	0	1	9	9	2
(%)	0.0	4.8	42.9	42.9	9.5
Quality of laboratories / workshops / kitchens	0	0	8	11	2
(%)	0.0	0.0	38.1	52.4	9.5
Quality of classrooms	0	3	8	8	2
(%)	0.0	14.3	38.1	38.1	9.5
Quality of sports and recreational facilities	0	3	10	7	1
(%)	0.0	14.3	47.6	33.3	4.8

According to the findings, more than 85% of the respondents were satisfied with all the statements. As a conclusion,85.7% of DTK students were satisfied with the academic resources/facilities provided during their study in PKK.

IV. Conclusion

The results of the survey indicated high considerable for Overall Quality of teaching and learning since 100% students rated as "very good", "good" and "adequate" measures of achievement for all the statements. Thus students were satisfied with the overall quality of teaching and learning in PKK.

Furthermore, all100% of the prospective graduates agreed that they had achieved the PLOs of the program. The data showed majority of the students have responded between "very good' to "good" scale in this Skills and Knowledge assessment.

In addition, in evaluating the prospective graduates' opinions towards the contributions of lecturers and academic advisors system implemented showed that they were satisfied with the lecturers/academic advisors. Result showed that 100% of graduates have rated very "good", "good" and "adequate" scale.This also supports the implementation of OBE in PKK which emphasized for student-centred learning.Finally 85.7% prospective graduates were satisfied with the academic resources and facilities provided.

In short, this exit survey was found to be an essential tool in helping to identify the areas that needs to be improved in terms of quality of education as a whole in PKK especially for Diploma in Electronic Engineering (Computer) (DTK).

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