

Assessing Students' Academic Quality Performance

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ABSTRACT

Achieving quality objectives is paramount to everyone in an organization. This is a preliminary paper that attempts to analyze and measure the academic performance of students in three selected diploma programs of UiTM Pahang. Three elements encompassing students' graduating on time, students completing beyond the allotted time (extend students) and those graduating with CGPA greater than 3.00 are the fundamental focus of this study. Analysis reveals similar academic quality patterns and trends for the two of the three programs studied while intermittent CGPA performance for the remainder. Based on Pareto principle, the study indicates that the cause of lower quality academic performance is dominated by 30% of the students' population and solving this would contribute to 70% of lecturers' time for publications and writings. Finally, a suggested Pro-Forma cost of Quality report has been initially devised as a tool for monitoring programs' quality performances.

Keywords: *Quality, cost, performance, CGPA*

Introduction

General commercial perception indicates that higher quality products are expensive due to higher costs incurred in its materials, labour and overheads. This principle holds true in education. Going to higher echelon of education such as the university requires enormous costs, either from the point of view of the parents, financial educational providers or the university. As these parties could not evade from the costs of providing good education, then it is just imperative to put them into measurement in the view of evaluating investments in quality based on cost of sustenance in taking courses in the university and compliance of the time allotted to complete a given programmes.

The Universiti Teknologi MARA (UiTM) Pahang has set its quality policies and objectives to sustain its educational and professional commitments towards the various stakeholders and the public at large. It has initiated and endeavored to test and measure the attainment of quality objective number 1, that is, to achieve 30% of full time students graduating with CGPA (cumulative grade point average) greater than 3.0 which commenced from December 2005 onwards and with amendment on October 2008.

In addition, this study desires to magnify the cost of quality control of selected programs offered in the university alongside with the student's compliance with the predetermined programs' requirements. Secondary data gathering and analysis have been undertaken and used predominantly in this study.

The word costs refers to the amount of time allotted or its equivalent amount, spent or otherwise, by the concerned parties, the various heads of departments, so as to instill higher rate of students reaching the target quality standards. Lacking of which indicates cost of poor quality, that is, the failure to undertake control. Likewise, quality means the outcomes or results as measured by the student's performances.

It is to the writers' belief that once there is measurement of costs and quality performance, ultimately analysis, evaluation and control are undertaken and prediction of achievable objectives, say, percent of graduates with CGPA higher than 3.0 are possible. On the other hand, when an academic programme fails to bring about good results from their students then poor quality is highlighted and investigated so that corrective measures could be undertaken by concerned quarters.

Quality Accreditation

One of the driving forces of quality achievement of UiTM is the quality accreditation process. It is obtained by meeting of certain quality standards set out in the international ISO 9001:2000 which cover the teaching and learning systems, documentation process controls and delivery methods that UiTM has in place to deliver quality educational processes and services to the students. The certification has been issued in 2006 and renewed in 2008 by Lloyd's quality auditor. However, UiTM is yet to adopt mandatory ISO requirement from the suppliers and providers of other related services on campus for a holistic quality system assurance.

Academic Programme and Students Performance

The results of selected academic programme graduating students' performances are put to test. Three programmes have been selected for this longitudinal study namely Diploma in Accountancy, Diploma in Office Management and Technology, and Diploma in Wood Industry within a span of three years as indicated earlier. The ensuing paragraphs analyze the results of the graduating students' performance in relation to the university quality objective number 1, which sets a target of 30% of graduates with CGPA greater than 3.0 commencing from April 2006 to April 2008 and increased to 50% with effect from October 2008.

Diploma in Accountancy (DIA)

Based on secondary data analysis, of the 276 graduating diploma students from years 2006 to 2008, 164 or 59% of them have completed the program requirements while the remainder, 112 or 41% of the students, belong to extended category. The time required for completion of a diploma course is six (6) semesters. Out of the 164 students graduating on time, 89 or 54% have obtained CGPA above 3.0 which means that the faculty has surpassed the quality standard of 30% from semesters ending April 2006 to April 2008. However, in October 2008, the faculty's performance was a little bit less by 2% as indicated in Table 1.

Analysing the students' semester performance, findings reveal that percentage of students completing the programme on time is higher in December - April as compared to July - October all throughout the years of longitudinal study. However, the percentage of students obtaining CGPA greater than 3.0 is not coterminous with the graduating students on time. In years 2006 and 2007, the October graduates (2006=64%; 2007=59%) have better counts in CGPA greater than 3.0 as compared to April (2006=56%; 2007=48%).

In year 2008, the April graduates have shown better numbers of students obtaining CGPA greater than 3.0 and a drop by 5%, from 53% to 48% in October 2008. This shows that the CGPA performance for October 2008 failed to achieve the 50% standard target. The finding likewise indicates an emerging declining trend on the percentage of graduates with CGPA above

3.0. The faculty has to execute more joint quality efforts to reverse the trend. It is noted that the DIA students' CGPA performance is not influenced by the particular semester of the programme's completion and that the trend of students' completing on time is not similar to the trend of students' CGPA performance.

Table 1: DIA Graduating Students' Performance

Issues	Total		2006				2007				2008			
			April		October		April		October		April		October	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Sit for exam	276	100	95		25		32		26		29		69	
Graduate on time	164	59	64	67	14	56	21	66	17	65	17	59	31	45
Extend/etc	112	41	31	33	11	44	11	52	9	35	12	41	38	55
CGPA > 3.00	89	54	36	56	9	64	10	48	10	59	9	53	15	48
CGPA < 3.00	75	46	28	44	5	36	11	52	7	41	8	47	16	52

Diploma in Office Management & Technology (DIOMT)

The DIOMT programme has a total of 325 graduating students for the same period, of which 248 or 76% have conformed to the time allotted for the programme of 6 semesters and 77 or 24% are extend students. Of the numbers of graduating students on time, there are 178 or 72% obtaining a CGPA of 3.0 and above while 70 or 28% are extend students.

Table 2: DIOMT Graduating Students' Performance

Issues	Total		2006				2007				2008			
			April		October		April		October		April		October	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Sit for exam	325	100	42		29		99		55		32		68	
Graduate on time	248	76	38	90	20	69	71	72	29	53	31	97	59	87
Extend/etc	77	24	4	10	9	31	28	28	26	47	1	3	9	13
CGPA > 3.00	178	72	28	74	11	55	61	86	25	86	25	81	28	47
CGPA < 3.00	70	28	10	26	9	45	10	14	4	14	6	19	31	53

Analysing the students' semester performance, findings indicate that percentage of students completing the program on time is higher in December - April as compared to July - October. DIOMT trend of students graduating on time is similar to that of DIA. The disparity lies on the direction of the trend of students graduating on time and those obtaining CGPA greater than 3.0.

Unlike DIA, the DIOMT graduating students shows coterminous performance between the previously stated trend issues where graduating students in December - April have similarly higher percentage of students obtaining a CGPA greater than 3.0 than those in July - December. In years 2006 and 2007, the April graduates (2006=74%; 2007=86%) have better counts in CGPA greater than 3.0 as compared to October (2006=55%; 2007=86%). In year 2008, the April graduates have shown better percentage of students (86%) obtaining CGPA greater than

3.0 than the ensuing semester of July – October.

Parity of performance between DIA & DIOMT programs is shown in semester ending October 2008 where declining performances was evident. The DIOMT percentage of graduating students obtaining CGPA more than 3.0 is 47% as opposed to 81% in the previous semester of April 2008. This indicates that it fails to achieve the 50% new standard target. The finding likewise indicates an emerging declining trend on the percentage of graduating students with the said CGPA. The faculty has to execute more joint quality efforts to reverse the trend as well.

Diploma in Wood Industry (DIWI)

There are 251 graduating students from the DIWI programme for the years 2006 to 2008 of which 185 or 74% of the them have completed the program on time and 64 or 26% are categorised as extend students. As shown in Table 3, this programme has equal percentage of students obtaining CGPA greater than 3.0 and those that are not.

Table 3: DIWI Graduating Students’ Performance

Issues	Total		2006				2007				2008			
			April		October		April		October		April		October	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Sit for exam	251	100	35		12		47		35		50		72	
Graduate on time	185	74	22	63	6	50	39	83	27	77	39	78	52	72
Extend/etc	64	26	13	37	6	50	8	17	8	23	11	22	20	28
CGPA > 3.00	93	50	8	36	5	83	22	56	13	48	33	85	12	23
CGPA < 3.00	92	50	14	64	1	17	17	44	14	52	6	15	40	77

Analysing the students’ semester performance, findings indicate that percentage of students completing the programme on time is higher in December - April as compared to July – October as shown in Table 3. At this point, it can be stated that all the sample programmes have similar trend of graduating on time where semester ending in April has better percentage as compared to that semester ending in October.

Unlike DIA and the DIOMT graduating students, the DIWI shows a spiraling CGPA performance where December – April students have shown an increasing trend on percentage of CGPA i.e. 36% in April 2006, 56% in April 2007 and 85% in April 2008. The percentage of October graduating students obtaining the target CGPA has shown a declining trend that is 83% in October 2006, 48% in October 2007 and 23% in October 2008. The October 2008 actual performance indicates that DIWI has the lowest CGPA percentage as compared to the two other programme) s. As such, it failed to achieve the 50% standard target in the second semester of 2008. Comparing the trend on percentages of graduating students on time with those students obtaining CGPA greater than 3.0, it can be noted that the trend of students’ graduating on time over the years studied is not coterminous with the trend of students obtaining CGPA greater than 3.0. Although the trend on CGPA greater than 3.0 from 2006 to 2008 shows intermittent trend, the performance is inconclusive to that of the other two programmes as they vary in terms of programme’s intricate requirements.

Comparatively, the DIA programme has the lowest percentage of graduating students on time and ultimately has the highest percentage of extend students; the DIOMT has the consistent higher percentage of graduating students with CGPA greater than 3.0; and the DIWI has a spiraling trend of graduating students with CGPA greater than 3.0 and has the least

percentage of students obtaining CGPA greater than 3.0 in October 2008. However, the common issue is that the three programs have unanimous declining trend of graduating students with CGPA greater than 3.0 in October 2008 despite of quality efforts in obtaining the renewal of the ISO 9001: 2000 certificate.

Pareto On Extend Students (PoES)

The Pareto principle or the so called 80-20 rule which was devised by Italian economist Vilfredo Pareto was originally developed in the context of the distribution of income and wealth among a given population. Likewise, Joseph M. Juran, a famous business management thinker, indicated that 80% of sales come from 20% of clients. Applying these principles, Pareto principles can be applied in quality control for educational entity as in the context of this paper.

Figure 1 shows the Pareto chart for the sample programs student quality performance (combined) which can be identified by the values taken from Tables 1, 2, and 3 above while Table 4 reveals the combined total frequencies and percentages of the elements being tested. As shown by the Pareto chart in Tables 4 and Figure 1, it can be noted that the cause of poor quality academic performance is dominated by 30% of the students population and solving this top poor academic quality students would contribute to 70% of the lecturers' time for publication and writings.

Solving the poor quality academic performance of the 30% of the students' population can be a challenging task which requires a holistic approach of all the concerned parties, more specifically the faculty members.

Table 4: Integrated Graduating Students Performance from Three Programs

OVERALL (3 PROGRAMS)	Total	
	N	%
Sit for exam	852	100
Graduate on time	597	70
Extend/etc	253	30
CGPA > 3.00	360	60
CGPA < 3.00	237	40

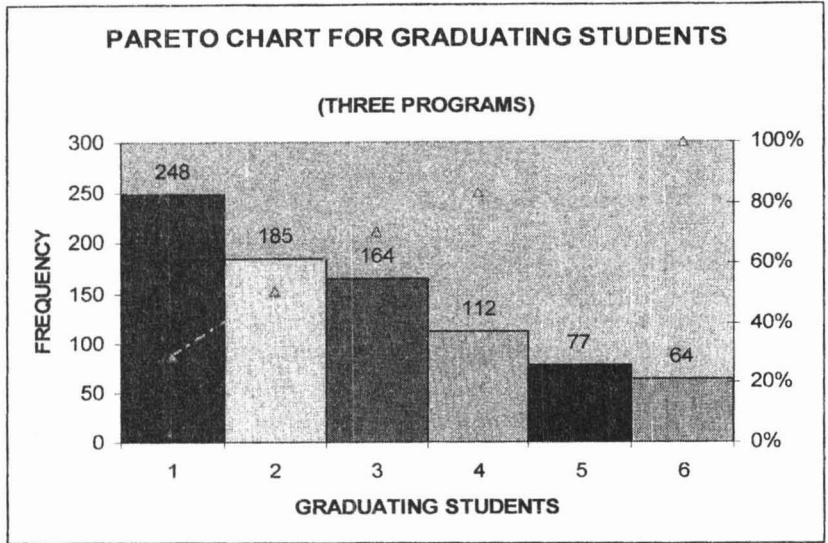


Figure 1: Pareto Chart for Graduating Students

Measuring Cost of Quality

As the word connotes, the cost of quality is the cost incurred in ensuring that the firm maintains a high level of quality and the costs arising from having poor-quality products (Kim Langf Smith 2006). In education, as the focus of this study, quality is measured quantitatively either in terms of costs spent by the education entity alongside with the progress made by the students given class. Thus, the costs of attaining certain quality level can be categorised in four (4) types as known in most management accounting textbooks and shown in Table 5.

Defining these four mentioned cost of quality elements would give more insights to users. The prevention costs are associated with actions taken to ensure that a process provides quality products and services, appraisal costs are associated with measuring the level of quality attained by the process, and failure costs are incurred to correct quality in product and service before or after delivery to customers (Schiffauerova and Thomson, 2006).

Measuring the various aspects covered in conforming to quality standard level of educational institution is preliminary as results in the form of information relating to achievement has to be disseminated and analysed by the concerned parties for decision making and corrective actions. The measures which have been devised by the authors as stated above are useful tools in monitoring and evaluating the quality control processes adopted by the various faculties. Having these measures in place will serve as a guide to every Head of Faculty and faculty member in managing the quality target. Thus a quality cost's report should be prepared by the program owner.

Table 5: Cost of Quality and Measures

Cost Area		Description	Measures
Cost of Control	Prevention costs	Arise from efforts to keep defects from occurring at all	Quality planning of lectures Statistical process control such as line chart, pareto chart for student midterm performance Quality training and lecturer development programs Lecturer teaching verification & observation
	Appraisal costs	Arise from detecting defects via inspection, tests, audit	Periodical tests and observation of individual student's performance Compulsory consultation & course counseling for remedial students English comprehension test for the given course iv) Students' motivational testing v) Review classes
Cost of Failure of Control	Internal failure costs	Arise from defects caught internally and dealt with by discarding or repairing the defective items	Remedial class or consultation for weak students.
	External failure costs	Arise from defects that actually reach students.	i) Free flow lecturer-student course dialogue.

Suggested Pro-Forma Cost of Quality (SPCoQ) Report

This SPCoQ report contains the various quality control activities in each of the four elements of obtaining sustainable quality program. It can be prepared either monthly or bi semester depending upon the needs for improvement or quality achievement's variance of a particular faculty. The variance can be extracted when the actual is compared with the flexible budgeted quality performance indicate either costs or percentage. Table 6 shows the Pro-Forma costs of quality report that can be adopted by the program owner in view of monitoring quality achievements.

Table 6: Pro-Forma Cost of Quality Report

Types of Quality Activities (QA)	No. of times QA undertaken	Percent*	Cost	Percent*
Appraisal costs Lecturer evaluation of student performance Consultation Regular students' comprehension English test Topic review in class Preventive costs Lecture preparation & planning Tests & Quizzes inspection Lecturer teaching methodology training In class process observation Internal failure costs Remedial classes for weak students Motivational program External failure costs Student-lecturer topic dialogue Customers' complaints				
Total				

* The percentage column can be computed based on each respective total. Subsequently, the total cost can be compared, in terms of percentage, with the total quality cost incurred by the entity for the same period. The resulting outcome can be analyzed for monitoring and further corrective actions can be undertaken. Management wise, this report can be prepared by process owner and then integrated as one master cost of quality report by the respective heads of departments

Conclusion

Based on the above study, UiTM Pahang has successfully achieved its quality objective number 1 where all the three academic selected academic programmes) had produced graduating students in the diploma programs with CGPA greater than 3.00 from April 2006-April 2008. Certain laxities in academic excellence exist in October 2008 where all the three programmes were lagging behind achieving the target of 50%. In terms of samples' combined performance, 70% of the students successfully graduated on time while 30% are in the extended category. Out of the 597 students graduating on time, 40% belongs to graduates with CGPA of 3.0 and below or graduat-



ing not meeting the quality objective number 1. Therefore the writers recommend that holistic quality efforts among the concerned parties, both from the academic and non academic should be implemented to reverse the resulting trends for those existing and new students. As this study is not free from limitations, it is highly proposed to conduct academician's self magnification in view of improving the percentages of extend students and those with CGPA of 3.0 and below. Lastly, it is to the benefit of the readers to consider that this is a preliminary study involving only three out of the twelve existing programs and limited variables put to test.

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