CONTINUOUS QUALITY IMPROVEMENT (CQI): STUDENT'S SATISFACTION IN POLYTECHNIC

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ABSTRACT

The increase of teaching and learning quality is very important because it represents the main key to education development in Malaysia. This study implemented with aim to observe the student levels of satisfaction in polytechnic learning environment from the aspect of facilities and services. Probability sampling that chosen is simple random sampling which use questionnaire instrument. Data analysed by using Statistical Package for the Social Sciences (SPSS) V21 software. This study is to ensure the students experience learning process that is conducive in order to produce polytechnic graduate with quality and intellectual. Result showed that student was satisfied with some infrastructure that provide by polytechnic such as teaching and learning facilities, library services, student affairs and administration services. However, improvement of service quality like sports equipment and cafeteria/canteen need to be being performed further. A few continuous quality improvement (CQI) need to be worked so that the teaching and learning environment that are existing can be maintained and further improved. These efforts is important to fulfilling the Polytechnic transformation objectives which is 50% of 'Sijil Pelajaran Menengah' (SPM) leavers who qualify to choose Polytechnic as first choice institutions to further their studies.

INTRODUCTION

One of the factors of students excellence is start from the environment which is in place that good, comfortable and have quality. Polytechnic need to provide the facilities and services to their students and retained the quality to fulfil the students need or satisfaction. According to Johnson and Fornell [6] emphasis on consumer satisfaction is very important to get consumer's trust on product and services that provide. The most important things for polytechnic are to provide the meaningful learning experiences for their students by providing a quality of facilities. Polytechnic provide a variety of facilities and services such as lecture room, lecture theatre and laboratory, library, student's affair, administration and many more.

An educational institution should maintain the levels of student's satisfaction for good performance purpose. This is a main key to attract more student choose polytechnic to further their studies. According to Kouthouris and Alexandris [8] the services quality that accepted is unable to predict the levels of human satisfaction. As discussed by Nurul Huda et. al. [11] the quality changing is a phenomenon with the great influence in organization management system.

PROBLEM STATEMENT

According to Rowley [16] the quality of education refers to the success of an institution that provides educational environment which enables students to achieve learning and appropriate academic standards effectively. The main focus of studied is closely linked to its use by students at polytechnic. This is because to ensure the students to learn very well and will contribute towards them during their studies. The quality and productivity of services is not only seen based on the performance of the service provider, but also on the basis of the performance that shown by its clients [4].

The purpose of this study is to identify the problem that related to the level of satisfaction of students. Polytechnic provide the variety of the facilities and services such as classroom, Lecture Theater, laboratory, library, student affairs, office of administration, canteen and cafeteria and other basic facilities. The measurement of student satisfaction can be useful to institutions, to help them to pinpoint their strengths and identify areas for improvement.

This is very important as a Continuous Quality Improvement (CQI) for the polytechnic and requirement for Malaysian Qualification Accreditation (MQA). Identify the problem that related to satisfaction may provide information about actions that can be taken to maintain high levels of satisfaction and improve students learning.

RESEARCH OBJECTIVES

The purposes of this study are:

a) To examine student levels of satisfaction on lecture room, lecture theatre and laboratory.
b) To examine student levels of satisfaction on library, student's affair and administration services.
c) To examine student levels of satisfaction of other basic facilities at polytechnic.
d) Identifying continuous quality improvement (CQI) approach to increase the student levels of satisfaction.

LITERATURE REVIEW

Kotler and Clarke [7] define satisfaction as a state felt by a person who has experience performance or an outcome that fulfill his or her expectation. Satisfaction also covers issues of students' perception and experiences during their studies. According to William [21] even though it is risky to view students as customer, but given the current situation at higher education, students have become a "customer" and "fee payers" to the education institution. Therefore, it is reasonably their demand or views are heard and acted upon by the institution.

A learning environment is a combination of social and physical qualities that create the classroom experience. Learning environment refers to the diverse physical locations, contexts, and cultures in which students learn. As discussed elsewhere [13] stated that the key criteria for 21st century learning environments are knowledge and skills, pedagogy and curricula, assessment and technology. Today's interconnected and technology-driven world, a learning environment can be virtual, online and remote; in other words, it doesn't have to be a place at all. Learning environments are the structures, tools, and communities that inspire students and educators to attain the knowledge and skills the 21st century demands of us all.

The most important missions for education institution or polytechnic are to provide meaningful learning experiences for their students. The studies that have been done by Roberts and Styron [15] were stated that learning experiences are determined by the collective effort of faculty, staff and students. At the same time, students enter higher education with their own expectations of learning experiences. According to Pike, G. R. [14] stated that these expectations impact how students respond to their environments and also act as precursors as students make academic decisions, such as choice of major.

Meaningful learning experiences are very important to the students because it's also related to the facilities and services at institution. It is imperative for polytechnic to create valuable and enriching learning experiences within students' academic programs. Conducive learning environment is very important because the students can learn with comfortably during their studies. Che Nidzam Che Ahmad et. al. [1] explain that teaching and learning in conducive learning environment will be able to encourage the intellectual activity, friendship, cooperation and support, beside it also foster the learning and development of students.

Therefore, quality aspect on learning facilities needs to be emphasized and maintained by institutional side. As discussed by Hishamuddin Fitri et. al. [5] which is a definition of quality revolves around the idea that quality has to be judged on the assessment of the user or consumer of the service. Moreover, Webster R. S. [20] mentioned to satisfy the customers or indeed students is not a virtue of education. This is made explicitly clear through the example of Plato's Socrates, to please the students by satisfying their expectations for attaining something of use to their career aspirations.

One of the researches is by Yukselturk and Yildirim [22] in which it was stated that Higher education institutions consider student satisfaction as one of the major elements in determining the quality of online programs in today's markets. While Denson et. al. [2] have found that the levels of student satisfaction gained through surveys are being given increasing importance in the tertiary sector as they are assumed to be able to measure the quality of teaching and learning.

Previous research by Siti Fatimah Dzulkifli [18] has indicated that student levels of satisfaction on teaching aid usage are in moderate level at Selayang Community College. Overall, student levels of satisfaction on learning facilities is in moderate level with score mean 3.66 for workshop, 3.60 for lecture room and other facilities is 3.53. Result research by Maisarah Mansor et. al. [9] showed there are students not satisfied with a number of lecture room that studied. Some changes were proposed to be implemented at Politeknik Merlimau Melaka (PMM) so that the teaching and learning environment become more effectiveness and can be increased.

METHODOLOGY

The research framework is a quantitative. In this study, a descriptive research design is used to describe characteristics of a population or phenomenon being studied. It does not answer questions about how, when and why the characteristics occurred. This study procedure only carried out with distributing questionnaires form to the students.

Research Sample

The samples in this study were diploma students studying at a Politeknik Balik Pulau (PBU). Respondent consists of Diploma students which is Diploma in Information Technology (Programming) and Diploma in Information Technology (Networking). Probability sampling that chosen is simple random sampling. Simple random sampling is the most widely-used probability sampling method, probably because it is easy to implement and easy to analyze. The number of respondents that give feedback is 249 from 381 respondents, which represents about 65.4% response rate.

Instrumentation

This research used questionnaire as a medium to obtain the data needed. There are three sections in the questionnaire, consisting of Section A: Demographic, Section B: Facilities and Services. In this section A, four question covering from the subjects of gender, programme, race and their semester of study. Followed by section B, covering about lecture room, lecture theatre, laboratory and library. Moreover, it's also covering student's affair, administration services and other basic facilities at polytechnic. Instrument used in this research is using the Likert scale from 1 for not satisfied at all to 5 for very satisfied. Level interpretation for mean value is based on by score mean range that used by Norizan Abdul Razak [10] as in following table:

Table 1. Mean Range Level Interpretation

Mean Score Range	Interpretation
1.00-2.32	Low
2.33-3.65	Moderate
3.66 and above	High

Reliability for questionnaire form was tested by using Alpha Cronbach (reliability coefficient that showed the items is connected each other). Alpha Cronbach value for questionaire that used is 0.922 which is reliable because its higher than the acceptable level (.70).

Data Analysis Procedures

The data analysis for this study conducted through 'Statistical Package for Social Science' software or SPSS version 21 to get the percentage, mean score and standard deviation. The study also tested reliability of the instrument so that it enables to produce a robust and valid result.

RESULT AND DISCUSSION

Demographic data were analyzed by using frequency statistical method. Demographic data are including respondent's gender, race, programme and semester. Table 1 shows the respondent demographic.

Table 2: Respondents Demographic

Item	Details	Frequency	Percentage (%)
Gender	Male	98	39.4
	Female	151	60.6
Race	Malays	181	72.7
	Chinese	16	6.4
	Indian	51	20.5
	Others	1	0.4
Programmes	DIP	225	90.4
	DNS	24	9.6
Semester	1	82	32.9
	2	64	25.7
	3	1	0.4
	4	12	4.8
	5	12	4.8
	6	78	31.3

Table 2 showed a total of 98 male (39.4%) and 151 female (60.6%) students in this study. The majority of the respondents are Malays (72.7%), followed by Indian (20.5%), Chinese (6.4%) and other race (0.4%). There are two programmes only that involve in this study, Diploma in Information Technology (Programming)-DIP which is 90.4% and Diploma in Information Technology (Networking)-DNS is 9.6%. Most of the respondents are from semester one (32.9%), followed by semester six (31.3%), semester two (25.7%), semester four (4.8%), semester five (4.8%) and semester three (0.4%).

Table 3: Facilities and services

Bil	Item	Mean	SD	Level
	Teaching and learning facilities			
1	Equipment such as chairs, tables and whiteboard are sufficient for the learning purposes.	4.07	0.992	High
2	Equipment and practical requirements are sufficient and fully operational.	3.69	1.172	High
3	The environment in classroom/lecture/Laboratory/Workshop are clean, comfortable and safe	3.85	1.114	High
4	Use of the equipment safety regulations displayed.	3.90	1.011	High
	Library Services			
5	There are many collections in the library as a references	3.90	0.951	High
6	Services at library counter is friendly	3.89	0.988	High
7	Borrowing process and book return is expeditiously	4.02	0.880	High
8	Material booking always filled	3.80	0.928	High
9	Environment in library are clean, comfortable and safe	4.34	0.803	High
	Students Affairs			
10	Counter service at Students Affairs is friendly	4.11	0.847	High
11	Dealing at counter is a quick and efficient	3.96	0.917	High
12	Information that related to student affairs is easily available	3.97	0.937	High
13	Information that received is accurate	3.98	0.857	High
	Administration			
14	Services that given at the administration counter is friendly	4.10	0.782	High
15	Dealing at counter is a quick and efficient	4.10	0.804	High
16	Related officer have been found easily	3.92	0.864	High
	Co-curriculum Services			
17	Co-curriculum basic amenities and recreation is sufficient	3.73	1.099	High
18	Sports equipment and recreation have been obtained easily	3.57	1.176	Moderate
	Cafeteria/Canteen Services			
19	Basic amenities in cafeteria/canteen is sufficient	3.22	1.100	Moderate
20	The level of cafeteria/ canteen cleanliness is satisfying	2.69	1.163	Moderate
21	Food quality is satisfying	2.76	1.174	Moderate
22	Food prices in cafeteria/ canteen are in accordance and displayed.	2.65	1.193	Moderate
23	Food prices in cafeteria/ canteen is cheaper compared to the outside polytechnic area.	2.71	1.265	Moderate
24	Sales services is friendly	3.18	1.184	Moderate
	Other facilities services			
25	Toilet facilities are sufficient.	3.69	1.038	High
26	The level of the toilet cleanliness is satisfying	3.21	1.201	Moderate
27	Parking facilities is sufficient.	3.69	1.101	High
28	Internet facility is sufficient.	2.40	1.442	Moderate
29	The level of Islamic Centre cleanliness is satisfying	4.35	0.917	High
30	Basic amenities in Islamic Centre is sufficient	4.38	0.917	High

Table 3 present the part for teaching and learning facilities is high level. This result showed the students was satisfied with the equipment that provided by the polytechnic. Positive result also showed for library services, student affairs and administration parts which are high level. The highest mean score for library part is the environments in library are clean, comfortable and safe (min=4.34; s.p=0.803). On other hand, counter service at Student Affairs (min=4.11; s.p=0.847) and administration (min=4.10; s.p=0.782) that friendly also one of the highest mean score. The services at library, student affairs and administration are friendly, quick and efficient. That why it's makes students satisfied because they can easy to get the information or materials that needed. The students also can meet the related officer with easily.

For co-curriculum part, it showed the basic amenities and recreation that provided is sufficient (min=3.73; s.p=1.099) in high level but for sports equipment and recreation to borrowed or obtained is in

moderate level (min=3.57; s.p=1.176). The Culture, Co-curricular and Sports Unit have a set of lending for all sporting equipment to avoid any damage or loss.

The result also showed that a cafeteria / canteen service is in moderate level. The result showed the basic amenities in cafeteria/canteen that sufficient is the highest mean score (min=3.22; s.p=1.100) and followed by sales services is friendly (min=3.18; s.p=1.184). Other items is in moderate level are food quality (min=2.76; s.p=1.174), food prices that accordance and displayed (min=2.65; s.p=1.193), cafeteria/canteen cleanliness (min=2.69; s.p=1.163) and food prices is cheaper compared to the outside polytechnic area (min=2.71; s.p=1.265).

While for other facilities services at Politeknik Balik Pulau that showed the highest mean score are basic amenities in Islamic Centre that sufficient (min=4.38; s.p=0.917), level of Islamic Centre cleanliness (min=4.35; s.p=0.917), toilet facilities (min=3.69; s.p=1.038) and parking facilities (min=3.69; s.p=1.101).This result showed that students are satisfied with all basic facilities but only a few items that showed in moderate level such as the level of toilet cleanliness (min=3.21; s.p=1.201) and internet facility (min=2.40; s.p=1.442). This situation is caused by the internet access that is not widespread yet in all areas at polytechnic such as lecture rooms, dormitory and cafeteria.

Table 4: Differences mean score for two semesters

Bil	Item	Mean (June 2014)	Mean (Dec 2014)	Difference
1	Teaching and Learning facilities	3.77	3.87	0.10
2	Library	3.89	3.99	0.10
3	Students Affair	3.96	4.00	0.04
4	Administration	3.86	4.04	0.18
5	Co-Curriculum	3.42	3.65	0.23
6	Cafeteria	2.79	2.86	0.07
7	Other facilities	3.58	3.62	0.04
	Mean Average	**3.61**	**3.72**	**0.11**
	N (Respondents)	148	249	

Table 5 shows the differences mean score for two semester's result which is June 2014 and December 2014 session. This comparison is important to find out whether the level of student satisfaction is increasing or decreasing on December 2014 session. This finding indicates there is increases of student satisfaction mean scores for the convenience of learning environment. This result also shows that polytechnic strive to improve the quality of services and facilities to the students for every semesters. This polytechnic effort shows a good move because any improvements that made by Polytechnic are one of the requirements of the Malaysian Qualification Agency (MQA). MQA is a statutory body in Malaysia that set up under the Malaysian Qualifications Act 2007 to accredit academic programs provided by educational institutions providing post-secondary or higher education and facilitate the accreditation and articulation of qualifications.
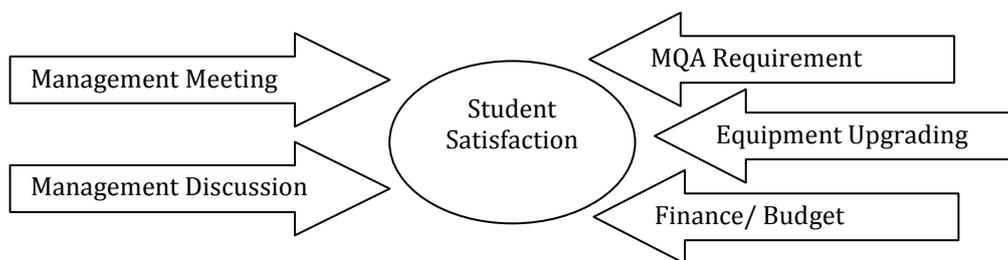
Diagram 1: Approach that use by polytechnic

Diagram 1 above shows the approach that use to increase the student's level of satisfaction. From the results that analyze above, this studies can be conclude that student's level of satisfaction was increasing because of management discussion, management meeting such as 'Kajian Semula Pengurusan' (KSP) meeting, MQA requirement, equipment upgrading and budget allocation. Management discussion at polytechnic usually held on two times in every month and at least one for management review meeting.

This meeting is to get solutions for a few issues in polytechnic management. The most important to increase the level of student's satisfaction is a requirement from MQA. MQA specifies that all the facilities and services at the educational institution must be constantly enhanced for all times depending on the number of students. Polytechnic also need to have the latest equipment not only in terms of software. By improving service quality, it may potentially improve the students' satisfaction as well [5]. Moreover, student's satisfaction also influences by budget allocation of polytechnic. Therefore, the polytechnic management needs to prepare their estimated expenses for every year in order to fulfill the student's satisfaction.

CONCLUSION

Polytechnics have many challenges in order to provide the best services that can fulfil student's requirements and their satisfaction. According to Sapri, Kaka and Finch [17] students as main customers of higher education have their own preferences and opinions on the factors that affect their levels of satisfaction. The results from this study have disclosed that student was satisfied with the facilities and services that provided by Politeknik Balik Pulau which are teaching and learning facilities, library services, student affairs and administration services. The students also satisfied with the Co-curriculum basic amenities and recreation and easily to obtain the sports equipment and recreation. However, this study discovered that the level of cafeteria or canteen is moderate. While most of the students satisfied with other basic facilities such as toilet, parking area and Islamic Centre. This show that polytechnic are strive for student levels of satisfaction. On other hand, the influences for student levels of satisfaction are KSP meeting, management discussion, MQA requirement, equipment upgrading and budget allocation by polytechnic. It is important to fulfill the requirement from MQA so that the academic programs that offered by polytechnic are accredited. Any attempt and practices by an Organization in the improvement of the quality of education can contribute to the development and growth of a higher education institution [19]. Denying or neglecting the importance of service quality is the same like risking the continuation and the competitiveness of the institutions because by taking it into consideration service quality [5].

LIMITATION AND RECOMMENDATION

The results have represented the level students of satisfaction about polytechnic facilities and services. However, this study has some limitations which are the respondents is very limited to only two programmes that offered Diploma in Information Technology (Programming) and Diploma in Information Technology (Networking). Recommendations for future research are to target the respondents for northern zone polytechnic. On other hand, the top management of polytechnic need to upgrading further facility that provided. Improvement should be outlined and implemented to attain student's satisfaction that desired.

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