SURAT TUGAS

Nomor : 1482/WM01/T/2017

Pimpinan Universitas Katolik Widya Mandala Surabaya dengan ini menugaskan :

Nama	:	**Julius Mulyono, ST., MT., IPM.**
NIK	:	531.97.0299
Jabatan	:	Sekretaris Jurusan Teknik Industri - Fakultas Teknik Universitas Katolik Widya Mandala Surabaya
Tugas	:	Mempresentasikan Makalah dengan judul *"Comparison of Attributes Education Services at 2 Senior High Schools in East Java – Indonesia"* dalam Seminar Internasional South East Asean Technical University Consortium Symposium (SEATUC) 2017
Waktu	:	Senin – Selasa, 13 – 14 Maret 2017
Tempat	:	Ho Chi Minh City University of Technology Vietnam
Lain-lain	:	Biaya diambilkan dari anggaran Jurusan Teknik Industri tahun 2016/2017 dengan kode 601.02.2233

Demikian Surat Tugas ini diterbitkan, harap dilaksanakan dengan sebaik-baiknya dan memberikan laporan setelah selesai melaksanakan tugas.

26 April 2017
a.n. Rektor
Wakil Rektor I,

Drs. Y.G. Harto Pramono, Ph.D.
NIK. 121.86.0119

TINDASAN :
- Dekan Fakultas Teknik
- Ketua Jurusan Teknik Industri
- Kepala BAU

SEATUC 2017

THE 11TH SEATUC SYMPOSIUM TAKES PLACE FROM 13-14 MARCH 2017 AT HO CHI MINH CITY UNIVERSITY OF TECHNOLOGY (HCMUT) IN VIETNAM

Proceedings of abstract

SEATUC SYMPOSIUM 2017 AGENDA

11th SOUTH EAST ASEAN TECHNICAL UNIVERSITY CONSORTIUM SYMPOSIUM

HCMC University of Technology, 13-14 March, 2017

Day 1: Monday (March 13, 2017)			
Time	**Venue**	**Content**	**Remarks**
8:00 ÷ 9:00	A5 Hall	Registration	Plenary session
9:00 ÷ 9:30		Introduction and Opening remarks (Shibaura and HCMUT)	
9:30 ÷ 10:30		Keynote speech	
10:30 ÷ 10:50		Coffee break	
10:50 ÷ 12:00		President panel: "Globalization in Higher Education: the Role of Industry – University Cooperation". Group photo	
12:00 ÷ 13:30	Canteen, B4 building	Lunch time	
13:30 ÷ 15:10	Conference rooms, A4 building	Paper presentation	10 Oral sessions
	Seminar room, 1st floor, B6 building	Intensive workshop	Students from SIT
15:10 ÷ 15:30	A5 Hall (lobby)	Coffee break	
15:30 ÷ 17:10	Conference rooms, A4 building	Paper presentation	10 Oral sessions
	Seminar room, 1st floor, B6 building	Intensive workshop	Students from SIT
18:00 ÷ 21:00	ATHENA Hotel, 280 To Hien Thanh Street, Ward 15, District 10, Ho Chi Minh City	Gala dinner	

Day 2: Tuesday (March 14, 2017)

Time	Venue	Content	Remarks
9:00 ÷ 10:20	A4 Hall	Steering committee	
	Conference rooms, A4 building	Paper presentation	10 Oral sessions
	Seminar room, 1st floor, B6 building	Intensive workshop	Students from SIT
10:20 ÷ 10:40	A5 Hall (lobby)	Coffee break	
10:40 ÷ 12:00	A4 Hall	Steering committee	
	Conference rooms, A4 building	Paper presentation	10 Oral sessions
	Seminar room, 1st floor, B6 building	Intensive workshop	Students from SIT
12:00 ÷ 13:30	Canteen, B4 building	Lunch time	
13:30 ÷ 15:30	Conference rooms, A4 building	Paper presentation	10 Oral sessions
15:30 ÷ 16:00	A4 and A5 Hall (lobby)	Coffee break (A5 lobby)	
		Poster presentation (A4 lobby)	10 Poster sessions
16:00 ÷ 17:00	A4 Hall	Closing session	

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OS10-02	Exploring facilitators for successfully implementing safety management system at manufacturing firms in Vietnam	Nguyen Thi Duc Nguyen, Huynh Trong Dien
OS10-03	How to overcome the barriers for implementing lean manufacturing successfully? In the case of Bosch Vietnam Company	Nguyen Thi Duc Nguyen, Pham Anh Tuan, and Le Thi Bao Han
OS10-04	Leadership style, team interaction and project management success in information technology projects: literature review and research model	Nguyen Thuy Quynh Loan, Vo Thanh Hai
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COMPARISON OF ATTRIBUTES OF EDUCATION SERVICES AT 2 SENIOR HIGH SCHOOLS IN EAST JAVA – INDONESIA

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ABSTRACT

Quality is the one of the important factors for an organization or enterprise to defend itself in the globaly competition. One of the things that need to be considered in designing the quality of products (goods or services) is the perception or expectation of consumers to the benefits of the product. Educational is one of the service industry, with the main consumer are the students. This research aimed is to compare the satisfaction of educational services at the two schools, including the attributes of the service needs to be improved, by using the method of Kano. The opinions of consumers, in this case are the students, obtained through a questionnaire to assess the various services provided by the school members. The attributes that need to be improved are the things that are associated with learning facilities, such as the toilet/bathroom. While the strength is the competence of teachers, relating to the educational background of teachers.

Keywords: quality, service, education, student, Kano.

1. INTRODUCTION

Dr. Noriaki Kano, a Japanese professor and international consultant, in 1980 developed a theory of product or service development and customer satisfaction. It is called Kano Model. Kano at Qiting at al (2013) stated the model classifies customer preferences into five categories. It aims to connect the requirements fulfilled by products with customer satisfaction and identifies three types of requirements that influence ultimate customer satisfaction. Figure 1 presents the fundamental concepts of the Kano Model. The horizontal axis of the diagram indicates the extent to which a product or service aspect fulfills customer requirements or needs and the vertical axis indicates the extent to which customers are satisfied with the product or service. The three major types of requirements or needs are must-be, one-dimensional, and attractive.

1.1 Must-be Requirement

Must-be requirements are also referred to as basic requirements or needs, which represent the minimal criteria that must be met by a product or service. If they are not fulfilled, customers will not be satisfied with and have no interest in the product or service. Furthermore, even if these requirements are fully fulfilled, they will not generate any additional customer satisfaction beyond a neutral level.

1.2 One-dimensional Requirement

The one-dimensional line goes through the origin at 45 degrees. It represents the needs that are directly related to customer satisfaction. That is, the more functional the product or service is with regard to this type of need, the more customers are satisfied. If these types of requirement are fulfilled, they can become a strong source of customer satisfaction and should therefore be given high priority in service design or product development.
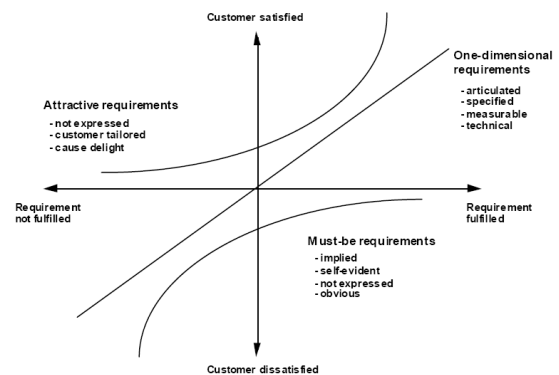

Figure 1. Kano Model Diagram

1.3 Attractive Requirement

The attractive curve shows an area in which the customer is more satisfied when the product, service or process is more functional but is not dissatisfied when the product, service, or process is less functional. These types of requirement are neither explicitly expressed nor expected by the customer. Therefore, even if they are not met, they will not cause any dissatisfaction. They merely represent unexpected surprises that will be pleasing to customers if present.

This study aims to make a comparison of the attributes of education services of two senior high schools in East Java. The first one, school 'A' is in Surabaya, and the second one, school 'B' is in Bojonegoro. Both of them are private school in East Java – Indonesia, and managed by the same foundation. Surabaya is the capital of the Province of East Java. Bojonegoro is on the west side of Surabaya, located about one hundred kilometers (or three hours by car). Every year, both of the schools received about seventy new students, distributed in two classrooms.

2. PROBLEM STATEMENT

What are the advantages of each school by making comparison between them? The comparison includes the attributes of educational services at both of them.

In this research, we chose school A and school B. Both of them are managed by the same foundation, so they have many similarity on education facilities. So do the human resources (teachers, etc.). In the last two years, the number of new students (annual intake) was decreased, significantly. We want to know what was hapenning there.

3. ANALYSIS AND DISCUSSION

We interviewed all the students, asking for their perception about the educational services in their school. We asked some pairs of question, there are funtional and disfuntional form, related to the education services in their school.

Parasuraman at Saghier at al (2013) stated there are five dimensions of service quality: tangibility (a), reliability (b), responsiveness (c), assurance (d) and empathy (e). In this study we have twenty-eight questions.

Starting with this five Parasuraman's dimensions of service quality, we breakdowned into twenty eight questions, asking for students satisfaction related to the educational services. As a costumer, students get the perception of educational service which was done by the school (teacher etc.).

Ones of questions are:

- Computers adequacy provided in the lab for students.
- Staffs capacity to solve problems when they arise.

We asked the students to make scoring and importance level, associated with the questions. Using equation (1) for validity test, and equation (2) for reliability test, we got that the data are valid and reliable.

$$R_{xy} = \frac{\sum xy - \left(\sum x\right)\left(\sum y\right)/n}{\sqrt{\sum x^2 - \left(\sum x\right)^2/n}\sqrt{\sum y^2 - \left(\sum y\right)^2/n}} \quad \dots\dots\dots(1)$$

Where   x = score each variable

   y = total score

   n = number of data

$$\alpha = \frac{k * \overline{\text{cov}}/\overline{\text{var}}}{1 + (k-1) * \overline{\text{cov}}/\overline{\text{var}}} \quad \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(2)$$

Where   k   = number of variable

   cov   = covariance between variable

   var   = variance between variable

After the validity and reliability testing, we resumed the results of the questionnaire, as shown in figure 1.
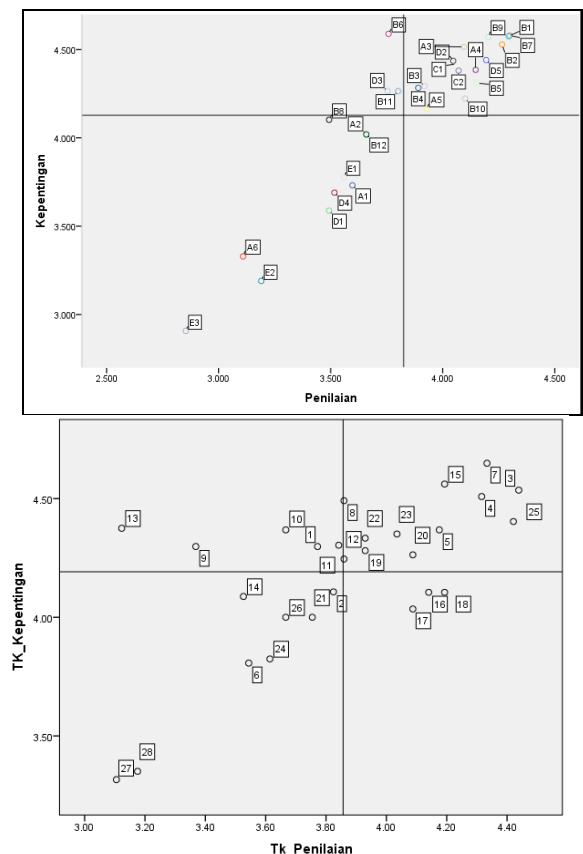

Fig. 1. Importance Level – Scoring for Educational Service Quality

Kano at Qiting at al (2013) categorized the dimensions of service quality into attractive (A), one-dimensional (O), must-be (M), questionable result (Q), reverse (R), indifferent (I), as shown in table 1.

Table 1. Kano Evaluation Table.

Costumer Requirements		Dysfunctional				
		Like	Must-be	Neutral	Live with	Dislike
Functional	Like	Q	A	A	A	O
	Must-be	R	I	I	I	M
	Neutral	R	I	I	I	M
	Live with	R	I	I	I	M
	Dislike	R	R	R	R	Q

Using this concept, we resume the results, as shown in table 2.

Table 2. Kano Categories for School A and School B

Dimension (attribute)	O	A	M	I	R	Q	Kano Category
A1	37	38	15	106	10	3	I
A2	56	30	26	81	7	9	O
A3	116	44	13	24	9	3	O
A4	58	60	11	68	9	3	A
A5	62	31	19	78	15	4	O
A6	23	26	9	125	15	11	I
B1	143	23	16	19	6	2	O
B2	96	58	6	41	8	0	O
B3	70	51	13	65	10	0	O
B4	87	50	6	60	6	0	O
B5	70	57	11	62	6	3	O
B6	149	21	13	17	8	1	O
B7	133	34	12	21	7	2	O
B8	58	41	9	95	3	3	O
B9	134	30	11	28	5	1	O
B10	74	47	14	71	3	0	O
B11	78	42	21	61	5	2	O
B12	75	45	22	62	4	1	O
C1	114	39	14	35	6	1	O
C2	48	24	14	101	20	2	I
D1	45	48	18	89	9	0	A
D2	101	50	7	45	5	1	O
D3	83	36	15	66	6	3	O
D4	39	15	24	70	54	7	I
D5	108	21	13	61	6	0	O
E1	61	27	14	96	10	1	I
E2	24	14	19	123	26	3	I

Dimension (attribute)	O	A	M	I	R	Q	Kano Category
A1	16	17	2	16	3	3	A
A2	18	16	4	14	5	0	O
A3	24	14	1	12	4	2	O
A4	16	19	3	14	3	2	A
A5	23	7	4	16	6	1	O
A6	14	12	3	25	2	1	O
B1	32	14	1	5	3	2	O
B2	23	24	0	5	5	0	A
B3	19	20	4	10	4	0	A
B4	28	19	2	3	5	0	O
B5	17	22	2	12	4	0	A
B6	32	13	1	5	4	2	O
B7	20	19	2	12	3	1	O
B8	22	10	5	14	5	1	O
B9	25	20	1	4	5	2	O
B10	14	17	4	15	6	1	A
B11	14	19	2	16	5	1	A

B12	14	23	7	9	3	1	A
C1	22	12	3	16	3	1	O
C2	17	11	2	22	3	2	O
D1	13	21	2	15	5	1	A
D2	19	23	3	7	4	1	A
D3	20	16	4	12	3	2	O
D4	7	9	4	16	18	3	R
D5	24	15	1	14	2	1	O
E1	19	10	3	22	1	2	O
E2	11	7	3	33	1	2	I

	Average	
	Importance Level	Scoring
School A	4,127	3,825
School B	4,192	3,857

There are nineteen one-dimensional educational services quality for school A, and fiveteen for school B for the same category. It means the students of the school got the perception that majority of the needs/want related to the learning process are fulfilled.

Using the cartesian diagram in figure 1, we found three dimensions of service in first quadrant (high level of importance, but get lower score), for school A. There are:

- cleanliness of the toilet

- Available of parking area

- Textbook availability

There are five dimensions of service found in first quadrant, for school B:

- Calendar of activities available at the beginning of the school year

- Excellence library

- sport facilities

- extracurricular activities facilities

- Computers adequacy provided in the lab for students

Quantitative data for each dimension of service are shown in table 3 below:

Table 3. Quantitative Data for Importancy and Scoring

Some dimensions of services are plotted in quadrant 1 (three for school A, and five for school B). In this area, the students need/want more improvement. They stated that the dimensions is very important, but the school member (headmaster, teachers, etc.) delivered them in bad services. So, the students gave lower score (lower than the averages of all the dimensions).

4. COMPARISON BETWEEN SCHOOLS

Using Cartesian Diagram and Kano Category of Dimension, we have made the comparison of the implementation of the learning process in school A and school B.

The difference between school A and school B is related to the facilities. Students of school A more concerned for supporting facilities, such as parking areas and the cleanliness of the toilet. Instead, students of school B more concerned for the availability of computer labs, as one of some main facilities related to learning process.

There is a similarity of two schools: the student perception are focused to teacher performance. They are concern to the competencies for teaching, the educational background of their teachers and the preparation for teaching.

5. CONCLUSION

After completed the verification test and validation test, we knew that the twenty-eight questions have represented the Parasuraman's five dimensions of service quality in educational process.

Based on our questionnare, the teachers are the central of educational process. The teacher's role is a very important factor in the educational process, followed by other supporting facilities.

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PHOTOS AND INFORMATION

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