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IMPROVING THE SERVICE QUALITY BY USING IMPORTANCE PERFORMANCE ANALYSIS AND HOUSE OF QUALITY IN SMK PLUS LABORATORIUM INDONESIA, KARAWANG

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ABSTRACT

To face fiercer competition, SMK Plus Laboratorium Indonesia Karawang is determined to improve the satisfaction of their customers, especially the parents of students. Unfortunately, the data show the number of students who come out and move to another school after parents fancy quite large with an average of 9% per year, which is one of indication the existence of student dissatisfaction with the services provided by SMK Plus Laboratorium Indonesia.

This study aimed to determine whether the services provided by SMK Plus Laboratorium Indonesia are in accordance with the expectations of its customers, and to get advice on improving the quality of service.

The results of the data processing and analysis with IPA (Importance Performance Analysis) method show that the quality of services provided SMK Plus Laboratorium Indonesia has not meet customer expectations. Furthermore, by using HOQ (House of Quality) method, it's obtained 6 (six) key recommendations that should be done to improve the quality of the service, those are: (1) holding a workshop or inhouse training about teacher's skill at least once a year, (2) distributing questionnaires about teacher performance assessment of each end of the semester, (3) study visits to the better schools at once in 6 months, (4) engaging all teachers in the development of KTSP, syllabi, and lesson plans, (5) delegating administration staff to participate in training abou administrative once a year, (6) excellent service training once a year.

Keywords*: service, educational service, service quality, importance performance analysis, house of quality*

1. INTRODUCTION

Karawang regency in West Java is the area being switched from an agricultural area to an industrial area, which is marked by the establishment of many companies in the industry in some areas. This causes the need for skilled labor, especially at the secondary level, increased. To meet labor needs, then erected various SMK (vocational high school), either by the government or the private sector, which in turn led to increased competition among vocational school in getting new students. Currently, the number of vocational schools in Karawang has reached about 70 pieces.

SMK Plus Laboratorium Indonesia is one of the 70's vocational schools in Karawang. In order to face the fiercer competition, SMK Plus Laboratorium Indonesia is committed to providing outstanding service customers. However, data show that the number of students who come out and move to another school after the parents fancy every year progressively increased with the average number per year of 9% of the total students. The large number of students who came out and moved to the another school to be one sign of the dissatisfaction of students on educational services provided by SMK Plus Laboratorium Indonesia.

Given the matters described above, SMK Plus Laboratorium Indonesia needs to analyze how far the level of service given to customers, in the hope of improving the quality of services in the future so that it can compete with other schools.

Based on the above, the issue in this study is formulated as follows:

a. Is the quality of care that has been provided by SMK Plus Laboratorium Indonesia in accordance with the expectations of parent students as its customers?

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b. What is the recommendations for improvements the service quality of SMK Plus Laboratorium Indonesia?

The purpose of this study is as follows:

a. To determine whether the quality of service that has been provided by SMK Plus Laboratorium Indonesia in accordance with the expectations of its customers or not.
b. To recommend the improvements in service quality SMK Plus Laboratorium Indonesia.

While the benefits of this research is to provide input to the management of SMK Plus Laboratorium Indonesia as a school evaluations in designing strategies and implementing programs of improvement in the quality of service to customers in the future.

2. LITERATURE REVIEW

Services, according to Kotler (2002), can be defined as any action or activities offered by one party to the other, which basically is something intangible and does not result in any ownership. A product / service may result from or may not be related to the physical product.

Parasuraman et al. in Tjiptono (2005) defines quality of service from the customer view seen by an internal measure performance, it can be seen that the quality of service is the customer's perceptions of the advantages of a ministry. Quality of service is an important element in a service organization. This is caused by the quality of service is one of the tools used to measure the performance of a service organization, the quality of service should receive serious attention from the management service organization. An organization must have a clear intention to establish service quality to be achieved by a service organization.

Customer perception of the service quality can be measured and evaluated through the dimensions of service quality as stated by Parasuraman et al. in Tjiptono (2005), namely: (1) tangibles, (2) reliability, (3) responsiveness, (4) assurance, and (5) empathy. The five dimensions of quality is better known as a method servqual (service quality).

Atina (2010) suggested that servqual can be used to tell how big the gap of quality of service in the company, and what are the factors that cause this gap, so that the solution can be sought. Supranto in Atina (2010) states that the concept of Importance Performance Analysis is actually derived from the concept of Service Quality (SERVQUAL), it contains how to translate the concept of what is desired by consumers is measured in relation to what should be done by a company that produces quality products, both tangible and intangible.

Furthermore, Atina (2010) states that to measure the willingness of consumers is not easy. This is because each company has different goals for each of their actions in order to meet consumer desires. For example, the decline in prices. According to consumers, perhaps it is best to be done by the company. However, the company must have a clear accounting of the price of the product. Consequently, the relationship between the desires of consumers and the company wishes to be biased

If the concept servqual only analyzed the gap or the gap between the desires or expectations of the consumer with the performance given by the manufacturer, then the concept of importance performance analysis, it can be analyzed regarding the importance of the variables in the eyes of the consumer with the company's performance. Thus, companies will be more focused in executing its business strategy in accordance with the priorities of the most dominant consumer interests.

The analysis begins with a questionnaire distributed to the customer, each item in question has two answers Likert scale, which is according to the customer it is important to do or be implemented and how it is doing, good or bad. Furthermore, levels of these elements will be described in Cartesian diagram.

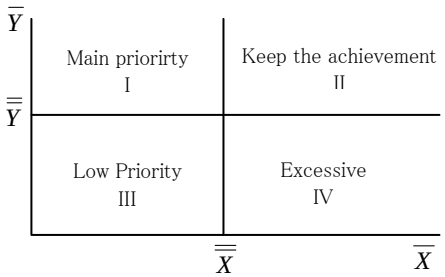

Figure 1. Cartesian Diagram
(Source: Atina, 2010)

The four quadrants into four strategies, depending on which quadrant the consumer ratings on products or services issued. For the assessment of the four quadrants can be the explanation below:

a. The first quadrant (I), requiring treatment to be prioritized by the management level, since the rate of interest are high and low performance satisfaction.
b. The second quadrant (II), showing the area to be preserved, because the high level of interest while performance satisfaction levels are also high.
c. The third quadrant (III), as a low priority area, because the low level of interest while performance satisfaction levels are also low. In this quadrant, there are several factors that are less important effect on consumers. However, companies should always ask for something

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better among the other competitors.

d. The fourth quadrant (IV), categorized as redundant, because there are factors that the consumers are not important, but the company is very well executed. In addition due to a low interest rate while the high performance level of satisfaction, so that's not a priority to be addressed.

Cohen (1995) defines Quality Function Deployment is a structured method that is used in the process of planning and product development to establish specification needs and desires of consumers, as well as systematic evaluation and capability of a product or service to meet the needs and desires of consumers.

The main tool is the matrix of QFD House of Quality (HOQ), where the results achieved through the use of inter-departmental or functional team to gather, interpret, document and prioritize customer needs.

In QFD, an interconnected matrix was developed to establish the relationship between customer desires and technical parameters of the product or service. It should be noted that QFD can be applied to analyze the services as well as design and manufacturing of a product. And the number of matrices can be used to analyze the bit (1) or a lot depending on needs. On the left hand side (part 1), consists of a list containing the input of consumer desire. Put translated into technical output, which included in part 2 of that matrix. Output from matrix 2 to be input to matrix section 3, as shown in Figure 2.

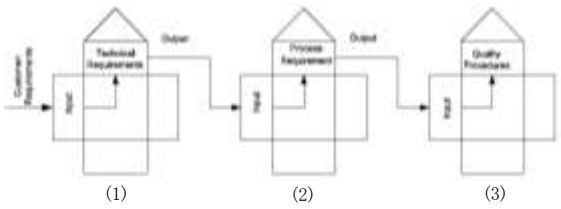

Figure 2. *House of Quality (HOQ)* Matrix
Source : Groover in Puspita (2010)

3. METHODOLOGY

This type of research conducted, including the type of applied research, where the results of this research can be applied in practice to solve problems or phenomena that occur in the field. In accordance with the purpose of the study, the results of this research can be used to improve the quality of services provided by SMK Plus Laboratorium Indonesia to its customers. The approach of this research is a quantitative approach.

The required data obtained by interview, literature, documentation, and dissemination of questionnaires. Primary data collected are:

a. Data resulting from the spread of the questionnaire, consisting of:
   1) Answer from the respondents (parents of students) regarding expectations or importance level and performance level of the services provided by SMK Plus Laboratorium Indonesia.
   2) Answer of the parents of student of SMK X and Y as a comparison of performance against SMK Plus Laboratorium Indonesia (to develop HOQ)

b. Interview data, consisting of: (1) technical response (technical response), (2) the value of the goal, (3) the value of sales points, (4) the relationship between customer needs with technical response, (5) technical correlation, (6) process requirements, (7) the relationship between the technical response to the requirements process, (8) quality procedures, and (9) relationship process requirements with quality procedures.

The population of the objects in this study were all parents of students of SMK Plus Laboratorium Indonesia in the school year 2011/2012. The data show that the number of students of SMK Plus Laboratorium Indonesia in the school year 2011/2012 is 264 peoples. Therefore, data on the number of parents of students to adjust to the number of students.

The number of samples or respondent determined using the Slovin formula at an error rate of 5%, which amounted to 160 parents of students.

4. RESULTS AND DISCUSSION

Preliminary Data Collection and Processing

The data required in this study consisted of two types, those are data on the importance level and data on the performance level of the services provided by SMK Plus Laboratorium Indonesia in terms of subscribers. Both the data obtained through the distribution of questionnaires. The questionnaire used in this study refers to the model proposed by Zeithaml et al. and developed by Arsyad (2008), then by the researchers modified and adapted to the National Education Standards and grains questions in school accreditation issued by BAN-S/M (National Accreditation Board of School/ Madrasah.

Before the questionnaire distributed to all respondents, the questionnaire was distributed to the 30 (thirty) first responders as a preliminary study. If the data from these questionnaires initial deployment declared valid and reliable, the questionnaire will be distributed again to all respondents.

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The results of testing the validity and reliability of the data showed that all data is valid and reliable.

Advanced Data Collection and Processing

The results of preliminary data processing indicates that the data is valid and reliable, so the questionnaire can be used for further data collection and processing. As has been established earlier, the number of samples taken as respondents in this study is 160 (one hundred sixty) peoples, and thus need to be further distributing questionnaires to 130 (one hundred thirty) remaining respondents. . After making a complete distribution of questionnaires to all respondents who have previously determined, the next step is to test the adequacy of the data that serves to determine whether the data is retrieved or not enough to represent the population. This test is performed to determine how the amount of data required minimum. To determine the amount of data (sample) minimum that must be acquired, calculated using the formula of Paul Leedy (Arikunto, 1997).
The test results showed that the amount of data collected stated enough, and can be used for further data processing.

Importance Performance Analysis (IPA)

a. Gap Level
The gap level calculated in this study is the fifth in the framework servqual gap, ie the gap between perceived service (performance level) to the services expected by the consumer (importance level). Recapitulation of importance, performance, and the gap level of the variable quality of service is shown in the following table.

Table 1. Recapitulation of importance, performance, and the gap level

Quality Dimension	No	Attribute	Performance Average (X)	Importance Average (Y)	Gap	Quality Dimension's Gap Average
Tangibles	1	X1	3,25	4,51	-1,25	-1,07
	2	X2	3,25	4,38	-1,12	
	3	X3	3,20	4,28	-1,08	
	4	X4	3,18	4,32	-1,15	
	5	X5	3,02	4,30	-1,28	
	6	X6	3,0	3,97	-0,94	
	7	X7	3,05	3,95	-0,90	
	8	X8	3,09	4,06	-0,97	
	9	X9	3,25	4,20	-0,95	
	10	X10	3,22	4,16	-0,94	
	11	X11	3,11	4,28	-1,17	
	12	X12	3,19	4,29	-1,09	
	13	X13	3,11	4,18	-1,07	
Reliability	14	X14	3,11	4,23	-1,12	-1,13
	15	X15	3,10	4,38	-1,29	
	16	X16	3,06	4,10	-1,05	
	17	X17	3,12	4,34	-1,23	
	18	X18	3,10	4,40	-1,29	
	19	X19	3,18	4,32	-1,14	
	20	X20	3,04	4,16	-1,12	
	21	X21	3,14	4,27	-1,13	
	22	X22	3,06	4,33	-1,27	
	23	X23	3,34	4,16	-0,82	
	24	X24	3,10	4,16	-1,06	
	25	X25	3,01	4,01	-1,00	
	26	X26	3,14	4,27	-1,13	
	27	X27	3,18	4,32	-1,14	
	28	X28	3,21	4,22	-1,01	
	29	X29	3,27	4,19	-0,92	
	30	X30	2,97	4,44	-1,47	
	31	X31	3,12	4,19	-1,07	

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Quality Dimension	No	Attribute	Performance Average (X)	Importance Average (Y)	Gap	Quality Dimension's Gap Average
Responsiveness	32	X32	3,17	4,32	-1,15	-1,00
	33	X33	3,17	4,08	-0,91	
	34	X34	3,24	4,23	-0,99	
	35	X35	3,26	4,12	-0,86	
	36	X36	3,22	4,25	-1,03	
	37	X37	3,19	4,13	-0,94	
	38	X38	3,13	4,26	-1,13	
Assurance	39	X39	3,35	4,36	-1,01	-0,97
	40	X40	3,34	4,21	-0,87	
	41	X41	3,29	4,12	-0,83	
	42	X42	3,27	4,16	-0,89	
	43	X43	3,22	4,13	-0,91	
	44	X44	3,39	4,37	-0,98	
	45	X45	3,25	4,32	-1,06	
	46	X46	3,19	4,19	-0,99	
	47	X47	3,19	4,19	-1,00	
	48	X48	3,09	4,23	-1,14	
Empathy	49	X49	3,01	4,16	-1,15	-0,99
	50	X50	2,99	4,20	-1,21	
	51	X51	3,12	4,20	-1,08	
	52	X52	3,41	4,15	-0,74	
	53	X53	3,15	4,02	-0,87	
	54	X54	3,18	4,17	-0,99	
	55	X55	3,30	4,34	-1,04	
	56	X56	3,15	3,95	-0,81	

Source: Result of Data Processing, 2012

Based on the table above, it can be seen that the gap around the quality of service variable, is negative, which means that the services provided by SMK Plus Laboratorium Indonesia has been unable to meet the expectations of its customers.
Based on the dimension of service quality, parents of students consider that the worst service quality dimension is reliability with average of gap level is -1,13. On the other hand, the parents of students also consider that the best service quality dimension is assurance with average of gap level is -0,74.

Meanwhile, based on each service quality attribute, the parents of students consider that the worst service quality attribute is the 30th attribute, that is the teacher or class trustee quick and responsive in overcoming grievances or complaints of parents of students, with point of gap level is -1,47. On the other hand, the parents of students also consider that the best service quality attribute is the 52th attribute, that is System notifications about of student activities that organized by the school, with point of gap level is -1,47.
Furthermore, to determine the position of each service quality attribute, the data on the average of importance level and the average of performance level are plotted in the cartesian diagram, so the decision about service quality attribute that have to be improved at first can be made.

2) Cartesian Diagram Analysis
Cartesian diagram are used to determine the position of each quality of service variable whether is in quadrant I, II, III, or IV, where each quadrant contains different consequences. The Cartesian diagram based on table 1 can be seen in the following figures.

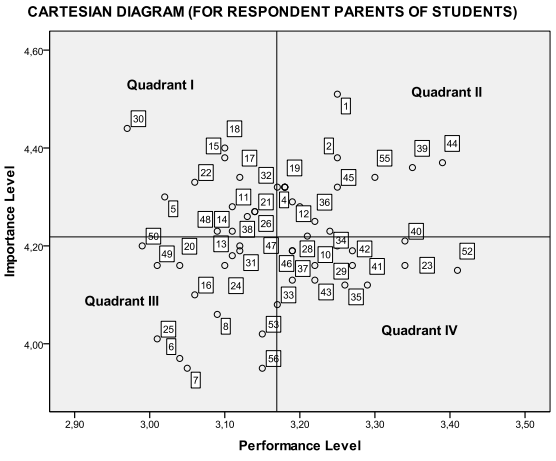

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Figure 3. Cartesian diagram
(Source: Results of Data Processing, 2012)

Because of all quality service variable is negatif, then all of that variable is used to be *customer needs* in developing HOQ (House of Quality) matrix.

HOQ (*House of Quality*)

The final result of this research is the recommendation of service quality improvement that will be given to SMK Plus Laboratorium Indonesia. That recommendation is obtained by using HOQ (House of Quality) method. This research use three HOQ matrix, in order to get the optimum result.

a. HOQ Level 1: *Customer Needs to Technical Requirements*
HOQ (House of Quality) level 1 is HOQ matrix that developed to determine relationship between customer needs with technical response or technical requirements. Technical response is the effort that done by company to fulfill the customer needs.
From the previous data processing, we got 56 (fifty six) customer needs that have to be improved, those are:

Table 2. Customer Needs

No	Customer Needs
1	Rooms (classrooms, laboratories and workshops) are adequate
2	Equipments (computers, machines, whiteboards, tables, chairs) are adequate
3	Library is adequate
4	Adequate sports field and facilities
5	Adequate of support facilities (prayer house, restrooms, cafeteria, and parking lots)
6	Availability of complete and informative media (brochures, leaflets, banners, and billboards) while new students registration activities
7	Availability of complete and informative media (brochures, leaflets, billboards, and wall magazines) while teaching and learning activities
8	Module or learning materials are complete and easy to understand
9	Teachers look neat, clean, and attractive
10	Appearances of administration staff and employees are neat, clean, and attractive
11	Cleanliness and tidiness of environment
12	The arrangement of buildings and equipment
13	Schools order, regulations, and guidelines are seen and readable
14	Providing information about student grade on lesson accurately (thorough and timely)
15	Providing an accurate timetable information (thorough and timely)
16	The education calendar and a clear timetable are available
17	Discipline of teachers in attendance
18	Discipline of teachers in teaching punctuality
19	Provision of same opportunity to ask questions or discussions for every student
20	Determination of administrative costs (tuition) in accordance with the services provided compared to other schools
21	Curriculum in accordance with the vision and mission
22	Uptodate and various learning methods
23	Provision of individual task or exercises that support the subject matter
24	Provision of group task or exercises that support the subject matter
25	Holding extra-curricular activities
26	Teaching in schools affect to increase students basic skills
27	The development of student's good character (responsibility, honesty, respect, compassion, discipline, empathy, etc.)
28	The ability of administration staff and employees in providing services
29	The ability of administration staff and employees in helping students to overcome their problem
30	Teacher or class trustee quick and responsive in addressing the problems experienced by the student or parent of students complaints
31	Teacher or class trustee provide positive feedback on student grievances or parents of students complaints
32	Teacher or class trustee easily contacted or met to consult
33	Administration staff and employees quick and responsive in addressing the problems experienced by the student or parent of students complaints
34	Administration staff and employees give positive feedback to the student grievances or parents of students complaints
35	Administration staff and employees easily contacted or met to consult
36	Good and uncomplicated administrative procedures
37	The explanation given the school if there are any questions from parents of students
38	Knowledge and skills of teacher or class

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No	Customer Needs
	trustee in providing clear and understandable information to students and parents of students
39	The friendliness and politeness of teacher or class trustee in serving students and parents of students
40	Hospitality and attention from the teacher or class trustee to receive complaints of students and parents of students
41	Knowledge and skills of administration staff and employees in providing clear and understandable information to students and parents of students
42	The friendliness and politeness of the administration staff and employees in serving students and parents of students
43	Hospitality and attention of the administration staff and employees in receiving complaints of students and parents of students
44	The creation of a family atmosphere among students and parents of students to teachers, administration staff, and employees
45	Students perceived feeling of safety while in the school area
46	Transparency in the administration management and information delivery that needed by students and parents of students
47	Good school image in the community
48	The guarantee to students to work after passing through special employement exchange
49	Communication between the schools (in particular class trustee) with a parent of the student
50	Availability of telephone or e-mail to serve and to receive complaints
51	Information on student learning outcomes at the end of each semester
52	System notifications on a range of student activities that organized by the school
53	The involvement of parents of students in determining school program or activities
54	The activities of the counseling or career guidance
55	Availability scholarships for all students (especially students can not afford)
56	Administration staff and employees provide services outside office hours

Source: Result of Data Processing, 2012

To respond to the customer needs, then performed the preparation of planning matrix, technical requirements or technical response, relationship matrix between customer needs with technical response, technical correlation, and technical matrix. The end result of this phase is a matrix House of Quality (HOQ) Level 1: Customer Requirements to Technical Requirements as shown in Appendix 1.

Furthermore, to get a better recommendation, it is necessary to the preparation of the HOQ matrix level 2, where the technical response of HOQ level 1 will be input for the HOQ level 2.

b. HOQ Level 2: Technical Requirements to Process Requirements

HOQ (House of Quality) level 2 is HOQ matrix that was developed to establish the relationship between the technical response (technical or technical response requirements) with the needs of the process (process requirements). The need for a method or process that is considered an attempt by the company to do to realize the technical response, which in turn can answer customer needs.

From the preparation of the HOQ matrix level 1, is known to have 25 (twenty five) technical responses proposed to address customer needs with value weighting of each of the technical response. In preparation HOQ level 2, these technical responses to be input that have to be answered by the process equirements. To realize the 25 technical responses, the management of SMK Plus Laboratorium Indonesia propose 23 (twenty three) process requirements that is considered to embody the technical response. The end result HOQ matrix formulation level 2 can be found in Appendix 2.

Process requirements that proposed in developing HOQ matrix level 2 has not been detailed, so it can not be implemented by the company. To further analyze the process requirements, we should to formulate HOQ matrix level 3, where the process requirements of the HOQ level 2 will be input for the HOQ level 3.

c. HOQ Level 3: Process Requirements to Quality Procedures

HOQ (House of Quality) level 3 is HOQ matrix that developed to realize the process requirements through the establishment of quality procedures. Quality procedures are more steps that need to be detailed by the company to realize the pre-determined process requirements.

From the preparation of the HOQ matrix level 2, is known to have 23 (twenty three) proposed a process requirements to answer technical response with weight value of each process requirement. In preparation HOQ level 3, the process requirement to be embodied in the form of input quality procedures. To realize the 23 process

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requirements, the management of SMK Plus Laboratorium Indonesia propose 24 (twenty four) quality procedures that are considered to embody the process requirements. Results of HOQ matrix formulation level 3 are listed in Appendix 3.

From level 3 HOQ matrix can be seen that the attributes of Conducting workshops or in house training on teacher competence at least once a year is the quality of service attributes most valued, followed by other quality procedures. Results of HOQ level 3 is once again a candidate for recommendation to be submitted to improve service quality in SMK Plus Laboratorium Indonesia.

Implications of Research Findings

Based on the results of data processing in preparation HOQ matrix level 3, is known to have 24 (twenty-four) offered quality procedures to improve the service quality of SMK Plus Laboratorium Indonesia. By using the Pareto principle or 20-80 diagram, researchers grouped the twenty-four quality procedures into three (3) groups, that is group A which will be a top priority to be implemented, as the second priority group B and group C as the third priority. The calculations show that 6 (six) quality procedures including group A, 6 (six) quality procedures including group B, whereas 12 (twelve) other quality procedures including group C.

The six quality procedures or actions that belong to the group A and the top priority in improving the service quality of SMK Plus Laboratorium Indonesia, that is as follows:

Table 3. Recommended Improvements in Service Quality of SMK Plus Laboratorium Indonesia

No	Quality Service Improvement Recommendation
1	Conducting workshops or in house training on teacher competence at least once a year
2	Distribution of teacher performance appraisal questionnaire each end of the semester
3	Study visits to better schools every 6 months
4	Engaging all teachers in the development of curriculum, syllabi, and lesson plans
5	Delegating administration staff in administrative training once a year
6	Excellent service training once a year

Source: Result of Data Processing, 2012

Limitations of Research

Satisfaction on the school services in this study is based only on 1 (one) type of customers as respondent, that is the parents of students. According to Praptiningsih (2010), customers of school are divided into 2 (two), those are internal and external customers. Internal customers are teachers and administration staff, while students, parents of students, and the user or recipient of graduates belonging to the external customer. Thus, this study not involving another 3 (three) types of school customers, those are students, the teachers and administration staff, and also the user or recipient of graduates (universities, industry, and society). In the future, further research needs to be done by involving the school customer types except the parents of students.

5. CONCLUSIONS

Conclusion

a. The quality of service that provided by SMK Plus Laboratorium Indonesia has not meet the expectations of parents of students as its customers, it is evident from the gap of service quality attributes which are all negative.
b. Six (6) priority actions needed to improve the quality of laboratory services SMK Plus Indonesia as follows:
   1) Conducting workshops or in house training on teacher competence at least once a year
   2) Distribution of teacher performance appraisal questionnaire each end of the semester
   3) Study visits to better schools every 6 months
   4) Engaging all teachers in the development of curriculum, syllabi, and lesson plans
   5) Delegating administration staff in administrative training once a year
   6) Excellent service training once a year

Suggestion

Given the limitations of this study, it is advisable to conduct further research with the involvement of students, teachers, employees, and the user or recipient of graduates (universities, industry, society) as the survey respondents about the quality of school services.

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