

Examining The Students' Satisfaction of the Computer Laboratory Quality in Universitas Medan Area, Indonesia

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Abstract—ICT and higher education are now complete each other. A higher education institution needs ICT to improve their quality, and ICT tools are needed to be qualified to support the continuity of entire process in a higher education institution. As the one of learning tool, the computer laboratory of a university should be qualified and provide aids for students. The paper aims to discover the students' satisfaction regarding devices condition, staff helpfulness, educators' capability in delivering the material, and learning material from the computer laboratory. A total 168 questionnaires have been obtained from random students of Universitas Medan Area, Indonesia. The study employed the Sturges formula to classify the respondents based on service quality from the computer laboratory. The result pointed out that students perceived a very good quality of services including facilities, learning method, and learning content. Students also claimed that staffs and educators should more improve for a better quality of computer laboratory.

Keywords— Satisfaction, Computer Laboratory, Quality, University, Indonesia

I. INTRODUCTION

Facilities and infrastructure are very crucial in enhancing the quality of colleges. They become aid to achieve an effective teaching and learning process [1], especially the aspect of Information and Communication Technology (ICT) [2]. Moreover, the computer laboratory as the one of learning tool also necessary to be deliberated, which is the tool to become complement for students in the field of ICT subject [3]. Despite the usability for helping learning process, computer labs need a good maintenance and repairmen for better services.

Universitas Medan Area (UMA) as the one of largest private universities in Medan, Indonesia has support facilities to improve the learning process services by providing several computer laboratories. With the total of hundreds computers to be used daily by students, thus it is important to be concerned regarding the devices condition. Furthermore, there are also certain objects to be consider generating a qualified computer lab, namely staff and educator, room condition and especially the learning material [1], [4]. Hence, it is important to measure the service quality of the computer laboratory to fulfill the students satisfactory in the utilization, so can be support its role and function runs optimally.

In order to achieve the sustained and healthy development of colleges and universities, students satisfactory towards the facilities and infrastructure is crucial [5]. Moreover, researcher [6] stated that the quality of service facilities has an impact towards to the satisfaction of the students. So, it can be concluded that students are expected to have the qualified facilities and infrastructure. Complementary to this, Researcher [7] has been conducted a review study regarding the relationship between service quality and student satisfaction in higher education institutions. The study concluded that there is a significant impact of service quality on student satisfaction in higher education. Therefore, the paper is scrutinizing how is the students' satisfaction level in using computer laboratory facilities in several aspects, namely devices condition, staff helpfulness, educators' capability in delivering the material, and learning material.

II. LITERATURE REVIEW

There are bunch of researches have been conducted related to the students satisfaction of facilities and infrastructure condition in universities or colleges. A study by researcher [8] examined the satisfaction as perceived by the students towards university facilities and services from several factors. The factors are the condition of learning environment, laboratory, and space for learning. Researcher [9] arranged a research regarding students' satisfaction and teaching efficiency of university offer. The survey employs three main factors to be considered as the key for students' satisfaction, namely: teaching activities, information availability, and teaching materials.

Furthermore, researcher [10] stated that there are seven dimensions to illustrate the students' satisfaction, including university reputation, programs offered, quality of lecturer, learning environment, technology usage, counseling and academic advising support, and social life facilities. Similarly, researcher [11] also agreed that the student's satisfaction is influenced by services, teaching, teaching methods. Then, according to the study by researcher [12], students were generally satisfied with material content, technology use, and instructor interaction. The research outcome from researcher [13] claimed that teaching and lecturer characteristics have a significant impact to increasing student satisfaction.

Hence, according to previous studies, this study uses several aspects to measure the students' satisfaction, namely devices condition, staff helpfulness, educators' capability in delivering the material, and learning material.

The first aspect comprises of how is the condition of computer devices, including hardware and software whether they run in normally or not. Then, staff helpfulness is the second aspect that explains the role of the member in carrying out the administration tasks regarding laboratory activities. The third aspect illustrates how the educators mastery of the material, techniques in delivering material, and personal approach towards student. Lastly, the fourth aspects explain the properness and correctitude of the learning materials that presented in the laboratory.

III. METHODOLOGY

As a quantitative research, the study was conducted with survey method. Questionnaires were distributed to students of UMA who are still actively studying and who have used computer laboratory facilities from the 2018-2019 class. The research uses data which comes from Computer Laboratory Centre of UMA. Total students in first semester are about 1,131 and for the second semester, students who have used computer laboratory facilities as much as 1,357. Hence, the total populations of study are 2,488 students. To determine the sample size, the study uses the Probability Sampling method. Members of the population get the same opportunity to be selected as the research sample [14]. In addition, in determining the number of samples used, this study uses the Slovin formula, which is a calculation of the number of samples with a large population [15]. Hence, the total samples of the study are 333 students.

The study follows the method to determine the quality of computer laboratory services from researcher [16]. Firstly, the intervals are determined by using Sturges formula [17].

$$I = \frac{Rg}{K} = \frac{\text{Highest Score} - \text{Lowest Score}}{K} \quad (1)$$

Where: I = Interval

Rg = Range

K = Total of class interval

Secondly, the interval is used to classify the respondents based on service quality from the computer laboratory with a Likert scale used from 1 to 4 (with response options as follows: strongly disagree, disagree, agree, and strongly agree).

The instrument of the study is the questionnaire which related to devices condition, staff helpfulness, educators' capability in delivering the material, and learning material. A total of 15 questions are selected to determine the computer laboratory quality. The reliability of the instrument is determined by Cronbach's alpha (α) and resulting a good level of reliability as attached in Table I.

TABLE I. RELIABILITY TEST

Cronbach's alpha	Mean	Variance	Std. Deviation	N of items
0.865	49.1190	33.351	5.77503	15

In this study, the instrument validity is tested by using Pearson's correlation to measure the relationship between value of each items and mean value of total item. The correlation score are in range of 0.523 to 0.652 with the significance at the 0.01 level (**).

IV. RESULTS AND FINDINGS

The measurements were carried out by distributing 333 questionnaires. However, almost half of respondents are not sent back the responds. Thus, there are only 168 questionnaires could be examined. Furthermore, the questionnaire was tabulated to determine whether computer laboratory services were classified as very good, good, not good enough, and worse. As the total of questionnaires are 168, thus the lowest score is 168, and the highest score is 672 refer to Likert scale with 4 is the highest score option with the K score is 4. The interval of the study is determined by using equation (3.1) as follows.

$$I = \frac{672 - 168}{4} = 126$$

So for each item in the gradient indicator the quality of computer laboratory services can be measured as stated in Table II.

TABLE II. WEIGHT CLASSIFICATION

No.	Weight Score	Category
1.	168 - 294	Worse
2.	294 - 420	Not good enough
3.	420 - 546	Good
4.	546 - 672	Very good

Based on the research results, Table III illustrates the measurement of service quality from the computer laboratory in UMA.

TABLE III. RESULT OF STUDENTS' SATISFACTION OF THE COMPUTER LABORATORY QUALITY IN UMA

No.	Questions	Weight	Category
1.	Computer facilities in UMA are adequacy and good.	563.3	Very good
2.	The laboratory room was comfortable.	564.3	Very good
3.	The staff member served the students well.	529.1	Good
4.	Instructor or teaching staff is good at delivering the practical material.	542.2	Good
5.	Learning methods such as material explanation and directly practiced by students are good methods.	573.4	Very good
6.	Microsoft Office (Word, Excel, and Power Point) are still needed by students for helping the assignments.	607.6	Very good
7.	I recommend that Microsoft Word learning content starts from learn to typing, setting margins, text formatting, etc.	543.2	Good

8.	Learning material such as References and Mail Merge from Microsoft Word is necessity.	557.3	Very good
9.	Microsoft Excel is very appropriate to be studied to help with class assignments.	586.5	Very good
10.	Microsoft Excel is very easy to understand, especially to use of formulas	481.9	Good
11.	Microsoft Power Point really needs to be learned to support presentations in class.	596.5	Very good
12.	After practicing in lab, i can make presentation slides with text animation, slide animations, and hyperlinks.	526.1	Good
13.	After practicing in lab, i understand about Blogs, and Blogs are very important for students.	511	Good
14.	Practicing to create a blog is very necessary to support my activities.	529.1	Good
15.	In my opinion, computer laboratory really helped me to complete my education and in the future tasks.	589.5	Very good
Mean		553.4	Very good

As expressed in Table III, Question 6 has the highest score with the weight as much as 607.6, so it can be concluded that learning material from Microsoft Office is very important among students. Word, Excel, and PowerPoint are the Microsoft Office applications that students needed for their lecturing activities. Students stated that Microsoft Word (weight = 557.3) is important to include to increase the computer laboratory quality as well as Microsoft PowerPoint (weight = 596.5). Microsoft Excel necessity is high, with the weight of 586.5 to gain the qualified computer laboratory, even it is difficult to learn and understand (weight = 481.9). However, students assumed that Blog is not so important to be study in computer laboratory.

The computer laboratory facilities are categorized as very good with the weight as much as 563.3, and the room was comfortable (weight = 564.3). Then, computer laboratory services are in a good way, the staff member served the students in a good way with the weight as much as 529.1. Similarly, students assumed that how the instructors deliver the learning material is in a good condition. Moreover, students claimed the learning method in lab is very good. The weight of Question 5 is 573.4 indicates a very good quality of learning method. Then again, students agreed that computer laboratory really helpful for them. Lastly, mean score of weight from the total questions is 553.4 which is indicating a very good quality

V. CONCLUSION

Based on the total 15 questions, mean score of weight is 553. Hence, it shows that computer laboratory services are in very good category. It is in line with the facilities such as hardware and software condition and availability. Learning method also classified as a very good quality.

Students assumed the learning material of Microsoft Office is very important and really helpful for them. They also stated that Microsoft Excel is difficult to be learn, thus instructor need to be more concern for this issue and arrange a deep teaching process. Furthermore, the services from staff need to be improving as well as the instructor. Students claimed that they perceived a good service, but a very good service that they intended

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