

DIGITALIZATION OF SERVICES FOR POLYTECHNICAL STUDENTS KUTARAJA IN INCREASING STUDENT SATISFACTION WITH APPLICATION-BASED FIRST IN-FIRST OUT (FIFO) METHOD

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ABSTRACT

Digitalization today occurs as a result of technological advances that have attracted every aspect of human activity. This is what makes a big difference in life in the world including Indonesia. Starting from industry, manufacturing, tourism, health, to the education sector. Especially during the current Covid-19 pandemic which has lasted for almost 2 years, all work activities are carried out online (in the network) which makes everyone increasingly use technology that can support their daily work. The role of technology is accelerating because all activities must be carried out anywhere, anytime, and everyone has to get used to this technological advancement. Kutaraja Polytechnic (PKR) is one of the leading private campuses in the city of Banda Aceh which also feels the change in technology from the educational aspect. When all activities must be carried out from home, the team must innovate to create easy access for students and lecturers to carry out activities in the academic community. Academic Administration Services are realized digitally by creating LMS (Learning Management System) web services, E-Learning, to the use of the Discord and JIRA Platforms in terms of services. This is done in order to improve and facilitate services to students in learning activities to measuring the level of student service satisfaction. However, the education service system that is currently running before the existence of services utilizing technology often results in errors in solving service problems, one of which is the method of solving the problem. Therefore, with technology, services to students can be handled properly with the First-in First-out (FIFO) method [1]. The purpose of this study is to improve services to students in terms of education whose impact can be on the level of student satisfaction by utilizing technology, namely the discord platform, and JIRA. By taking a quantitative approach, the population of all students of the Office Administration Study Program is 56 people. This study uses primary data sourced from direct observation and satisfaction questionnaires based on the ES-Qual which is limited to 4 dimensions, namely Efficiency, Reliability, Fulfillment, and Privacy) which are distributed to 35 samples. The data will be analyzed quantitatively using multiple linear analysis using the SPSS application.

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1. INTRODUCTION

Today, digitization takes place as a result of technological advances that have absorbed all aspects of human activity. This is what makes a big difference in life around the world, including in Indonesia. Starting from industry, manufacturing, tourism, health, to education. Especially during the current Covid19 pandemic which has lasted for almost 2 years, all work activities are carried out online (in the network), making people increasingly use technology that can support their daily work. The role of technology is

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increasing because every activity must be carried out anywhere, anytime and everyone must be familiar with this technological advancement. Kutaraja Polytechnic (PKR) is one of the leading private universities in the city of Banda Aceh, who also feel the changes in technology in terms of education. Although all activities must be done at home, the team must innovate to make it easier for students and teachers to carry out activities in the academic community. Academic administration services are made digital by creating LMS (Learning Management System) web services, E-learning, using the Discord and JIRA platforms in terms of services. This is done with the aim of improving and facilitating student services in academic activities in order to measure student satisfaction with services. However, education service systems that operated before the existence of services that used technology often resulted in errors in solving service problems, one of which was problem solving methods. Thus, with technology, student services can be managed properly using a first-in-first-out (FIFO) approach [1]. However, technology cannot completely replace the role of HR as it should be. In this case, research needs to be done to see the quality of the digitization so that it can be used as material for evaluation and improvement in the future. The problems that will be overcome in this research are:

1. Does the quality of digitizing academic services (E-core-servqual) affect student satisfaction in accessing academic services?
2. how is the level of student satisfaction who get PKR academic digital services?

In addition to using E-Learning, the use of Social Media in terms of educational services for students is also an effective means nowadays, this is because all people are no longer confused about social media applications [2]. Discord and JIRA are the social media of choice used by the Academic Administration Division (BAA) of the Kutaraja Polytechnic to serve students in terms of information and others.

A. Service

Service is an action or activity that can be provided by a company to another party, which is basically immaterial and does not require ownership, no problem. Therefore, service quality can be understood as an effort to meet consumer needs and expectations based on the accuracy of their distribution by balancing consumer expectations, which makes service quality the axis that must be managed appropriately and as much as possible to achieve the vision/mission [3]. .

B. Digitizing Services

Rapid technological advances have penetrated into the world of education. Every aspect of education must be comfortable with technology. Likewise, universities that play a role in change, strive to improve technology-based facilities and services[4]. Trying This is done to simplify the service process, especially academic services. This case observes the emergence of universities that set up information systems. Students and teachers can easily access them on the internet or web-based. The services they can take advantage of by applying directly to the academic office, should be replaced by web media services provided by academics for the benefit of students [5]. Types of Digital Academic Services at Kutaraja Polytechnic are:

1. Learning Management System (LMS)

Learning Management System (LMS) is software developed to monitor, report, evaluate and manage teaching activities. With LMS, you can not only offer quizzes, assignments, etc., but also assess student work. Therefore, LMS is evaluated as software that will greatly assist distance learning and training directly to schools or universities [6].

2. Discord

Discord is a free voice chat application that can be used to communicate. Usually this application is used by online game players. Recently, the discord application which was released in 2015 has made a comeback. In fact, the number of downloads of this application is reported to be increasing rapidly

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thanks to the popularity of the game that has penetrated today. It is not only used by gamers, education circles have also begun to explore the use of Discord [4].

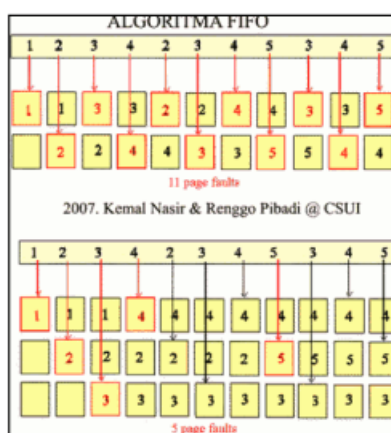
3. JIRA

JIRA by Atlassian is a project management application that has many features that can be used for various purposes. This application has many features that can help work in project management, including: Task Assignment, Scrum and Kanban Boards, Roadmaps, Customization, Connectivity with other applications to reports [7].

2. METHOD

2.1 First in First Out (FIFO) method

First in First Out (FIFO) is a queuing method that allows applying through previously entered claims reports to be considered the first to be carried. If a complaint report is issued, it will be resolved first. Ready to follow the queue flow to report the claim first time, it will be resolved first. The First in First Out algorithm is an algorithm for enforcing the disfavored queue discipline. This algorithm uses a data structure [8]. FIFO algorithm is usually used in Many types of solutions to life problems and different applications and technologies are available. FIFO itself is a sequential algorithm and loop but still on the plot or path path is first entered and then processed alternately. Here is a picture of the FIFO algorithm:



Gambar 1. Algoritma First In First Out

2.2 E-Core SERVQUAL (E-core Service Quality)

The SEVRQUAL model is a model that determines the quality of the service provided is returned to the customer. In this study, researchers used the TQM method with the SERVQUAL (Quality of Service) model. The customer satisfaction measurement model using the EServQual scale includes 7 (seven) dimensions [9]. The seven dimensions are divided into two scales, namely ESQual (E-Core-Service Quality Scale with dimensions of efficiency, reliability, fulfillment, privacy) and E-RecSQual (E-Recovery-Service Quality Scale with dimensions of Efficiency, reliability, fulfillment, privacy, responsiveness). , compensation, contact). ESQual is the basic model for creating an electronic system Quality measurement including:

a. Efficiency

According to Zeithaml et al., effectiveness is the ability of customers to visit a website, search for the desired product and information related to this product, and leave the site involving minimal effort.

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- b. Reliability (Reliability)
It is the company's ability to provide the promised service appropriately and consistently [10].
- c. Fulfillment
Fulfillment is defined as the extent to which the promises made by the website are fulfilled. How many Site appointments are kept.
- d. Privacy and Security)
Site security and protection of customer information This digitization process has not always been smooth, but continues. There have been several service outages which have caused discontent.

2.3. Needs Analysis

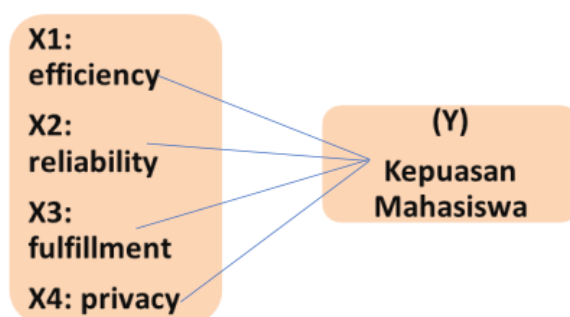
1. Data collection

Data collection is important because with data collection results will be obtained which are analyzed carefully and in accordance with the conditions in the field, because good analysis results will be obtained if the information obtained is also adequate. The data used in this study are primary data and secondary data.

- a. Primary data
Primary data is a source of research data obtained directly from the original source in the form of interviews, polls from individuals or groups (people) as well as the results of observations of an object, event or test result.
- b. Secondary Data
Secondary data is data obtained from records, books, and magazines in the form of government reports, articles, books as theory, magazines, and so on. The data obtained from this secondary data does not need to be processed again because the source does not directly provide data to the data collector.

2. Current System Analysis

This research was designed with a quantitative approach model according to Sugiyono[12] to calculate the effect of variable X (Digitalization of services; efficiency, reliability, fulfillment, privacy) on variable Y (student satisfaction). after the results of data processing are obtained quantitatively using SPSS software, the research results will be described descriptively. The conceptual framework of this research can be seen as shown below:



3. Research Instruments

The preparation of research instruments will be carried out by the chief proposer. The types of data used in this study were sourced from 2 directions, namely primary data (questionnaires) obtained

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directly from the research sample and secondary data obtained through library observations. This questionnaire will be distributed digitally by the proposing members to be filled out directly by the sample.

4. Validation and Reliability Testing

A questionnaire used in this study must meet the feasibility, to determine the feasibility of a questionnaire must be tested first using validation and reliability tests. The function of the validation test is to find out whether there are questions on the questionnaire that need to be discarded or replaced because they are not relevant. The test is based on r table, which has a significance criterion of 0.05. If r is calculated > r table and has a positive value then the question is declared valid. On the other hand, if the result is calculated < r table, then the question is invalid. This reliability test is to determine whether this questionnaire can be used more than once, at least by the same respondent. It can be concluded that the questionnaire must be consistent[12]. The Cronbach Alpha criteria used are:

Table-1 Cronbach Alpha . Criteria

Kriteria	Reliabilitas
< 0.6	Buruk
0.6 – 0.7	Diterima
> 8.0	Baik

5. Population and Sample

The population of this study is all students of level III of the Business Administration study program totaling 111 people. Then the proposer uses the sampling method stated by slovin with the following formula:

$$n = \frac{N}{1 + Ne^2}$$

Keterangan :

n = Ukuran Sampel

N = Ukuran Populasi

e = Tingkat Toleransi Error

$$n = \frac{111}{1 + (111 \cdot 0,05^2)}$$

$$n = \frac{111}{0,2775}$$

$$n = 30,8 \rightarrow 31$$

So the number of samples in this study were 35 people

3. CONCLUSION

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This study resulted in a queuing system application with the FIFO model that is able to run a queuing system built using computer technology, namely utilizing the JIRA application from ATTLASIAN, DISCORD, and Learning Management System (LMS). This system can help students to get services quickly. The queuing system built at the Kutaraja Polytechnic can provide services to students efficiently and regularly. In addition, this system is also made using computer technology can help students to find out the queue number and can find out the queue number information that is being served. This program uses the FIFO (first-in, first-out) queuing model, which means that the student who gets the queue number first will be served first.

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