The Influence of System, Information and Service Quality towards Student's Satisfaction in Using Logic and Algorithms Learning Application

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Submission date: 01-Oct-2021 11:20AM (UTC+0700)
Submission ID: 1662261589
File name: proceeding-asais-2016.pdf (550.5K)
Word count: 1875
Character count: 9807

ISSN : 2302-786X

PROCEEDINGS OF
THE FIFTH ANNUAL SOUTH EAST ASIAN INTERNATIONAL SEMINAR (ASAIS) 2016
STATE POLYTECHNIC OF JAKARTA

Thursday, November 16th, 2016
SANTIKA HOTEL - DEPOK

Annual South East Asian International Seminar

P3M POLITEKNIK NEGERI JAKARTA
NOVEMBER 2016

ISSN 2302-786X

The Influence of System, Information and Service Quality towards Student's Satisfaction in Using Logic and Algorithms Learning Application

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Abstract

Logic and Algorithms is one of the courses which provides basic knowledge of understanding the program making. According to the researches held by some colleges, it is found that Logic and Algorithms is not an easy course to be absorbed by learners. In order to solve the problem, the researcher makes a Logic and Algorithms Learning Application. It is needed an analysis of The Influence of System, Information and Service Quality towards Student's Satisfaction in Using Logic and Algorithms Learning Application which can be used as a tool in evaluating the application made.

The data were taken and analyzed by using Structural Equation Modelling (SEM) from 107 questionnaires filled by respondents who take Logic and Algorithms at Institute of Business and Informatics Stikom Surabaya. It was showed that The system quality affected the quality of information, the service quality gave influence to user's satisfaction, on the contrary, both the quality of system and information have no influence towards users of Logic and Algorithms Learning Application. It means that the usage of the application made should be lectured by the lecturers who lecture the course.

Key Words: *Logic and Algorithms Learning Application, the quality of system, Information Quality, Service Quality.*

1. INTRODUCTION

Logic and Algorithms is one of the courses which provides basic knowledge of understanding the program making. If the student succeeds in understanding that course, he will face no difficulties in understanding the other courses related to programming in the next semesters. The fact, according to the research held by some universities, it was found that Logic and Algorithms is difficult subject to be learnt by students. One of the universities that face the diffculty is Institute of Business and Informatics Stikom Surabaya. Based on database monitoring, it was known that more than 80% freshmen of Business and Informatics Stikom Surabaya Institute have no capabilities in mathematics logic as it is expected. In order to overcome this problem, it is made a Logic and Algorithms Learning Application which provide easiness for students in learning that course. This application consists of basic concept of data processing which forming an algorithms, basic concept of algorithms arrangement using flowchart, and algorithms arrangement using flowchart for array.

Figure 1. Learning Display of Sequential Process

ISSN 2302-786X

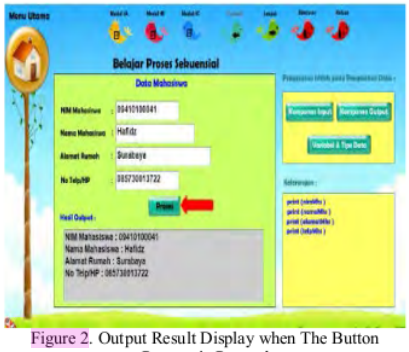

Figure 2. Output Result Display when The Button Process is Pressed

Figure 3 Display of term marker of Input component, output component, variable and data type

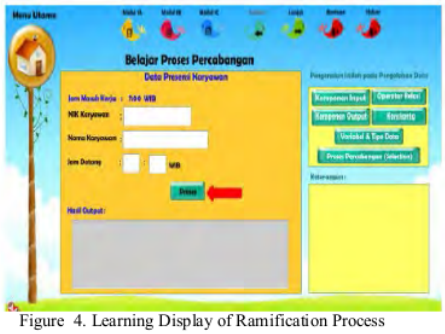

Figure 4. Learning Display of Ramification Process

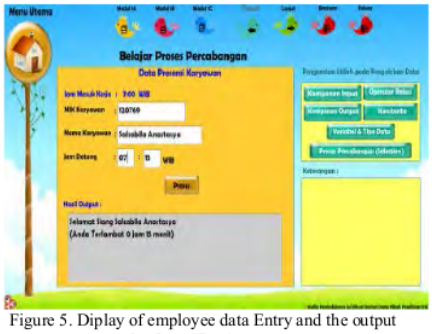

Figure 5. Diplay of employee data Entry and the output result of ramification process

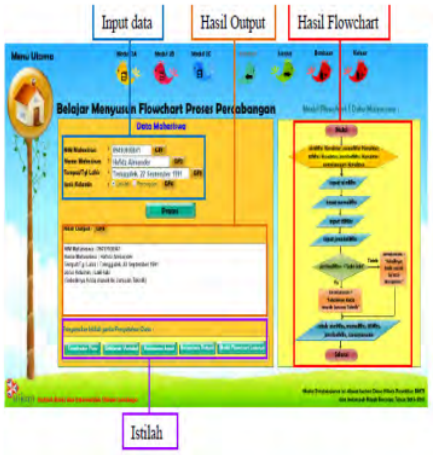

Figure 6. Display of data entry and present flowchart result

Figure 7. Display of Student data entry and present the output result on Module 2C

Logic and Algorithms Learning Application has been applied in Institute of Business and Informatics Stikom Surabaya, unfortunately in applying this application, it is needed an analysis on The Influence of System, Information and Service Quality towards Student's Satisfaction in Using Logic and Algorithms Learning Application. This analysis is conducted as input materials in evaluating the application

2. METHODOLOGY

2.1 Sample and Population

The data of this research was taken from 107 students who follow the course of Logic and Algorithms.

2.2 Data Collection Technique

Data is collected by using two ways. They are (1) Library Rsearch and (2) Field Research. Libray research is used to collect data of previous research, theories and the other supporting data which support this research. Field research is used to collect data from respondents. Data collection is conducted by using questionnaire survey. Questionnaires are distributed to respondents and subsequently it is processed and analyzed.

2.2.1 Conceptual Model

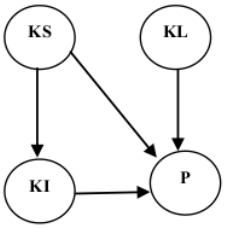

Image 8 Conceptual Model

2.2.2 Hypothesis :

1. Allegedly there is correlation between quality system (KS) user's satisfaction (P)
2. Allegedly there is correlation between information quality (KI) and user's satisfaction (P)
3. Allegedly there is correlation between quality system (KS) and information quality (KI)
4. Allegedly there is correlation between service quality (KL) user's satisfaction (P)

2.3 Operational Definition of Quality System

According to DeLone dan McLean (2003), quality system is the feature chaesteristic of the desired information system itself. According to Risdiyanto (2014), indicator of variable which is alleged influences user's satisfaction (P) covering

a. Quality System (KS) :
   1. I master the usage of this learning application (KS1)
   2. This learning application is easily to be learnt (KS2)
   3. Thi learning application can make me getting the information promtply (KS3)
   4. This learning application can make understanding the course materials faster (KS4)
   5. This learning application can help me getting the course material easily (KS5)
   6. This learning application can is completed with the feature and function which supports the making of campus task (KS6)
   7. This learning application can cannot be easily infected by virus (KS7)

b. Information Quality (KI) :
   1. This learning application produces accurate output (KI1)
   2. I can easily find something which I am looking for in this learning application (KI2)
   3. This learning application is complete and understandable (KI3)
   4. I always use this application in weekly lecture (KI4)
   5. I consider the output of this application support my study (KI5)

c. Service Quality (KL) :
   1. Lecturer has explainned how to use this learning application (KL1)
   2. Lecturer always responds related questions on the usage of this learning application (KL2)
   3. Institution has supported the usage of this learning application (KL3).

d. Satisfaction (P) :

1. The usage of this learning application is very interesting and enjoyable (P1).
2. The usage of this learning application can accelerate the understanding of the course (P2).
3. I ask my other friends to use this application (P3).

2.4 Location and Date of Research

This research was conducted on students of Business and Infromatics Stikom Surabaya Institute. This research was conducted in August 2016.

2.5 Population, Sample and Sample Collection Technique

The population of this research is 107 students who take Logics and Algorithms. Sampling technique used in this research was total sampling, so the sample of this research is 107 students.

2.6 Validity and Reliability Test

The test was using SPSS17, it was obtainned that all indicators all valid and reliable

3. RESULT AND DISCUSSION

3.1 Overview

Based on data processing, the overall data is in the following:

Table 1. System Quality (KS)

No.	Indicator	Mean	StDev
1	KS1	3,8	0,8
2	KS2	3,8	0,7
3	KS3	3,8	0,8
4	KS4	3,7	0,9
5	KS5	3,6	0,9
6	KS6	3,9	0,7
7	KS7	3,8	0,7
Quality System		3,8	0,8

Table 2. Information Quality (KI)

No.	Indicator	Mean	StDev
1	KI1	3,7	0,8
2	KI2	3,5	0,8
3	KI3	3,8	0,8
4	KI4	3	1,1
5	KI5	4	0,8
Information Quality		3,6	0,9

Table 3. Service Quality (KL)

No.	Indikator	Mean	StDev
1	KL1	3,6	0,7
2	KL2	3,4	0,6
3	KL3	3,2	0,8
Service Quality		3,4	0,7

Table 4. Satisfaction (P)

No.	Indicator	Mean	StDev
1	P1	3,7	0,8
2	P2	3,8	0,7
3	P3	3,8	0,7
satisfaction		3,8	0,7

3.2 Sem Analysis

After other presumes are fulfilled, such as; Normality test, singularity test and outlier, then it is preceeded to causality test showed in image 9.

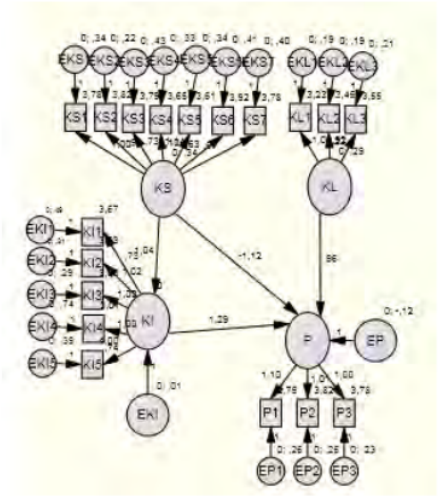

Figure 9 the correlation of Eksogen variable toward Endogen variable

Table 5. The result of Satisfaction Test

Criteria	Cut – Off Score	Calculation Result	Description
Chi – Square	Diharapkan kecil	342,13	Good enough
Significance Probability	≥ 0,05	0,000	Less better
RMSEA	≤ 0,08	0.08	Good
GFI	≥ 0,90	0,87	Slightly good
AGFI	≥ 0,90	0,86	Slightly good

CMIN/DF	≤ 2,00	2,05	Good
TLI	≥ 0,95	0,83	Slightly good
CFI	≥ 0,95	0,86	Slightly good

Table 5 shows eight criterion used to measure whether a model is feasible or not stated that the model is good or close to good. It can be considered that the model is acceptable which means the there is congruence between model and data. From the appropriate model, it can be intepreted as path coefficients. The path coefficients are hyphothesis in this research which can be presented in the following structural equation:

KI = 0,038 KS

P= -0,118 KS+0,287 KI + 0,957 KL

Table 6 The Result of Path Coefficient Satisfaction Model.

Variable	Coef.	C.R.	Prob.	Description.
System Quality (KS) → Information Quality (KI)	0,038	7,154	0.000	Sig
System Quality (KS) → satisfaction (P)	-0,118	-0,387	0.699	Not Sig.
Information Quality (KI) → Satisfaction (P)	0,287	0,466	0,641	Not Sig.
Service Quality (KL) → satisfation (P)	0,957	9,583	0,000	Sig.

According to the test result, it is showed that:

a. There is a positive significant correlation between system quality and information quality. It means the better the quality system, the better information quality of this Logic and Algorithms Learning Application.

b. There is a positive significant correlation between service quality and satisfaction. It means that the better service quality, the higher user's satisfaction in using this Logic and Algorithms Learning Application. Based on table 3, the highest mean is on the indicator of Lecturer has explainned how to use this learning application (KL1), It means that the usage of the application made should be lectured by the lecturers who lecture the course.

4. CONCLUSION

1. System Quality influents information quality that means the higher quality system, the better information system of logic and algorithms application.
2. Service quality influents student's satisfaction using Logic and Algorithms Application which means the better service quality, the better student's satisfaction.
3. System quality doesnt influent students's satisfaction using the Logic and Algorithms learning application.
4. Information quality doesn't influent student's satisfcation using logic and algorithms learning application.

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