

Evaluation of TOFAS E-Learning User Satisfaction Using the EUCS Method on Grade IX Students of SMP Negeri 5 Batukliang

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ABSTRACT: The development of information technology has driven the transformation of learning methods from face-to-face to digital-based, one of which is through e-learning platforms. SMP Negeri 5 Batukliang has implemented the TOFAS (Technology of Online Fast Application System) e-learning platform as an online learning medium. This study aims to evaluate the level of satisfaction of grade IX students with the use of TOFAS using the End-User Computing Satisfaction (EUCS) method. The EUCS method measures five main dimensions: content, accuracy, format, ease of use, and timeliness. This study uses a descriptive quantitative approach with a survey method involving 57 students as a sample taken from a total population of 66 students. Data were obtained through questionnaires and analyzed using Microsoft Excel and IBM SPSS, with validity and reliability tests as testing instruments. The results showed that generally, students were satisfied with the TOFAS platform across all EUCS dimensions, with the average satisfaction value falling into the "satisfied" to "very satisfied" category. These findings are expected to provide input for schools and TOFAS developers to improve the quality of the online learning system to be more effective and according to user needs.

Keywords: E-learning, TOFAS, User Satisfaction, EUCS, SMP Negeri 5 Batukliang.

I. INTRODUCTION

Information technology has brought information systems that are now applied in various fields, such as government, economy, industry, and education. In the world of education,

learning methods that were originally conducted face-to-face in the classroom have shifted towards online learning using digital media. This change has occurred as a result of rapid technological developments. Examples of using information technology to support online teaching and learning activities include the use of WhatsApp Groups, E-learning, Google Classroom, Zoom, and other platforms (Nurlatifah, 2022). The advancement of information technology has had a significant impact on education, especially in supporting the learning process. This is demonstrated by the presence of various applications designed to facilitate teaching and learning activities. The utilization of information technology in education contributes to improving the quality of education while simplifying the teaching and learning process (Novita & Ningsih, 2020).

SMP Negeri 5 Batukliang has adopted an e-learning platform named Technology of On-line Fast Application System (TOFAS) to facilitate electronic learning, including for grade IX students. This platform is designed to provide learning materials that can be accessed any-time and anywhere, aiming to improve learning effectiveness and efficiency. However, the successful implementation of e-learning is not only determined by the availability of technology but also by the level of user satisfaction, which in this case is the students. Service quality and user satisfaction have a close relationship, because the quality of service plays an important role in creating satisfaction for users. Currently, the application of e-learning-based learning technology has become common in various schools, both public and private (Apriono et al., 2024).

The evaluation of grade IX student satisfaction with the TOFAS e-learning platform can be conducted using the End-User Computing Satisfaction (EUCS) method introduced by Doll and Torkzadeh in 1988. This method identifies five main factors that influence the level of user satisfaction with the TOFAS e-learning system. These factors include: (i) content, (ii) accuracy, (iii) format, (iv) ease of use, and (v) timeliness (Novita & Ningsih, 2020). This evaluation is expected to provide in-depth insight into the aspects that contribute to student satisfaction or dissatisfaction, so that it can be used as a basis for developing and improving the TOFAS system in the future. Based on initial observation results, the level of satisfaction with the system still requires further research to determine the extent to which this satisfaction is achieved. The EUCS method was chosen because of its ability to provide a simple yet accurate assessment in predicting the level of user satisfaction with an application. Therefore, the research question formulated is: how to measure the level of satisfaction of TOFAS e-learning users among grade IX students at SMP Negeri 5 Batukliang using the End-User Computing Satisfaction (EUCS) method? The objective of this study is to evaluate user satisfaction with the TOFAS e-learning platform among grade IX students at SMP Negeri 5 Batukliang using the EUCS method.

II. RELATED WORK

Several previous studies have used the EUCS method to evaluate user satisfaction with various information systems and e-learning platforms. Novita & Ningsih (2020) researched the influence of Vilep e-learning implementation at Poltekkes Kemenkes Palembang using

the EUCS approach. The results showed that all measured variables were fulfilled, and the correlation analysis obtained an R^2 value of 0.854. Fatima et al. (2019) examined end-user satisfaction with the Academic Information System (SIKAD) at the State Islamic University of Maulana Malik Ibrahim Malang using the EUCS method [13]. The results showed that the content variable scored 3.08 (satisfied), while accuracy scored 2.75 (less satisfied), format 2.90 (less satisfied), ease of use 2.89 (less satisfied), timeliness 2.89 (less satisfied), and user satisfaction 2.89 (less satisfied).

Rahmawita et al. (2022) analyzed student satisfaction using the EUCS method in the use of Siasy at the Faculty of Tarbiyah and Teacher Training. The results showed that content, ease of use, and timeliness influenced user satisfaction, while accuracy and format did not. Asni & Irfan (2022) analyzed user satisfaction in the use of e-learning during the Covid-19 pandemic using the EUCS model at SMK N 2 Pariaman. The results showed that all variables measured contributed 56% to student satisfaction and 88.9% to teacher satisfaction. Kusuma et al. (2023) analyzed student satisfaction with e-learning at XYZ Pharmacy Vocational School using the EUCS method, achieving a student satisfaction rate of 73.8%.

Apriono et al. (2024) analyzed e-learning user satisfaction with the EUCS method at SMP Negeri 2 Jayapura, finding that both teachers and students were satisfied, with satisfaction levels above 80% for all EUCS variables. Yolangga & Hardiyanti (2024) analyzed Maxim application user satisfaction using the EUCS model, finding that while the five EUCS variables did not individually affect user satisfaction, together with perceived usefulness they contributed 87.8% to the satisfaction variable. Pibriana & Fitriyani (2022) used the EUCS model to analyze e-learning user satisfaction at MTs N 2 Palembang, finding that the five EUCS variables had no effect on user satisfaction. Irumas & Utamajaya (2022) applied the EUCS method to evaluate user satisfaction with the PNM Digi application for employees, with all satisfaction dimensions exceeding 80%. Kanthi et al. (2024) evaluated BRImo user satisfaction using EUCS, finding that content, accuracy, format, and ease of use partially and significantly affected user satisfaction, while timeliness did not.

Based on these previous studies, the comparison of this research lies in the object and context. While many studies have evaluated e-learning systems, this research specifically focuses on the TOFAS platform at SMP Negeri 5 Batukliang, which has not been previously evaluated using the EUCS method. The method and tools used (SPSS and Microsoft Excel) are consistent with several prior studies, ensuring the reliability and comparability of the results.

III. METHOD

This research uses a descriptive quantitative method with a survey design. This approach was chosen because it allows for systematic data collection and statistical analysis to measure user perceptions of the success of an information system.

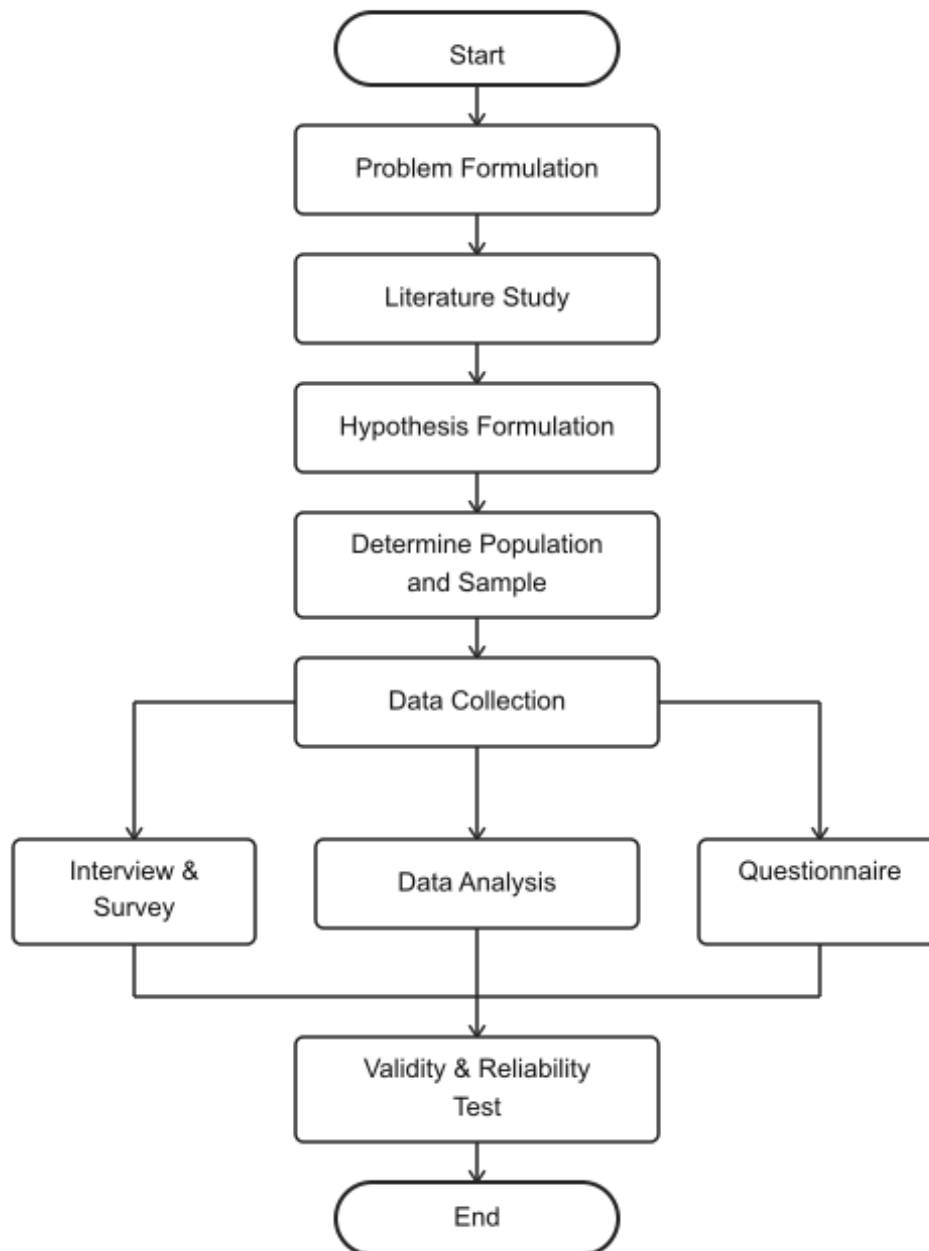


Figure 1: Research Flow Diagram

A. Research Object Identification

The object of this research is the TOFAS (Technology of Online Fast Application System) e-learning platform used by grade IX students at SMP Negeri 5 Batukliang. TOFAS is an e-learning platform developed to facilitate distance learning processes. This system allows students and teachers to connect in a digital learning environment through access to materials, assignment submission, discussion forums, and online exams.

B. Data Collection

Data was collected through a questionnaire distributed directly to grade IX students at SMP Negeri 5 Batukliang. The questionnaire was designed based on the five dimensions of the EUCS method: content, accuracy, format, ease of use, and timeliness. The population consisted of 66 students from classes IX.A and IX.B. Using the Slovin formula with a margin of error of 5%, a sample of 57 students was obtained. The calculation is as follows:

$$n = \frac{N}{1 + N \cdot e^2} = \frac{66}{1 + 66 \times (0.05)^2} = \frac{66}{1 + 66 \times 0.0025} = \frac{66}{1 + 0.165} = \frac{66}{1.165} = 56.65 \approx 57$$

The research variables are defined in Table 1. A 4-point Likert scale was used: Very Satisfied (4), Satisfied (3), Less Satisfied (2), and Not Satisfied (1).

Table 1: Operational Variables of EUCS

No	Variable	Indicator	Code
1	Content (X1)	Completeness, Usefulness, Understandability	X1.1, X1.2, X1.3
2	Accuracy (X2)	Correctness, Validity	X2.1, X2.2
3	Format (X3)	Understandability, Appropriateness	X3.1, X3.2
4	Ease of Use (X4)	Navigation simplicity, Learnability	X4.1, X4.2
5	Timeliness (X5)	Information timeliness, Responsiveness	X5.1, X5.2
6	User Satisfaction (Y)	Goal satisfaction, Overall satisfaction	Y1.1, Y1.2

C. Research Procedure

The research procedure began with problem formulation and literature study. Next, hypotheses were formulated based on the EUCS model. The population and sample were then determined using simple random sampling. After that, data collection was carried out by distributing questionnaires. The collected data was then tabulated and analyzed using Microsoft Excel and IBM SPSS, followed by validity and reliability tests.

D. Data Analysis

The data analysis technique used in this research is descriptive analysis and inferential analysis. Descriptive analysis was used to determine the frequency distribution and mean values of each indicator. The validity test used the Pearson product-moment correlation coefficient with a significance level of 5%. An item is considered valid if the significance value (Sig.) is less than 0.05. The reliability test used Cronbach's Alpha coefficient. An instrument is considered reliable if the Cronbach's Alpha value is greater than 0.6. Simple linear regression analysis was also conducted to determine the effect of each independent variable (content, accuracy, format, ease of use, timeliness) on the dependent variable (user satisfaction).

E. System Evaluation

The evaluation was conducted by combining the results of the descriptive analysis (frequency, percentage, mean) and the inferential analysis (validity, reliability, regression). The mean scores were interpreted based on the 4-point Likert scale to determine the category of user satisfaction. The results of the regression analysis (R Square, F-test, t-test) were used to determine the influence of each EUCS dimension on overall user satisfaction.

IV. RESULT AND DISCUSSION

A. Demographic Analysis Results

The demographic analysis of the 57 respondents, as shown in Figure 2, Figure 3, and Figure 4, revealed that the majority of respondents were male (34 respondents or 60%) and aged less than 15 years (38 respondents or 67%). The distribution between classes IX.A and IX.B was relatively balanced.

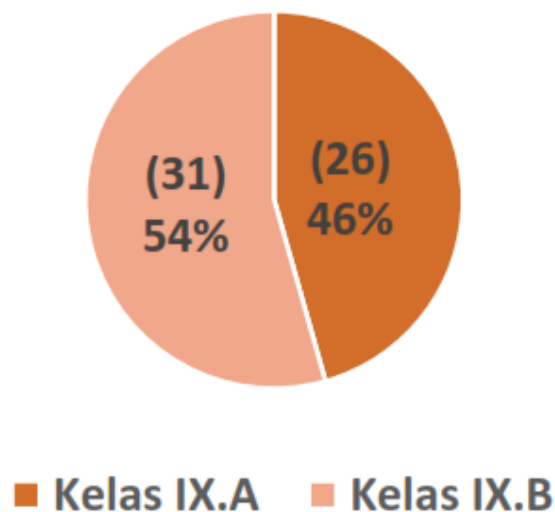


Figure 2: Class Distribution Diagram

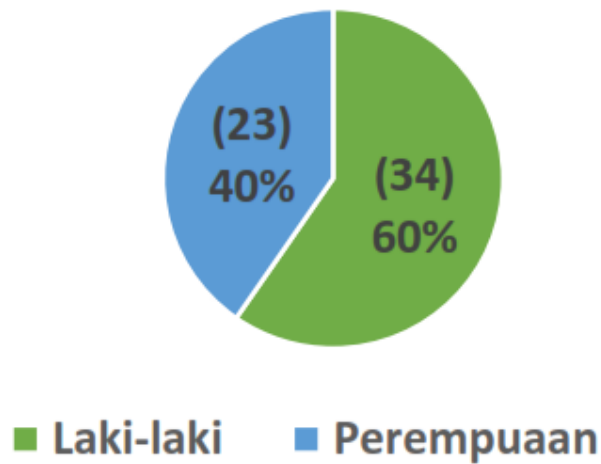


Figure 3: Gender Distribution Diagram

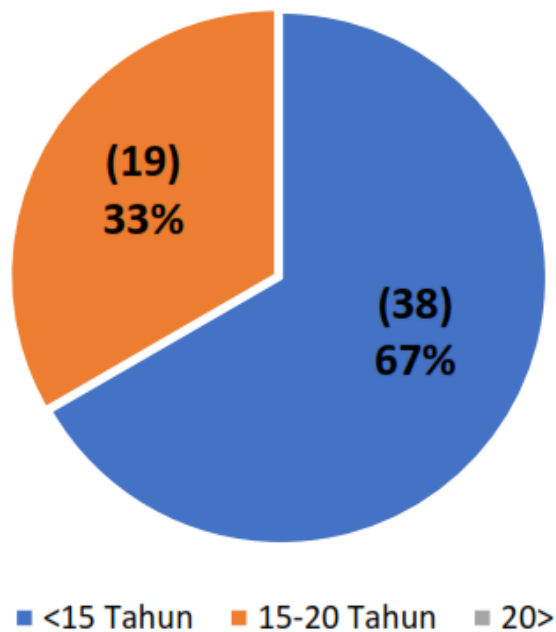


Figure 4: Age Distribution Diagram

B. Evaluation Results

4.2.1 Validity and Reliability Test Results

The validity test was conducted on 13 question items. Based on the analysis, all 13 items had a significance value less than 0.05, indicating that all items were valid. Table 2 shows the validity results for each item.

The reliability test produced a Cronbach's Alpha value of 0.790. Since this value is greater than 0.6, it can be concluded that all 13 question items are reliable and consistent. The reliability test results are presented in Table 3.

Table 2: Validity Test Results

Indicator	r_count	Sig.	Conclusion
X1.1	0.473	0.000	Valid
X1.2	0.811	0.000	Valid
X1.3	0.377	0.004	Valid
X2.1	0.609	0.000	Valid
X2.2	0.442	0.001	Valid
X3.1	0.811	0.000	Valid
X3.2	0.372	0.004	Valid
X4.1	0.377	0.004	Valid
X4.2	0.520	0.000	Valid
X5.1	0.796	0.000	Valid
X5.2	0.582	0.000	Valid
Y1.1	0.404	0.002	Valid
Y1.2	0.738	0.000	Valid

Table 3: Reliability Test Results

Cronbach's Alpha	N of Items
0.790	13

4.2.2 Descriptive Analysis Results

The results of the descriptive analysis, which shows the mean values for each indicator, are presented in Table 4. All indicators have mean values ranging from 3.23 to 3.63. The highest mean value is for indicator X2.1 (accuracy of information) with a mean of 3.63, which falls into the "very satisfied" category. The indicators for content (X1.2 and X1.3) have means of 3.26 and 3.25, respectively, also approaching "very satisfied". The format variable (X3.2) has a mean of 3.51, and the ease of use variable (X4.2) has a mean of 3.44. The timeliness indicators (X5.1 and X5.2) have means of 3.23, and the user satisfaction indicators (Y1.1 and Y1.2) have means of 3.42 and 3.63, respectively.

Table 4: Descriptive Analysis of Respondent Answers

Indicator	Mean	Category
X1.1	3.58	Approaching Very Satisfied
X1.2	3.26	Approaching Very Satisfied
X1.3	3.25	Approaching Very Satisfied
X2.1	3.63	Approaching Very Satisfied
X2.2	3.23	Approaching Very Satisfied
X3.1	3.26	Approaching Very Satisfied
X3.2	3.51	Approaching Very Satisfied
X4.1	3.25	Approaching Very Satisfied
X4.2	3.44	Approaching Very Satisfied
X5.1	3.23	Approaching Very Satisfied
X5.2	3.23	Approaching Very Satisfied
Y1.1	3.42	Approaching Very Satisfied
Y1.2	3.63	Approaching Very Satisfied

4.2.3 Regression Analysis Results (Influence of Variables)

To determine the influence of each EUCS dimension on user satisfaction, simple linear regression analysis was conducted.

Influence of Content (X1) on User Satisfaction: As shown in Table 5, the coefficient of determination (R Square) is 0.164. This means that content influences user satisfaction by 16.4%, while the remaining 83.6% is influenced by other factors. The F-test resulted in F-count = 11.991 (F-table = 4.02) with a significance of 0.001 ($p < 0.05$), indicating that content has a significant effect on user satisfaction. The t-test shows a t-count of 3.463 (t-table = 1.673) with a significance of 0.001, and the regression coefficient is positive (0.280). Thus, content has a positive and significant effect on user satisfaction.

Table 5: Regression Results for Content (X1) on User Satisfaction (Y)

Parameter	Value
R Square	0.164
F-count	11.991
Sig. (F-test)	0.001
t-count	3.463
Sig. (t-test)	0.001
Coefficient (B)	0.280

Influence of Accuracy (X2) on User Satisfaction: The R Square value is 0.141, meaning accuracy influences user satisfaction by 14.1%. The F-test shows F-count = 10.197 (Sig. = 0.002 $p < 0.05$), and the t-test shows t-count = 3.193 (Sig. = 0.002) with a positive coefficient of 0.323. Therefore, accuracy has a positive and significant effect on user satisfaction.

Influence of Format (X3) on User Satisfaction: Format contributes 19.5% to user satisfaction ($R^2 = 0.195$). The F-count is 13.326 ($\text{Sig.} = 0.001 < 0.05$) and the t-count is 3.650 ($\text{Sig.} = 0.001$) with a coefficient of 0.424. Thus, format has a positive and significant effect on user satisfaction.

Influence of Ease of Use (X4) on User Satisfaction: Ease of use has the highest influence among the variables, with an R^2 of 0.265, meaning it affects user satisfaction by 26.5%. The F-test ($F\text{-count} = 19.786$, $\text{Sig.} = 0.000$) and t-test ($t\text{-count} = 4.448$, $\text{Sig.} = 0.000$) are significant, with a positive coefficient of 0.433. Hence, ease of use has a positive and significant effect on user satisfaction.

Influence of Timeliness (X5) on User Satisfaction: Timeliness contributes 15.8% to user satisfaction ($R^2 = 0.158$). The F-test ($F\text{-count} = 10.347$, $\text{Sig.} = 0.002$) and t-test ($t\text{-count} = 3.217$, $\text{Sig.} = 0.002$) are significant, with a coefficient of 0.309. Therefore, timeliness has a positive and significant effect on user satisfaction.

C. Discussion

The findings of this study indicate that all five dimensions of the EUCS model—content, accuracy, format, ease of use, and timeliness—have a positive and significant influence on the satisfaction of grade IX students at SMP Negeri 5 Batukliang with the TOFAS e-learning platform. The descriptive analysis results, with mean values ranging from 3.23 to 3.63 on a 4-point scale, indicate that students are generally satisfied, falling into the “satisfied” to “very satisfied” categories. This aligns with the findings of Apriono et al. (2024) and Kusuma et al. (2023), who also reported high satisfaction levels with e-learning platforms using the EUCS method.

Among the five dimensions, ease of use (X4) had the highest influence on user satisfaction, with a contribution of 26.5% ($R^2 = 0.265$). This suggests that students place a high value on how easy it is to navigate and learn to use the TOFAS platform. As shown in Table 4.2, the mean for learnability (X4.2) is 3.44, indicating students can use the system quickly without extensive guidance. This finding is consistent with the nature of e-learning platforms, where user-friendliness is crucial for student engagement, especially for younger users aged 13-15.

Content (X1) and accuracy (X2) also significantly influenced satisfaction, though their contributions (16.4% and 14.1%, respectively) were lower than ease of use. The mean for content completeness (X1.1) is high at 3.58, but the mean for information usefulness (X1.2) and understandability (X1.3) are lower, suggesting room for improvement in the quality and clarity of the materials provided. Unlike the findings of Rahmawita et al. (2022), who found that accuracy and format did not influence satisfaction, this study found that all dimensions, including accuracy and format, had a significant effect. This difference may be due to the specific characteristics of the TOFAS platform and the user base.

The format (X3) and timeliness (X5) dimensions also had significant effects, although the R^2 values were relatively lower (19.5% and 15.8%, respectively). The high mean for format appropriateness (X3.2) at 3.51 suggests that the interface design (icons, menus, structure) meets user needs. However, the lower mean for timeliness (X5.1 and X5.2 both

at 3.23) indicates that the system's responsiveness and the speed of information provision could be areas for future enhancement. As shown in the frequency tables, a small percentage of students expressed being "less satisfied" or "not satisfied" with these aspects, which should be noted by the developers. Overall, the results confirm that the TOFAS e-learning platform is well-received by students, and all EUCS dimensions contribute positively to the overall user experience.

V. CONCLUSION

Based on the research conducted on the satisfaction of TOFAS e-learning users among grade IX students at SMP Negeri 5 Batukliang using the End-User Computing Satisfaction (EUCS) method, it can be concluded that the TOFAS e-learning system is effective in meeting the needs of students, and all five dimensions of the EUCS model contribute positively to user satisfaction. The analysis shows that students feel satisfied with the content provided, as the material is considered relevant and supportive of their learning. The system is also rated highly for accuracy, with information displayed being correct and trustworthy. The format of the presentation is considered good and easy to understand, with a simple interface and structured layout. Most students find the TOFAS system easy to use, with intuitive navigation and easy access to main features, which provides a positive learning experience. The ease of use dimension had the highest influence on user satisfaction, contributing 26.5%. Finally, the system is considered timely in presenting information, with regular updates allowing students to access materials on schedule. Overall, the measurement results using the EUCS method indicate that the level of user satisfaction with TOFAS e-learning is in the "satisfied" to "very satisfied" category. For future research, it is recommended to add other dimensions to the EUCS model or use a qualitative approach to explore students' perceptions more deeply. Schools should continue to support the use of TOFAS by providing regular training and adequate technological infrastructure, while TOFAS developers should maintain and improve content quality, data accuracy, and ease of use, as well as consider adding more interactive features.

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