International Journal of Multicultural and Multireligious Understanding

http://ijmmu.com
editor@ijmmu.com
ISSN 2364-5369
Volume 11, Issue 8
August, 2024
Pages: 280-287

Analysis of User Experience (UX) of Higher Education Websites

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http://dx.doi.org/10.18415/ijmmu.v11i8.5856

Abstract

Rapid developments in the fields of technology, communication and information create the potential for widespread use of access, management and distribution of large amounts of information quickly and accurately, including in the field of higher education. This study aims to analyze the User Experience (UX) of Higher Education Websites in Raden Mas Said Surakarta State Islamic University (UIN). The research method used in this study uses a survey method using the UEQ questionnaire. The population is all students at UIN Raden Mas Said Surakarta. The sample was taken as many as 100 students based on consideration of a level of significance. The results of the evaluation of user experience when visiting the UIN Raden Mas Said Surakarta questionnaire results are imported into the MS Excel UEQ_Data_Analysis_Tools application and the UEQ analysis calculation results are obtained automatically so as to get accurate results. Include 1) Consistency Test (Reliability Test), 2) Mean Calculation, 3) Benchmark Analysis. All dimensions are in the value range above the average, thus showing positive evaluation results.

Keywords: *User Experience (UX); Higher Education Websites; UIN Surakarta*

Introduction

Rapid developments in the fields of technology, communication and information create the potential for widespread use of access, management and distribution of large amounts of information quickly and accurately, including in the field of higher education. Raden Mas Said Surakarta State Islamic University (UIN) is one of the higher education institutions that actively utilizes advances in educational technology, namely the use of website-based technology to support the provision of academic information to students. The use of the website at UIN Raden Mas Said Surakarta also has other benefits, namely facilitating and increasing the effectiveness of the teaching and learning process, and being a media for promoting campus academic activities.

The effort to attract users to visit the campus website is to create a website that is easy to use and easy to understand. The quality level of a website is greatly influenced by the user's experience when visiting the website (Kurniawati & Ratnasari, 2023). The results of previous studies reveal that half of potential opportunities are wasted because users have difficulty finding information and then switch to another website because of an unsatisfactory experience when visiting the website (Rafi et al, 2023).

User experience or what is termed User Experience (UX) is the overall effect experienced by the user as a result of interaction between the user and the system, device or product. The UX concept studies how users behave and the extent to which they feel happy and satisfied when interacting with the website (Marques et al., 2021). User Experience is defined as the user's overall impression when interacting with a product which includes pragmatic and hedonic quality aspects (Schrepp et al, 2013). It can be stated that User Experience is the perception and response given by a user to a product or system, including feelings of satisfaction and comfort when using the service.

*User Experience*is one of the main focuses in developing a website. Therefore, testing the user experience when using information systems is very necessary. User Experience is important to analyze so that in the future it can be ensured that website visitors can get the information they need easily (Kurniawati & Ratnasari, 2023). It is a necessity to carry out an analysis of the user experience so that the website can provide maximum service (Maharani et al, 2021).

The method that can be used to measure User Experience for a product is the User Experience Questionnaire (UEQ), which is a method used to measure user experience for a product, the aim is to quickly assess the perceived user experience of a product or service (Ciputra & Farisi , 2023). The UEQ instrument is a measuring tool used to analyze survey data regarding user experience in a way that is simple, reliable, based on facts, and used to assess quality subjectively. Through the use of UEQ, developers can evaluate the user experience of interactive products and gain an understanding of the UX of information systems (Kurniawati & Ratnasari, 2023).

User Experience Questionnaire(UEQ) is an evaluation method for measuring user experience using a questionnaire. The UEQ instrument was created by Laugwitz, Scrhrepp, and Held in 2008. The advantage of UEQ compared to other measurement methods is that it is easy to use in carrying out calculations quickly and displaying them comprehensively (Laugwitz et al, 2008). Initially UEQ was available in German and in its development currently UEQ is available in more than 30 languages, including Indonesian.

The UEQ questionnaire has six assessment dimensions with 26 statements available in several languages including Indonesian. These six dimensions include (Schrepp, 2023): (1) Attractiveness, measuring the user's overall impression and determining whether the user likes the existing system or not; (2) Clarity (Perspicuity). determine whether users can easily feel familiar with the product and determine whether users can easily learn how to use a system under test; (3) Efficiency, determining whether the user can complete the task requested or performed without having to make unnecessary efforts; (4) Accuracy (Depandability), measuring the user's feeling of control when interacting with the system. This dimension determines whether the user feels safe or not; (5) Stimulation, measuring how interested the user is in the system; and (6) Novelty, determining how much the appearance of a system is able to attract the attention of users (Schrepp, 2023).

The results of the study by Marques et al (2021) reveal that User Experience (UX) evaluation has good performance in terms of efficiency and effectiveness, making it possible to identify the causes that cause negative user experiences, and is easy to use. Ciputra & Farisi (2023) evaluated the Payoprint website with UEQ which found that all aspects, starting from attractiveness, clarity, efficiency, accuracy, stimulation, and novelty aspects received bad scores (<0.8). The results of this study serve to recommend improvements to the website. Rafi et al (2023) evaluated the Dicoding website with UEQ and found that all aspects (attractiveness, clarity, efficiency, accuracy, stimulation and novelty) scored above average. Kurniawati & Ratnasari (2023) tested the UII Faculty of Industrial Technology website with UEQ and got results in the below average category. These results are then used as a reference for developing a version that is more suited to user needs.

Measuring User Experience (UX) on higher education websites has an important role in ensuring effective interaction between users (students, lecturers, staff, prospective students). Overall, UX is not just

about how a website looks, but also about how users feel and interact with the website. Focusing on good UX helps improve the quality, satisfaction, and user interaction with a college website, which will ultimately provide great benefits for all parties involved. This study intends to carry out UX measurements on users (students) to determine the experience felt when visiting the UIN Raden Mas Said Surakarta website. Through measurements using UEQ, it can be seen what dimensions need to be improved from the services on the website.

Method

The research method used in this study uses a survey method using the UEQ questionnaire. The population is all students at UIN Raden Mas Said Surakarta. The sample was taken as many as 100 students based on consideration of a level of significance of 5% according to calculations in Umar (2019), a sample of 96.04 respondents was obtained, then to make it easier the sample was rounded up to 100 respondents. The sampling technique used was the convenience sampling method, namely students who were willing and easy to find when visiting the UIN Raden Mas Said Surakarta website.

The operational definition of UEQ measurement consists of 6 indicators: Attractiveness, Clarity, Efficiency, Depandability, Stimulation, and Novelty (Schrepp, 2023). Next, the six indicators are described as:26 questions with 7 answer choices as follows(Susilo, 2019):

	1	2	3	4	5	6	7		
menyusahkan	○	○	○	○	○	○	○	menyenangkan	1
tak dapat dipahami	○	○	○	○	○	○	○	dapat dipahami	2
kreatif	○	○	○	○	○	○	○	monoton	3
mudah dipelajari	○	○	○	○	○	○	○	sulit dipelajari	4
bermanfaat	○	○	○	○	○	○	○	kurang bermanfaat	5
membosankan	○	○	○	○	○	○	○	mengasyikkan	6
tidak menarik	○	○	○	○	○	○	○	menarik	7
tak dapat diprediksi	○	○	○	○	○	○	○	dapat diprediksi	8
cepat	○	○	○	○	○	○	○	lambat	9
berdaya cipta	○	○	○	○	○	○	○	konvensional	10
menghalangi	○	○	○	○	○	○	○	mendukung	11
baik	○	○	○	○	○	○	○	buruk	12
rumit	○	○	○	○	○	○	○	sederhana	13
tidak disukai	○	○	○	○	○	○	○	menggembirakan	14
lazim	○	○	○	○	○	○	○	terdepan	15
tidak nyaman	○	○	○	○	○	○	○	nyaman	16
aman	○	○	○	○	○	○	○	tidak aman	17
memotivasi	○	○	○	○	○	○	○	tidak memotivasi	18
memenuhi ekspektasi	○	○	○	○	○	○	○	tidak memenuhi ekspektasi	19
tidak efisien	○	○	○	○	○	○	○	efisien	20
jelas	○	○	○	○	○	○	○	membingungkan	21
tidak praktis	○	○	○	○	○	○	○	praktis	22
terorganisasi	○	○	○	○	○	○	○	berantakan	23
atraktif	○	○	○	○	○	○	○	tidak atraktif	24
ramah pengguna	○	○	○	○	○	○	○	tidak ramah pengguna	25
konservatif	○	○	○	○	○	○	○	inovatif	26

The data collection technique uses the UEQ questionnaire consisting of pairs of attributes that are contradictory in meaning which can represent a product/service. Each question describes the user's assessment of the services on the website. Each dimension is given a value between 1 (lowest) to 7 (highest) (Kurniawati & Ratnasari, 2023). The reliability and validity tests of the UEQ have been measured by several previous studies, namely that the UEQ really measures what it is intended to measure. The results of previous studies also show reliability with quite high scale values (measured by

Cronbach's Alpha). Additionally, a number of studies show good construct validity of the scale (Schrepp, 2023).

Data analysis for calculating UEQ results is carried out using UEQ Data Analysis Tools in the form of Microsoft Excel files which can be downloaded from the official UEQ website athttps://www.ueq-online.org/. From the results of calculations using the UEQ Data Analysis Tools, conclusions will be obtained from each assessment scale. There is a ranking for each score obtained, starting from Bad, Below Average, Above Average, Good, and Excellent (Susilo, 2019).

Result

The results of the evaluation of user experience when visiting the UIN Raden Mas Said Surakarta website were carried out using the UEQ questionnaire which was carried out by distributing questionnaires to students online using Google form. Respondents were collected from January 20 2024 to February 5 2024 until 100 respondents were obtained. Next, the scores from the questionnaire results are imported into the MS Excel UEQ_Data_Analysis_Tools application and the UEQ analysis calculation results are obtained automatically so as to get accurate results.

1. Consistency Test (Reliability Test)

Reliability testing is used to ensure that the measurement instrument can provide consistent results when used repeatedly and to find out whether the respondent's answers can be used in the future. The results of the data consistency test with UEQ_Data_Analysis_Tools obtained the results shown in the following table:

Table 1. Reliability Test Results Based on Cronbach's Alpha

Scale	Cronbach's Alpha value	Information
Attractiveness	0.92	Reliable
Perspicuit	0.75	Reliable
efficiency	0.74	Reliable
Depandability	0.67	Reliable
Stimulation	0.72	Reliable
Novelty	0.69	Reliable

The reliability test results show results where the Cronbach's Alpha values are all greater than 0.6 (> 0.6), so it can be concluded that the data used meets the reliability requirements.

2. Mean Calculation

The results of calculating the average (mean) of all questions have been classified according to dimensions. An average impression value between -0.8 to 0.8 is a normal evaluation value, an average value >0.8 is a positive evaluation and a value < -0.8 is a negative evaluation. The results of the average calculation of the six dimensions show the following results:

Table 2. UEQ Scale and Variance

UEQ Scales (Mean and Variance)		
Attractiveness	↑ 1,655	1.38
Perspicuity	↑ 1,765	1.16
efficiency	↑ 1,800	0.93
Dependability	↑ 1,510	0.90
Stimulation	↑ 1,313	0.98
Novelty	↑ 0.895	1.21

Table 2 shows the results obtained from positive evaluations which are marked with green arrows. The calculation results of the six dimensions can be described as follows:

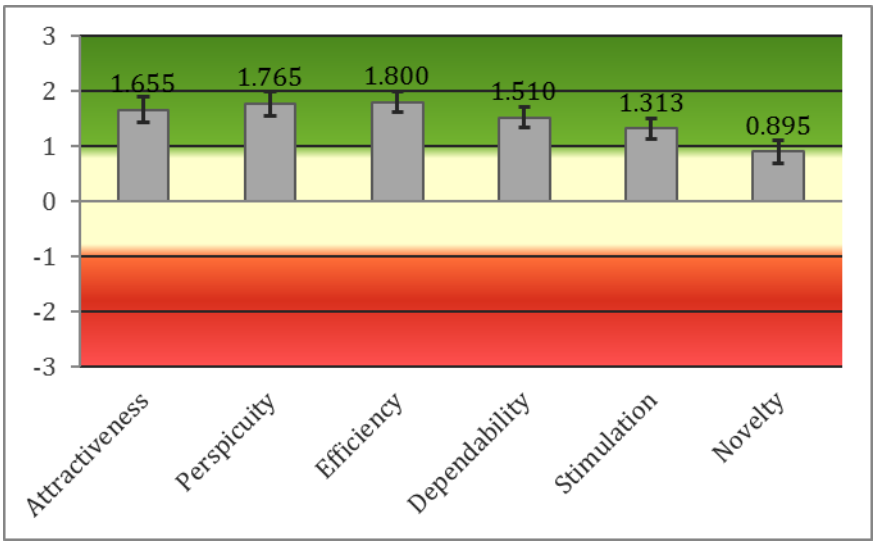

Figure 1. Graph of Mean Six Dimensions of UEQ

Figure 1 shows the average value of the attractiveness dimension is 1.655, the perspicuity dimension shows the number 1.765, the efficiency aspect shows the number 1.800, the appropriateness aspect shows the number 1.510, the stimulation aspect shows the number 1.313 and the novelty aspect shows the figure 0.895. Based on the combination of the 2023 UEQ handbook, a value range above 0.8 indicates positive evaluation results.

The attractiveness dimension received positive evaluation results with a mean value of 1.655, indicating that users gave a positive assessment to the attractive appearance and design of the website. The clarity dimension received positive evaluation results with a mean value of 1.765 indicating that the information provided by the website is easy for users to understand. The efficiency dimension received positive evaluation results with a value of 1,800 indicating that the website can be used quickly and efficiently. The accuracy dimension obtained positive evaluation results with a mean value of 1.510 which indicates the reliability of the website when used by users and the website can be trusted by users. The stimulation dimension received positive evaluation results with a mean value of 1.313, indicating that the user had a pleasant and interesting experience. The novelty dimension received positive evaluation results with a mean value of 0.895, indicating that the website can attract users through new and interesting features and innovations.

Overall, the assessment results show that the six UEQ dimensions receive positive evaluation results from users, so that the experience when visiting the website meets user expectations.

3. Benchmark Analysis

Benchmark analysis is a comparative evaluation between user assessments and the dataset provided by the UEQ database. Data processing is automatically carried out by the UEQ data analysis tool so that the results can be seen directly. The results of the benchmark analysis are in the form of comparative visualizations in graphical form as follows:

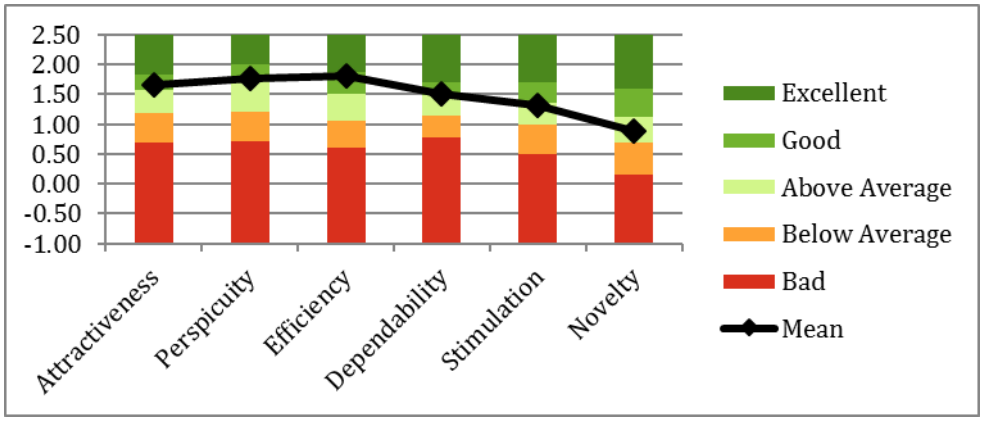

Figure 2. Benchmark graph

Figure 2 shows a benchmark graph of comparison results for website assessments using UEQ. The results show that when compared with other websites, the UIN Raden Mas Said Surakarta website gets a good score in the dimensions of attractiveness, perspicuity, efficiency and dependability. Then the stimulation and novelty dimensions get above average values. More details are presented in the following table:

Table 3. Benchmark Comparison Results

Scale	Mean	Compare to benchmark	Interpretation
Attractiveness	1,655	*Good*	*10% of results better, 75% of results worse*
Perspicuity	1,765	*Good*	*10% of results better, 75% of results worse*
efficiency	1,800	*Good*	*10% of results better, 75% of results worse*
Dependability	1,510	*Good*	*10% of results better, 75% of results worse*
Stimulation	1,313	*Above Average*	*25% of results better, 50% of results worse*
Novelty	0.895	*Above Average*	*25% of results better, 50% of results worse*

The benchmark comparison results in Table 3 show that the benchmark comparison results with 468 other products (services) dimensions of attractiveness, perspicuity, efficiency and dependability from the UIN Raden Mas Said Surakarta website obtained an interpretation of 10% of results better, 75% of results worse. This assessment interprets that 10% of the products from the dataset have a better mean value than the website, while 75% of the dataset products have a worse mean value than the website. Meanwhile, the stimulation and novelty dimensions received an interpretation of 25% of results better, 50% of results worse. This assessment interprets that 25% of the products from the dataset have a better mean value than the website, while 50% of the dataset products have a worse mean value than the website. The benchmark test results are described in more detail as follows:

a. The attractiveness dimension gets a good interpretation. This indicates that the website has an attraction so that users feel happy when visiting the website. Users feel interested and emotionally connected to the website.

b. The perspicuity dimension gets a good interpretation. This explains that users feel familiar and can learn easily. Users feel that the website has a clear and easy to understand interface. Users feel the information presented is clear, unambiguous, and they can easily interact with the product or system.

c. The efficiency dimension gets a good interpretation, indicating that the website has good efficiency in its menus and features. Websites can be used (operated) efficiently and help students become more productive.

d. The dependability dimension gets a good interpretation, indicating that the user feels comfortable and safe when visiting the website. The website functions well and is reliable.

e. The stimulation dimension gets an above average interpretation. Users feel stimulated and enthusiastic when using the website. This means that the UIN website can make users feel interested when visiting the website

f. The novelty dimension gets an above average interpretation, indicating that the appearance of the website is creative and innovative.

The highest score is in the efficiency dimension (1.800) which shows that the existence of a website makes it easy and helpful in completing tasks quickly and without significant difficulties. The lowest value is in the novelty dimension (0.895) so creativity and innovation are still needed to complete the website. Overall, the benchmark test results show that the dimensions of attractiveness, perspicuity, efficiency and dependability get good interpretations, while the dimensions of stimulation and novelty get above average interpretations. This indicates that according to student perception, the website has better quality compared to other websites.

Conclusions

The results of the evaluation of the UIN Raden Mas Said Surakarta website using the UEQ method showed that the attractiveness dimension got a score of 1.655, the perspicuity dimension got a score of 1.765, the efficiency aspect got a score of 1.800, the appropriateness aspect got a score of 1.510 , the stimulation aspect received a value of 1.313 and the novelty aspect received a value of 0.895. All dimensions are in the value range above the average, thus showing positive evaluation results.

The suggestion given is that the website needs to increase the stimulation aspect so that users feel interested and motivated to visit the website. An attractive website appearance and the use of interactive elements can increase user involvement when interacting. The novelty aspect gets the lowest score, so creativity and innovation are needed to improve website performance. Improvements to the appearance and innovation can provide a more satisfying and enjoyable experience for student visitors to the website.

References

Ciputra, HCS, & Farisi, A. (2023). Analysis of Payoprint Website User Experience Using the UEQ Method. MDP Student Conference, 2(1), 568-574, DOI:https://doi.org/10.35957/mdp-sc.v2i1.4354.

Kurniawati, E., & Ratnasari, CI (2023). User Experience Testing Using the User Experience Questionnaire (UEQ) Method: Case Study on the Website of the Faculty of Industrial Technology,

Islamic University of Indonesia. Automata Journal 4(2),1-7, https://jurnal.uii.ac.id/AUTOMATA/article/view/28653.

Laugwitz, B., Held, T., & Schrepp, M. (2008). Construction and Evaluation of a User Experience Questionnaire. Lecture Notes in Computer Science (including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), Springer Verlag, 63 –76. doi: 10.1007/978-3-540-89350-9_6.

Maharani, A., Intan, B., & Susilo, AT (2021). User Experience Analysis on the Tugumulyo State Vocational School Website Based on the User Experience Questionnaire (UEQ). JUSIM (Journal of Musirawas Information Systems), 6(2), 169-177.

Marques, L., Matsubara, PG, Nakamura, WT, Ferreira, BM, Wiese, IS, Gadelha, BF, Zaina, LM, Redmiles, D., & Conte, TU (2021). Understanding UX Better: A New Technique to Go beyond Emotion Assessment. Censors (Basel, Switzerland), 21(21), 7183.https://doi.org/10.3390/s2121718.

Rafi, DE, Oktadini, NR, Sevtiyuni, PE, Meiriza, A., & Putra, P. (2023). Analysis of User Experience on Dicoding Websites Using the User Experience Questionnaire (UEQ) Method. Indonesian Journal of Computer Science, 12(5), 3103-3113.

Schrepp, M., Rauschenberger, M., Cota, M. P., Olschner, S., & Thomaschewski, J. (2013). Efficient Measurement of the User Experience of Interactive Products. International Journal of Artificial Intelligence and Interactive Multimedia, 2(1), 39-45.

Schrepp, M. (2023). User Experience Questionnaire Handbook. SAP Research, Version 11. DOI: http//www.10.13140/RG.2.1.2815.0245.

Susilo, E. (2019). How to Use User Experience Questionnaire (UEQ) in UX Testing,https://www.edisusilo.com/cara-using-user-experience-questionnaire/.

Umar, H. (2019). Marketing Research and Consumer Behavior. Jakata: Gramedia Pustaka Utama.

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