User Experience Testing on JoinGeek Admin using a User Experience Questionnaire and Usability Testing

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Abstract

Job vacancy portals are becoming increasingly popular as a primary tool for job searching. As a result, developing and improving the quality of job vacancy portals is a suitable response to these changes. As job vacancy portals evolve, it is also vital to pay attention to adjustments to the dashboard that HR uses to process applications. As a technology firm, Geekgarden understands the importance of this development and is committed to improving JoinGeek Admin, their HR dashboard, to keep it relevant to this issue. This study compares the user experience on JoinGeek Admin before and after the redesign to determine the success of the new design. The methods employed are the User Experience Questionnaire (UEQ) and usability testing. The UEQ technique measures six dimensions: attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty. The evaluation results reveal considerable improvements in all areas of the system before and after the redesign, which increase in each dimension: attractiveness (+2.166), perspicuity (+1.666), efficiency (+2.416), dependability (+2), stimulation (+2.5), and novelty (+0.834). Usability testing evaluates the system after redesign in terms of success rate, efficiency, and error rate. The test results reveal a success rate of 94%, an efficiency of 92.5%, and a low error rate of 3.8%. Thus, the evaluation findings show that the JoinGeek Admin redesign was successful in improving the user experience in all areas.

Keywords: HR dashboard, user experience questionnaire, usability testing, user experience

1   Introduction

Millennials aged between 20 and 27 tend to use job vacancy portals to search for job information [1]. This is supported by the results of a survey conducted by the Association of Indonesian Internet Service Providers (APJII, which stands for Asosiasi Penyelenggara Jasa Internet Indonesia) in 2023, as recorded in the Internet Penetration and Behavior Survey report in Indonesia, which found that the reason for using the internet for work purposes was ranked third with a score of 3.11 on a scale of 1 to 4 [2]. This makes it one of the three biggest reasons for internet use, after social media (with a score of 3.33) and news information (with a score of 3.15). This phenomenon shows a transformation in the way people hunt for career opportunities, with technological advancements serving as the primary driver. The existence of job vacancy websites as a tool for finding work means businesses or organizations must grasp this shift in behavior. As a result, developing and improving the quality of job vacancy portals is an appropriate response to this evolution. The goal is to facilitate easy access to job vacancies that benefit both companies and job seekers, while also enhancing the effectiveness and efficiency of the job search process through increased digital connectivity.

As the job vacancy site develops, it is vital to pay attention to adjustments to the dashboard utilized by Human Resources (HR) in processing job applicants. Faced with this dynamic, the dashboard must be upgraded to be more responsive to meeting the needs of an increasingly complex recruitment process. These adjustments are important so that HR can efficiently manage applicant information, support effective candidate selection, and improve the overall user experience. Readjusting the HR dashboard in response to technological developments and job search trends is a strategic step toward promoting progress in the recruiting industry.

Geekgarden, a technology and digital solutions development company, is also aware of changes in job-seeking behavior. Therefore, Geekgarden recognizes the critical need to keep the HR dashboard used to manage their recruitment, known as JoinGeek Admin, relevant to this shift in behavior.

Geekgarden strives to not only update the visual aspect but also improve its functionality. The dashboard's ease of access is critical for HR's ability to efficiently handle and navigate applicant information. This adjustment aims to improve candidate selection efficacy, streamline the recruitment process, and deliver a more satisfactory user experience. Although the dashboard simplifies management, it does not ensure that all users are satisfied. As a result, the purpose of this research is to evaluate the user experience (UX) of JoinGeek Admin by comparing the system before and after the redesign in order to provide an overview of the differences in user experience between the two versions. This test is conducted using the dimensions given in the User Experience Questionnaire (UEQ) and the usability testing method. The findings of this testing will be used to guide future development, ensuring that JoinGeek Admin meets user needs and provides a satisfying experience.

2   Literature Review

User experience (UX) is a scientific field that explores individual interactions with products or systems [3, 4]. Factors such as visual attractiveness, ease of use, and responsiveness while interacting all contribute to user satisfaction [5]. More than just comprehending interface interactions, UX emphasizes a deep understanding of users, including their needs, preferences, capabilities, and limitations [4]. By taking these variables into account, developers may design optimal user experiences, increase satisfaction, and maximize the effectiveness of product or system use.

To achieve an optimal user experience, it is vital to evaluate how well the product or system satisfies the user's expectations and needs [6]. This is critical given the influence of digitalization, which has brought significant changes in various aspects. Continuous evaluation will ensure that the product remains relevant and adaptable as technology evolves and user preferences shift. There are several objectives for implementing UX measurements [7], including (1) a continuous improvement process for the latest version of the product; (2) comparing product performance to competitors in the market; (3) testing to ensure the product meets user expectations; and (4) identifying parts that need to be repaired or improved.

UX evaluation can be carried out using various approaches, including interviews, questionnaires, and direct observation [8]. These diverse ways can provide flexibility in collecting in-depth insight into user experiences, whether through verbal perspective, written responses, or direct observation of user interactions with the product. Rahayu and Indrati [9] used the Website Usability Evaluation Tools (WEBUSE) to evaluate the KitaLulus job portal platform's usability. This method employs a questionnaire to evaluate four areas: content, organization and readability, navigation and links, user interface design, and performance and effectiveness. The purpose of this study is to assess the performance of the KitaLulus site and the extent to which it fits user needs. Furthermore, the KitaLulus interface was redesigned based on user feedback and experience to improve its quality. The study's findings show that usability scores in all four categories have improved. Prior to the change, the average usability score was 0.733, which was classified as good. Following the redesign, based on user feedback and evaluation, the average usability value increased by 0.144 to 0.877, which is categorized as excellent.

Pratama et al. [10] analyzed the user experience on the website of the Career Development Center of the National Development University "Veteran" of East Java using the User Experience Questionnaire (UEQ). The UEQ method assesses six dimensions: attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty [11]. The research results show that the dimensions of attractiveness, perspicuity, efficiency, dependability, and stimulation have excellent assessment categories, while the novelty dimension has a good assessment category. These findings highlight the necessity for a special evaluation and improvement on the novelty dimension to improve the user experience.

Furthermore, Kusuma et al. [12] evaluated the usability of the Hi Jobs! application using performance measurement and concurrent think-aloud techniques. The performance measurement technique involves direct observation of user interactions with the system through a series of scenarios [13], whereas concurrent think-aloud is used for measuring the user's satisfaction through interactive interviews. The combination of these two techniques allows for the assessment of application users' effectiveness, efficiency, and satisfaction. The research results show that the Hi Jobs! application was highly effective, with a task success rate of 96% for advanced participants and

89% for novice participants. However, several scenarios took a lengthy time for participants to complete, resulting in low levels of efficiency. As a result, improvements to some features are required to improve overall user experience satisfaction.

Based on the aforementioned references, it was determined in this study to utilize UEQ to evaluate the level of user experience (UX) by examining six main dimensions, allowing researchers to discover areas for improvement. Aside from that, the usability testing method was utilized to assess the new interface's ease of use on the system. The combination of UEQ and usability testing is supposed to provide a comprehensive view of UX, assisting in identifying strengths and weaknesses for future improvement and development.

3   Research Methods

Two approaches are used to measure user experience on the JoinGeek Admin website: the User Experience Questionnaire (UEQ) and usability testing. Data collection lasted three days, involving three HR personnel at Geekgarden as users who used this system. Figure 1 depicts the steps involved in this research. The first step was a literature review to obtain the theoretical basis and relevant research references, then continuing to prepare the testing instruments, specifically the UEQ questionnaire and task scenarios for usability testing. The next step was data collection or system testing, data processing and analysis, and finally drawing conclusions and recommendations.
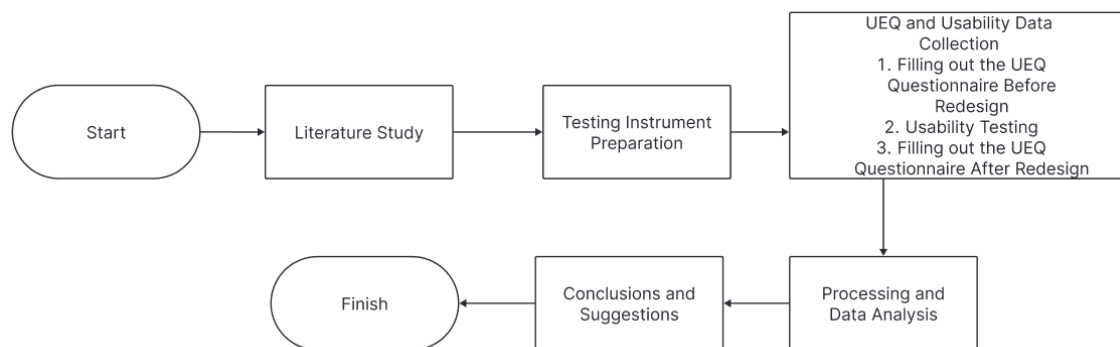

Figure 1 Research Stages

The testing instrument consists of the UEQ questionnaire and task scenarios. The UEQ questionnaire is in the form of a Google form, and the task scenarios will be evaluated by users directly using the Figma prototype. The UEQ questionnaire has 26 statements with a scale range of 1 up to 7, indicating more agreement with the statement on the left or right, as seen in Figure 2.

Figure 2 UEQ Questionnaire

In this study, respondents filled out the system's UEQ questionnaire before the redesign, performed task scenarios on the system prototype after the redesign, and filled out the system's questionnaire after the redesign. This is to evaluate the impact of changes to the user experience on the system both before and after the redesign. The collected data is then processed and analyzed using the UEQ Data Analysis Tool, which may be found on the official UEQ website (*https://www.ueq-online.org/*). UEQ assesses six major aspects: attractiveness, stimulation, dependability, efficiency, perspicuity, and novelty. Attractiveness reflects the user's overall impression of the product, while stimulation indicates the extent to which the product arouses the user's interest and motivation; dependability refers to the consistency and control of interactions felt by the user; efficiency measures whether users can complete their tasks without unnecessary effort; perspicuity assesses the level of ease of learning how to use the product; and novelty assesses the level of product innovation. These six assessments are further categorized into three major categories: attractiveness, hedonic quality, and pragmatic quality. These categories will be evaluated using the benchmark value limits provided in Table 1.

Table 1 Benchmark Interval Standard

Category	Attractiveness	Perspicuity	Efficiency	Dependability	Stimulation	Novelty
Excellent	≥ 1.84	≥ 2	≥ 1.88	≥ 1.7	≥ 1.7	≥ 1.6
Good	≥ 1.58 < 1.84	≥ 1.73 < 2	≥ 1.5 < 1.88	≥ 1.48 < 1.7	≥ 1.35 < 1.7	≥ 1.12 < 1.6
Above Average	≥ 1.18 < 1.58	≥ 1.2 < 1.73	≥ 1.05 < 1.5	≥ 1.14 < 1.48	≥ 1 < 1.35	≥ 0.7 < 1.12
Below Average	≥ 0.69 < 1.18	≥ 0.72 < 1.2	≥ 0.6 < 1.05	≥ 0.78 < 1.14	≥ 0.5 < 1	≥ 0.16 < 0.7
Bad	< 0.69	< 0.72	< 0.6	< 0.78	< 0.5	< 0.16

Usability testing in this study is used to test the interaction between users and the system through a series of task scenarios related to the interface to respondents [14]. Usability testing is performed after respondents complete the system's UEQ questionnaire prior to redesign. There are several parameters in usability testing [15]:

1) Success rate, measures the user's ability to complete all given task scenarios.

2) Time task, measures the duration required by the user to complete the task scenario.
3) Error rate, measures the number of errors made by the user while completing the task scenario.
4) Satisfaction, measures the level of satisfaction felt by users when interacting with the system.

This usability testing contains three task scenarios that each user must accomplish. Testing will focus on the JoinGeek Admin feature, which is related to the Geekgarden applicant management process. These activities include creating job vacancies, modifying job vacancy information, and processing applicants. The objective of this usability testing is to evaluate how the JoinGeek Admin feature may assist and boost efficiency in tasks related to job vacancy management and applicant processing in Geekgarden. Table 2 contains a list of task scenarios that must be performed by users.

Table 2 Usability Testing Task Scenarios

Code	Scenario
ST-1	You want to create a new job posting on the JoinGeek website. Please use the JoinGeek Admin feature to create a new job vacancy.
ST-2	You want to edit the job vacancy information that you created earlier. Please use the JoinGeek Admin feature to edit the job vacancy.
ST-3	You want to process applicants who have applied on JoinGeek to the Quick Call stage. Please use the JoinGeek Admin feature to process the applicants to the Quick Call stage.

After obtaining test data, the next step is data processing and analysis. The final part of this research is to draw conclusions and provide recommendations. Conclusions will be drawn based on test results using the User Experience Questionnaire (UEQ) and usability testing on JoinGeek Admin. Data from these two ways' test results will be evaluated and analyzed to have a better understanding of how users respond to and interact with the dashboard.

4　Results and Discussion

A comparison of the JoinGeek Admin appearance before and after the redesign is shown in Figure 3 to Figure 5. It can be seen that before the redesign, the appearance had less contrasting colors and looked stiffer. This can have an influence on the user experience (UX), as it makes the user interface (UI) difficult to navigate and less visually attractive [16]. In the redesign stage, color contrast was increased to improve visual clarity, and the overall interface was simplified. The objective is to allow users to interact more easily since the display is more attractive and intuitive, thus providing a more satisfying user experience. However, it is necessary to test the user experience of JoinGeek Admin both before and after the redesign.

(a)　　　　　　　　　　　　　　　　　　　　　　　　　　(b)
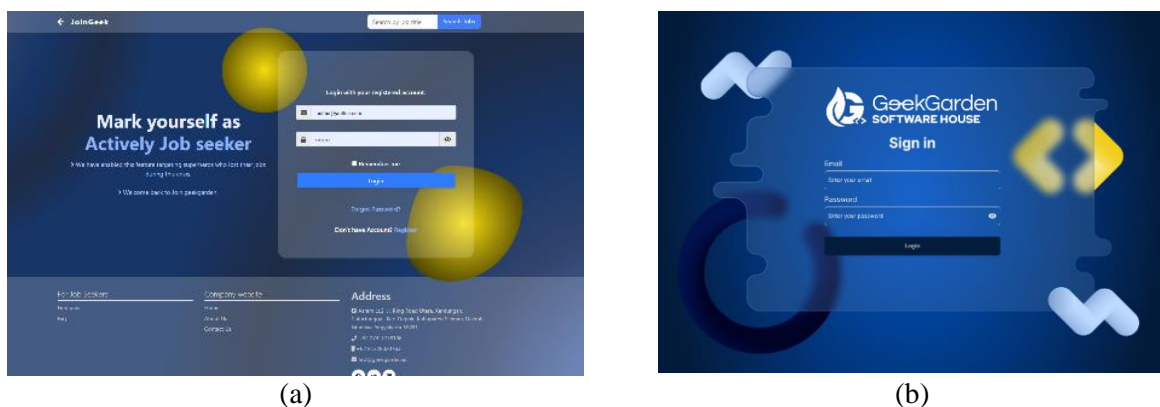
Figure 3 Login Page: (a) Before and (b) After Redesign

(a)   (b)
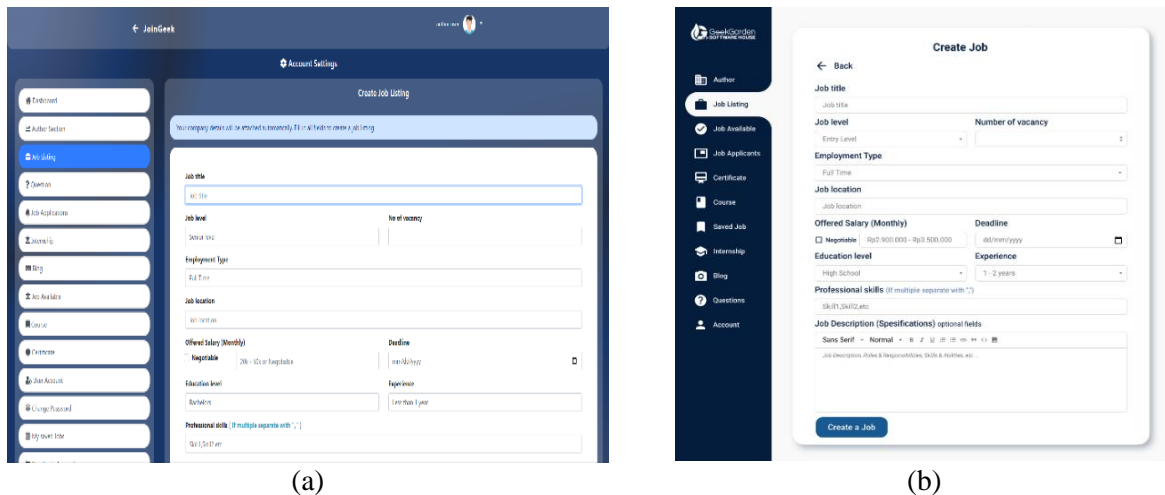
Figure 4 Create Job Page: (a) Before and (b) After Redesign

(a)   (b)
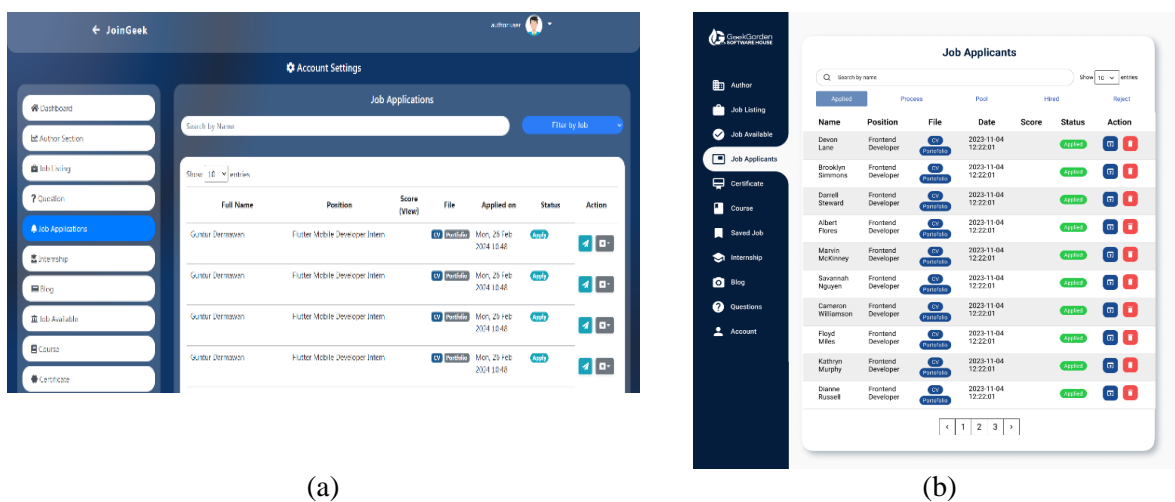
Figure 5 Job Applicants Page: (a) Before and (b) After Redesign

4.1   Test Results Using UEQ

The user experience is evaluated by administering UEQ questionnaires to preset respondents, specifically Geekgarden HR staff who serve as system users. The obtained data will be input into the UEQ data analysis tool, an analysis mechanism that processes values from respondents' answers. This tool performs data calculations to produce values for each dimension and visualizes them using diagrams. The results of 26 UEQ statements are organized into six main UEQ dimensions. Figure 6 depicts a comparison of the mean outcomes before and after the redesign, with further information available in Table 3.

(a)   (b)
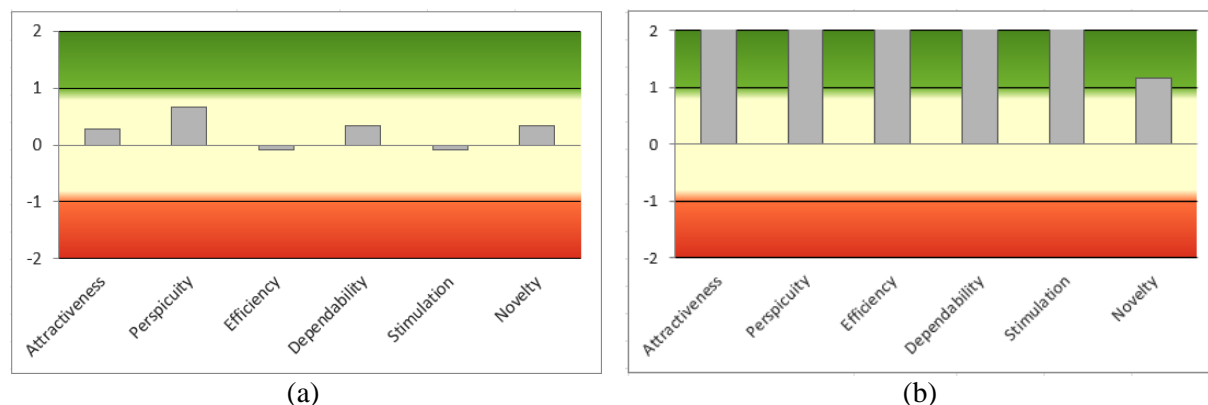
Figure 6 Mean Value Graph: (a) Before and (b) After Redesign

Table 3 Comparison of Mean Values of Each UEQ Dimension

Category	Mean		UEQ Dimension	Mean		
	Before Redesign	After Redesign		Before Redesign	After Redesign	Value Change
Attractiveness	0.28	2.44	Attractiveness	0.278	2.444	+2.166
Pragmatic Quality	0.31	2.33	Perspicuity	0.667	2.333	+1.666
			Efficiency	-0.083	2.333	+2.416
			Dependability	0.333	2.333	+2
Hedonic Quality	0.13	1.79	Stimulation	-0.083	2.417	+2.5
			Novelty	0.333	1.167	+0.834

The test results show significant changes in various UEQ dimensions in the system before and after the redesign. First of all, there is a significant increase in the attractiveness category, which assesses whether or not users like the system. The mean value has risen from 0.278 to 2.444. It may be stated that the design adjustments were beneficial in making the product more appealing to users and leaving a positive impression.

Furthermore, in the pragmatic quality category, the mean value of the system before the redesign of 0.31 increased significantly to 2.33. This category includes the dimensions of perspicuity, efficiency, and dependability, all of which have increased in mean value. Perspicuity, which evaluates how easily users learn how to use the system, increased from 0.667 to 2.333. This indicates that the design changes were successful in making the system easier for users to understand. Efficiency, which measures whether users can complete their tasks efficiently, increased from -0.083 to 2.333. Meanwhile, dependability, which evaluates whether users feel they have control over the interaction, also saw a significant increase, from 0.333 to 2.333. These improvements indicate positive achievements for the system after the redesign.

In the hedonic quality category, there is an increase in the mean value from 0.13 to 1.79. This category measures the stimulation and novelty dimensions. The stimulation dimension measures the extent to which the system attracts and motivates users, having a significantly increased mean value from -0.083 to 2.417. This increase indicates that design changes not only improve functional aspects, but are also able to create a more engaging and motivating user experience. Furthermore, in the novelty dimension, the mean value before the redesign was 0.333 and increased to 1.167 after the redesign. This increase reflects that the innovation and creativity of the system are more appreciated by users after the design change. Overall, the UEQ evaluation results on the system after the redesign showed a significant increase in all dimensions, indicating a positive response from users.

In addition, the mean value is not only used to determine user perception, but also used for benchmark comparison. This is to determine the comparison of user experience on JoinGeek Admin with 468 other systems or products that have been evaluated using UEQ. The results of the benchmark

value on JoinGeek Admin before and after the redesign can be seen in Figure 7 and Figure 8 with further details available in Table 4 Quality Categories on Benchmark.
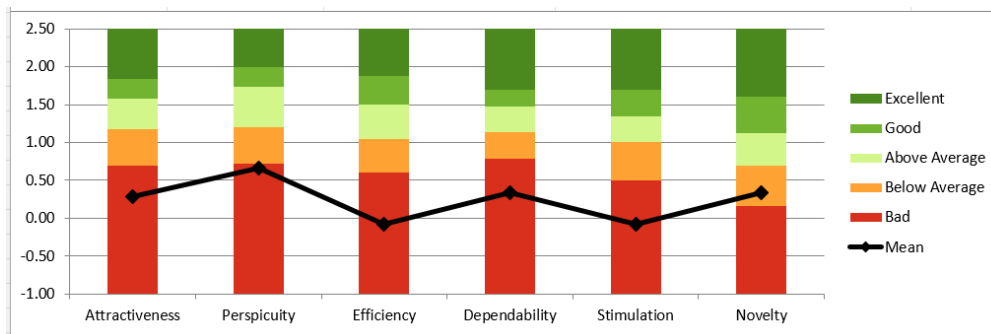

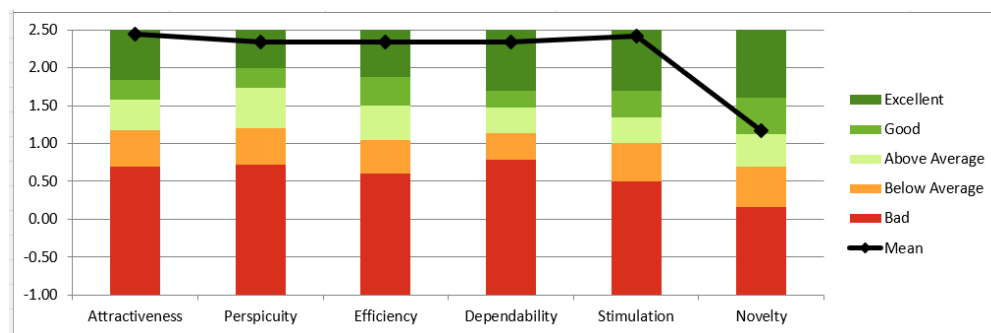**Figure 7 Benchmark Graph on System Before Redesign**

Figure 8 Benchmark Graph on System After Redesign

Table 4 Quality Categories on Benchmark Value Comparison

UEQ Dimensions	Before Redesign		After Redesign	
	Mean	Description	Mean	Description
Attractiveness	0.28	Bad	2.44	Excellent
Perspicuity	0.67	Bad	2.33	Excellent
Efficiency	-0.08	Bad	2.33	Excellent
Dependability	0.33	Bad	2.33	Excellent
Stimulation	-0.08	Bad	2.42	Excellent
Novelty	0.33	Below Average	1.17	Good

Table 4 contains a description of the mean value, which is the quality category of the six UX aspects, which is obtained by looking at the mean value based on the benchmark interval in Table 1. There are five quality categories that have the following interpretations [17]:
a. Excellent: the system is in the top 10% of systems/products evaluated.
b. Good: there are 10% of other systems/products that are better than the evaluated system, while 75% of other systems/products are worse.
c. Above average: there are 25% better systems/products and 50% worse systems/products.
d. Below average: there are 50% better systems/products and 25% worse systems/products.
e. Bad: the evaluated system falls into the worst 25% of products.

There was a significant improvement between the system before and after the redesign, in the dimensions of attractiveness, perspicuity, efficiency, dependability, and stimulation, all of which changed from "Bad" to "Excellent". This signifies a positive change in terms of a more attractive, intuitive, efficient, and consistent interface. Novelty saw an increase from the "Below Average" category to "Good," reflecting an increase in product innovation and creativity that is more appreciated by users. Overall, the benchmarking results paint a positive picture of the success of the redesign in improving the overall quality of the user experience.

4.2 Usability Testing Results

Usability testing is a crucial aspect of evaluating the ease and efficacy of a system or prototype. The JoinGeek Admin prototype (system after redesign) underwent usability testing to determine its success rate, efficiency, and error rate. This evaluation sheds light on how well the prototype assists users in attaining their objectives and how user-friendly the system is.

4.2.1 Success rate

Evaluating the success rate of respondents in completing task scenarios is a crucial aspect of usability testing. By measuring the success rate, it is possible to gauge the extent to which users can achieve their goals and how effective the system is in supporting their interactions. There are various criteria for measuring success rate [14]:

a) Successful (S): Indicates that the respondent successfully completed the task in the given scenario without any errors.
b) Partially Successful (PS): Indicates that the respondent was able to complete the task in the scenario, but errors were made during the process.
c) Failed (F): Indicates that the respondent did not successfully complete the given task.

Table 5 Recap of Task Scenario Completion

Code	R1	R2	R3
ST-01	S	S	S
ST-02	PS	S	S
ST-03	S	S	S

$$Success\ Rate = \frac{Success+(Partial\ \times0.5)}{Total\ Task} \times 100\% \qquad (1)$$

$$= \frac{8+(1\ \times0.5)}{9} \times 100\% = 94\%$$

Based on the results of calculations using formula (1) on the results of completing the task scenario in Table 5, a success rate value of 94% is obtained. This means that the average percentage of success of each user in completing a total of three scenario testing tasks is 94%. This achievement reflects a high success rate for the JoinGeek Admin prototype (after redesign) in supporting users in completing the assigned tasks. The success can be interpreted that the interface and functionality of the prototype have been well designed, so that users can effectively navigate and complete the assigned tasks. This provides a positive picture of the usability and ease of use of the JoinGeek Admin prototype.

4.2.2 Efficiency

Efficiency measurement is carried out by paying attention to the duration of time required by respondents in completing the given task scenario.

Table 6 Recap of Task Scenario Work Time

Kode	R1	R2	R3
ST-01	125(1)	24(0.5)	14(1)
ST-02	55(1)	16(1)	9(1)
ST-03	90(1)	26(1)	15(1)

$$Times-Based\ Efficiency = \frac{\sum_{J}^{R}\sum_{i=1}^{N}\frac{N_{ij}}{t_{ij}}}{NR} \times 100\% \qquad (2)$$

$$= \frac{346}{374} \times 100\% = 92.5\%$$

Table 6 shows a recap of the time taken to complete the task scenario. The calculation of efficiency is done using formula (2), with the criteria that the processing time is multiplied by 1 if the respondent completes the task scenario without experiencing errors; multiplied by 0.5 if the respondent completes the task scenario but there are errors in the process; and multiplied by 0 if the respondent fails to work on the given task scenario. Based on the calculation results, it shows that respondents successfully completed the task with an efficiency of 92.5%, reflecting good performance in the time aspect of using JoinGeek Admin. This value can be interpreted as a positive indicator of the potential use of this system in real-world situations.

4.2.3   Error rate

Evaluation of the error rate in using the JoinGeek Admin system is done by counting the number of errors that occur when respondents work on task scenarios. Each error that appears when running the task scenario will be recorded as an incorrect value (F), while if there is no error, it is recorded as a correct value (T).

Table 7 Recap of the Number of Errors in the Task Scenario Work

Kode	R1		R2		R3	
	T	F	T	F	T	F
ST-01	17	0	3	1	5	0
ST-02	17	0	4	0	5	0
ST-03	17	0	4	0	5	0

$$Error\ rate = \frac{Total\ Error}{Total\ Opportunities} \times 100\% \qquad (3)$$

$$= \frac{1}{26} \times 100\% = 3.8\%$$

Based on

Table 7 which contains a recap of the number of errors during the task scenario, the error rate calculation was carried out using formula (3), which resulted in a value of 3.8%. This value reflects the percentage of errors that occurred during usability testing. This result shows a low error rate, indicating that JoinGeek Admin provides a consistent user experience and minimal difficulty in use.

5   Conclusion

This study employs two approaches to assess user experience in JoinGeek Admin: UEQ and usability testing. Testing with UEQ reveals that JoinGeek Admin achieved much better test results on the system after the redesign compared to the system before the redesign on the six UEQ dimensions, as seen by the resulting mean value. The system's evaluation after redesign showed that the attractiveness dimension had a mean value of 2.444, perspicuity of 2.333, efficiency of 2.333, dependability of 2.333, stimulation of 2,417, and novelty of 1,167. This shows that the redesign of the JoinGeek Admin interface was successful in improving the user experience according to the UEQ assessment dimensions. The usability testing results were likewise positive, with a 94% success rate, 92.5% efficiency, and 3.8% error rate. Thus, the overall evaluation results prove that the JoinGeek Admin redesign has succeeded in improving the evaluation results on aspects of user experience (UX).

Reference

[1] IDN Research Institute, "Indonesia Millennial Report 2019." Accessed: Mar. 13, 2024. [Online]. Available: https://cdn.idntimes.com.

[2] Asosiasi Penyedia Jasa Internet (APJII), "Survey Penetrasi & Perilaku Internet 2023." Accessed: Mar. 13, 2024. [Online]. Available: https://survei.apjii.or.id/survei/

[3] R. Mayasari and N. Heryana, *Konsep dan Teori Desain User Experience*. 2023.

[4] N. R. Wiwesa, "User Interface dan User Experience untuk Mengelola Kepuasan Pelanggan," *Jurnal Sosial Humaniora Terapan*, vol. 3, no. 2, 2021, doi: 10.7454/JSHT.V3I2.116.

[5] R. A. Sianturi, "Penerapan User Experience Design pada Pengembangan Aplikasi Mobile Markopi," *Jurnal Teknologi Informasi dan Ilmu Komputer (JTIK)*, vol. 8, no. 4, pp. 703–712, 2021, doi: 10.25126/jtiik.202182840.

[6] M. A. Kushendriawan, H. B. Santoso, P. O. H. Putra, and M. Schrepp, "Evaluating User Experience of a Mobile Health Application Halodoc using User Experience Questionnaire and Usability Testing," *Journal of Information System)*, vol. 17, no. 1, 2021, doi: 10.21609/jsi.v17i1.1063.

[7] A. S. Ahda and C. I. Ratnasari, "Pengujian Pengalaman Pengguna pada Website Jurusan Informatika UII menggunakan User Experience Questionnaire," *Jurnal Sistem Informasi*, vol. 12, no. 2, pp. 527–536, 2023, doi: 10.32520/stmsi.v12i2.

[8] Y. E. Achyani and A. R. Andini, "Perancangan UI/UX Aplikasi Booking Self Photo Studio Menggunakan Metode Design Thinking," *Jurnal Teknik Komputer*, vol. 10, no. 1, pp. 86–94, Jan. 2024, doi: 10.31294/jtk.v10i1.17006.

[9] G. Y. Rahayu and A. Indrati, "Perancangan Ulang Antarmuka Portal KitaLulus Dengan Menggunakan Metode Centered Design (UCD)," *Jurnal Ilmiah Teknik (JUTI)*, vol. 3, no. 1, pp. 66–73, 2024, doi: 10.56127/juit.v3i1.

[10] A. Pratama, S. Mukaromah, M. Idhom, A. Faroqi, T. L. M. Suryanto, and R. Parlika, "Analisis Website Pusat Pengembangan Karir Berdasarkan Pengalaman Pengguna:Pendekatan User Experience Questionnaire (UEQ)," *Jurnal Teknologi Informasi dan Terapan (J-TIT)*, vol. 10, no. 2, pp. 2580–2291, 2023, doi: 10/25047/jtit.v10i2.321.

[11] Andreas Hinderks, Martin Schrepp, and Jörg Thomaschewski, "User Experience Questionnaire." Accessed: Feb. 28, 2024. [Online]. Available: https://www.ueq-online.org/

[12] O. Kusuma, A. Munir, and H. Surasa, "Usability Testing Aplikasi Hi Jobs! Menggunakan Teknik Performance Measurement dan Concurrent Think Aloud," *Jurnal Kharisma Tech*, vol. 18, no. 2, pp. 133–147, 2023, doi: 10.55645/kharismatech.v18i2.439.

[13] P. Tulus Nugraha, I. M. Sukarsa, and N. K. D. Rusjayathi, "Usability Testing Sistem Love Bali Menggunakan Teknik Performance Measurement dan Concurrent Think Aloud (CTA)," *Jurnal Ilmiah Teknologi dan Komputer (JITTER)*, vol. 3, no. 2, pp. 1137–1152, 2022, doi: 10.24843/JTRTI.2022.v03.i02.p13.

[14] M. Rofida Rahmatina and C. Indah Ratnasari, "Interface and User Experience Designing in The Kapustakan System Using User Centred Design Approach (Case Study: Keraton Ngayogyakarta Hadiningrat)," *Jurnal Teknologi Informasi Universitas Lambung Mangkurat (JTIULM)*, vol. 7, no. 1, pp. 37–42, 2022, doi: 10.20527/jtiulm.v7i1.120.

[15] E. C. Shirvanadi, M. Idris, "Perancangan Ulang UI/UX Situs E-Learning Amikom Center Dengan Metode Design Thinking (Studi Kasus: Amikom Center)," *AUTOMATA*, vol. 2, no. 2, 2021.

[16] N. Sugiyarti and R. Abul Hasani, "Re-Design UI/UX IBS Core dengan Metode Design Thinking Untuk Meningkatkan Pengalaman Pengguna," *Kajian Ilmiah Informatika dan Komputer (KLIK)*, vol. 4, no. 1, pp. 93–102, 2023, doi: 10.30865/klik.v4i1.1028.

[17] M. Schrepp, "User Experience Questionnaire Handbook," 2023. [Online]. Available: www.ueq-online.org