

Usability Evaluation in Electronic Employee Performance Reports Using the Usability Testing Method

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ABSTRACT

Employee Performance Reports electronically (LKP) are used by lecturers to periodically report performance on performance for 6 months which includes teaching, research, and community service plus support. Sometimes in the reporting, there are obstacles experienced by lecturers related to filling out the report. The purpose of this research is to measure effectiveness, efficiency, and user satisfaction. Besides that, I want to know the topics that are often discussed by the lecturer participants. This research was conducted involving 5 lecturers who actively used E-LKP. Data collection was carried out through experiments in which participants used E-LKP and gave their opinions about E-LKP using the Think Aloud method and analyzed using QDA Miner Lite. This usability testing test results show that the effectiveness value is 95%, the efficiency value is 96% and the SUS value is 61. The results of think-aloud when working on assigned scenarios are analyzed using QDA Miner Lite software so that the 6 highest coding frequencies in this study are Activity, Assignment Letters, External Activities, Moving Activities, Activity Codes, and Research.

Keywords: E-LKP, Employee Performance Reports, Usability Testing, QDA Miner Lite

ABSTRAK

Laporan Kinerja Pegawai secara elektronik digunakan dosen untuk melakukan pelaporan kinerja secara berkala atas kinerja selama 6 bulan yang meliputi pengajaran, penelitian dan pengabdian masyarakat ditambah penunjang. Terkadang dalam pelaporan tersebut terdapat kendala – kendala yang dialami oleh dosen terkait dengan pengisian pelaporan tersebut. Tujuan dari penelitian ini adalah ingin mengukur efektivitas, efisiensi dan kepuasan pengguna. Selain itu ingin mengetahui topik – topik yang sering dibicarakan oleh partisipan dosen. Penelitian ini dilakukan melibatkan 5 orang dosen yang menggunakan E-LKP secara aktif. Pengumpulan data melalui eksperimen dengan cara partisipan menggunakan E-LKP dan memberikan pendapatnya tentang E-LKP dengan metode *Think Aloud* dan dianalisis dengan QDA Miner Lite. Hasil dari uji usability testing ini adalah nilai efektivitas adalah 95%, nilai efisiensi adalah 96% dan nilai SUS adalah 61. hasil dari *think aloud* sewaktu mengerjakan skenario yang ditugaskan dianalisis menggunakan software QDA Miner Lite sehingga didapatkan 6 frekuensi coding terbanyak pada penelitian ini adalah Aktivitas, Surat Tugas, Kegiatan Eksternal, Pindah Aktivitas, Kode Aktivitas dan Penelitian.

Kata Kunci: E-LKP, Laporan Kinerja Pegawai, Usability Testing, QDA Miner Lite



INTRODUCTION

The Electronic Application for Employee Performance Reports (E-LKP) is an interpretation of the issuance of Government Regulation (PP) Number 46, the Year 2011. This Government Regulation contains an Assessment of the Work Performance of Civil Servants. The Government Regulation contains two elements of assessment, the first is the Employee Work Target (SKP) and the second is the Work Behavior described in the regulation.

In order to carry out the Tri Dharma of Higher Education, lecturers have an obligation to carry out teaching, research, and community service. The LKP application itself has been running since 2013 (SPI 2016).

Lecturers and employees can fill out performance reports in the application and then produce an Employee Performance Report (E-LKP). The use of this application is intended for employees and lecturers. This study will be discussed the use of applications by lecturers.

Lecturers reporting performance through the e-LKP system sometimes experience problems. We can not know the problems faced by the lecturer. Does the lecturer feel that the e-LKP system is effective, efficient, and satisfying? The purpose of this research is to test the usability of the e-LKP system. Is the system effective, efficient, and satisfying to users?

Aspects of usability according to ISO 1998 (Aprilia, Santosa, and Ferdiana 2015): Effectiveness: This aspect can be demonstrated by the user's level of accuracy and completeness in carrying out the requested scenario or task. Efficiency: This aspect shows the resources used by the user which can be related to the accuracy and completeness that can be achieved by the user in carrying out the requested task. Satisfaction: In this aspect, the user feels comfortable and has a positive attitude toward using the item.

Several studies have tested the usability of websites. The research conducted by Isa in 2014 was to test the usability testing research framework made by researchers by conducting experiments on the Handicraft Web Based

System on 20 participants. By using the usability testing research framework, problems and solutions can be identified (Isa et al. 2014).

The research aims to assess the function and usability of the DetikCom news website. This study also uses the SUS method, testing its validity and reliability. Research on DetikCom produces good validity and reliability (Sidik 2018).

Research conducted at a state Islamic university uses the usability method framework using data collection techniques, namely by query technique, formal experiment, thinking aloud then analysis using the automatic usability scale and content analysis using Qualitative data analysis (QDA) software Miner Lite. The results of this study are visual design recommendations and testing several techniques for carrying out usability testing (Subiyakto et al. 2021).

The designer must pay attention to aspects of effectiveness, efficiency, and satisfaction. Designers will try to create a system with a nice interface, but sometimes users do not understand how to use it. the system that has been built cannot achieve the initial purpose of the system being built. because users do not understand how to use it. Users expect a good design so as not to experience failures using the system.

To overcome these failures, it is necessary to do a good design with good design principles. By carrying out Usability Testing, it is hoped that it will be known what deficiencies exist in the application and the experience that users think of the application. Therefore, it can be proposed to test the usability of the E-LKP website application at UIN Syarif Hidayatullah Jakarta. The purpose of this study is to measure the level of effectiveness, efficiency, and satisfaction of lecturers as users of employee performance electronic applications. We want to know the topics that often appear in think-aloud recordings while conducting the requested experiments or scenarios.

RESEARCH METHODS

The following is the framework of this research.

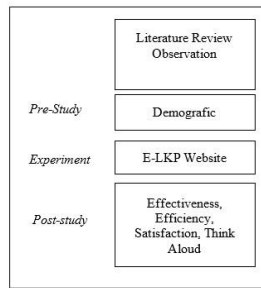


Figure 1. Research Method

First, Preliminary studies consist of literature studies and observations. At this stage, the researcher searches for literature, and articles related to usability testing and makes observations of the objects to be researched.

Second, Stage 1 is Pre-Study: In this pre-study, the stages of collecting participant demographic data and general data are carried out. The sample in this study was 5 lecturers who actively used applications or information systems for Employee Performance Reports (E-LKP) in the Faculty of Science and Technology UIN Syarif Hidayatullah, three Information Systems lecturers, one Informatics Engineering lecturer, and 1 lecturer Biology study program. Then questions about participant data, age range, and daily internet usage of the participants.

Third, Stage 2 is Experiment: Participants are asked to perform tasks based on scenarios using the think-aloud method. Participants were asked to provide comments related to filling out the E-LKP system. The following is a scenario assigned to the participants.

Fourth, Stage 3 is Post Study. By conducting interviews and filling out the SUS questionnaire to find out user satisfaction. SUS assessment is limited to participants only. The results of the Think Aloud Method are obtained from what the participants expressed when carrying out the assigned task scenarios. These results were analyzed with QDA Miner Lite software. The tasks performed by the participants will be measured and will produce values of effectiveness, efficiency, and satisfaction.

- a. You are a lecturer who wants to add to the activity of participating in a webinar at E-LKP UIN JKT. How do you add activities

to participate in the webinar in E-LKP UIN Jakarta?

- b. You are a lecturer who has conducted research with your students and you want to add to the results of the research you have done with your students. How do you do it?
- c. You have carried out activities outside the campus and you want to report it to the E-LKP. How do you do it?
- d. You have filled out all the activities and you want to move the activities. How do you move the activity?

RESULTS OF RESEARCH AND DISCUSSION

The E-LKP system is used by employees and lecturers, both civil servants and non-PNS at UIN Syarif Hidayatullah Jakarta. E-LKP for lecturers contains a system that can be used by lecturers to input teaching, research, community service, and support data. It is also intended to fulfill the Tridharma of higher education. Tridharma lecturers are lecturing, researching, and community service. In this report added support. Lecturer reports are opened at the end of the semester and filled in by lecturers according to instructions from the SPI (Internal Supervisory Unit) UIN Syarif Hidayatullah Jakarta.

The following in Figure 2 is a screenshot of the website page <https://lkp.uinjkt.ac.id> which is used by lecturers to fill out BKD (lecturer workload) and LKP reports at UIN Syarif Hidayatullah.

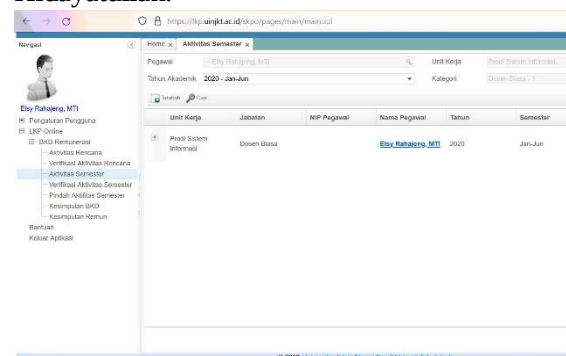


Figure 2 E-LKP

Table 1 shows the general information of the users who participated in this study.

Table 1 General Informations

Gender	Male	3 participants
	Female	2 participants
Age	41-50 tahun	4 participants
	51-60 tahun	1 participant
Using Internet	Every day	4 participants
	3 times a week	1 participant
Study Program	Information Systems	3 participants
	Informatics	1 participant
Purpose	Biology	1 participant
	Get Lecturer Certification and remuneration	5 participants
	Other	0 participant

The next activity is to give directions to participants to work on the task scenarios that were previously described. Participants use their E-LKP system to work on task scenarios. After that will be calculated efficiency, effectiveness, and satisfaction. To calculate satisfaction, the researchers distributed SUS questionnaires to the participants. After that, the results of the SUS questionnaire were calculated.

The following is the completion time. There was one participant who did not complete the task scenario. Shown in red in table 2. With table 2, the effectiveness value will be obtained.

Table 2 Task Completion

No	Task Completion			
	Task 1	Task 2	Task 3	Task 4
P1	1	1	1	1
P2	1	1	1	0
P3	1	1	1	1
P4	1	1	1	1
P5	1	1	1	1

$$Effectiveness = \frac{19}{20} \times 100\% = 95\%$$

The effectiveness value obtained from the calculation results is 95%. This was because there was 1 participant, namely participant 2, who did not complete the task. Based on table 3, the participants' completion time was measured. The result is an efficiency value. Then the efficiency value is obtained from the formula:

$$Overall\ Relatives\ Efficiency = \frac{\sum_{j=1}^R \sum_{i=1}^N n_{ij} t_{ij}}{\sum_{j=1}^R \sum_{i=1}^N t_{ij}} \times 100\%$$

Tabel 3 Time Completion

No	Time Completion			
	Task 1	Task 2	Task 3	Task 4
P1	277	173	169	78
P2	280	225	109	131
P3	167	456	456	222
P4	195	60	58	34
P5	225	127	92	60

$$Efisiensi = \frac{3363}{3494} \times 100\% = 96\%$$

Based on previous data, the efficiency value in the usability test of this study is: the efficiency value obtained is 96%. Based on the results of the study, even though all tasks could be completed successfully, some participants took a very long time to complete a task. this is because there are several website components that are considered confusing so participants need time to be able to complete the tasks given. After getting the Effectiveness and Efficiency values, we measure the SUS value. Based on the questions that refer to the SUS Score by participant in figure 3. After getting the Effectiveness and Efficiency values, we measure the SUS value.

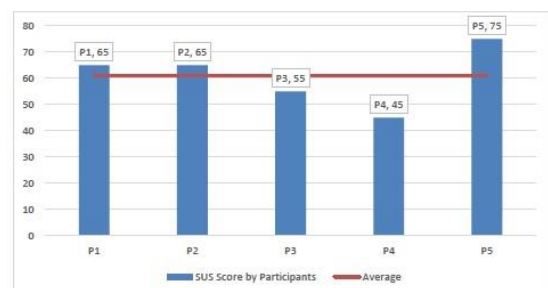


Figure 3 SUS Score by Participant

We average the SUS score for each participant, so we get a value of 61. Then the overall SUS score is 61. The following is an analysis of the SUS Score, if you look at the E-LKP SUS score, which is 61 for the Acceptability Range, including the Low Marginal, as we can see in Figure 4.

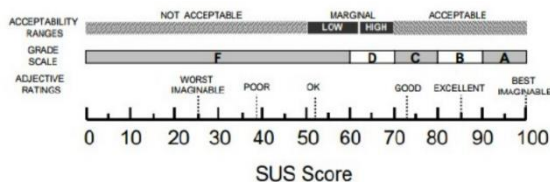


Figure 4 SUS Score

After analyzing the data above, it was found that the usability value of the E-LKP website was effectiveness at 95%, efficiency at 96%, and satisfaction at 61 points.

Figure 5 is the result of the think-aloud obtained from what the participants felt when they accessed the E-LKP website.

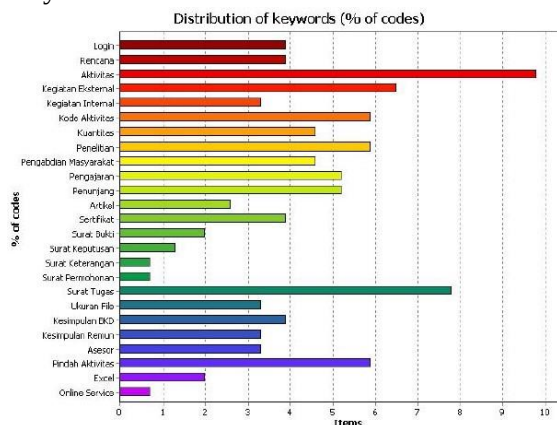


Figure 5 Distribution of keywords (% of codes)

Figure 5 shows the 6 most frequent coding frequencies, namely Activities at 9.8%, Assignment Letters at 7.8%, External Activities at 6.5%, Activity Codes at 5.9%, and Research at 5.9%. Participants talked a lot about the six topics. They report their performance by uploading their activities on the LKP application.

The activity section is the part that is mostly uploaded by lecturers because this is part of the lecturer's reporting in LKP. Then the assignment letter is 7.8%. In this section, the

lecturer comments a lot because if you want to get an assessment from the assessors, the lecturer participants must upload the assignment letter requested per activity. External activities are activities carried out by lecturers outside of activities carried out on campus. This topic was discussed by 6.5%. The activity code is important because before the lecturer fills in the activity, the lecturer must know the activity code. the lecturer will look for the activation code and then fill it in on the LKP page. After that the topic that was widely discussed was research. Research is an important aspect of the Tri Dharma of Higher Education.

The effectiveness value obtained in this study was 95%. This shows that the E-LKP system is included in an effective system for reporting Lecturer Workload and Lecturer Remuneration at UIN Syarif Hidayatullah Jakarta. The efficiency value obtained in this study is 96%. This shows that the E-LKP system is included in the efficient category because participants can carry out scenarios. This is because the participants have used the E-LKP system before. The satisfaction score obtained from the SUS questionnaire is 61. This is in Grade D. For user satisfaction it is still OK but this is below the value of 68 and it is hoped that the E-LKP system can be improved again. The E-LKP system needs to be improved by paying attention to what users think still needs to be improved.

CONCLUSION

Research involving lecturers, in this case, lecturers from the Faculty of Science and Technology, can be concluded as follows: The results of calculating the Usability value in the E-LKP system of UIN Syarif Hidayatullah at the efficiency value is 96% and the effective value is 95%. Meanwhile, the satisfaction score is 61. Thus, the E-LKP website has acceptability ranges at the Marginal Low level, the grade scale is included in Grade D, and the adjective ratings are OK.

It can be explained that the 6 most frequent coding frequencies in this study are Activities, Letters of Assignment, External Activities,

Moving Activities, Activity Codes, and Research.

SUGGESTION

The follow-up study for this research is to conduct research by conducting interviews with users and can use the heuristic evaluation method. By using this method, we will get advice and recommendations from experts in the field of usability.

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