

# Usability Testing on the Simponik Website using the System Usability Scale (SUS)

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**Abstract:** SIMPONIK is one of the websites developed by the Furniture and Wood Processing Industry Polytechnic to answer the challenges during online learning due to Covid-19 and the large number of guests visiting because it is located in an Industrial Estate. To improve the website's service and user experience, there must be testing of the website's usability. The purpose of this study is to test the usability of the SIMPONIK website as a basis for improving the appearance and services available on the website. This study uses the System Usability Scale (SUS) method by distributing questionnaires to 100 respondents. From the results of this study, the SUS score was 76,025, which means the SUS category is acceptable (71-100). Although the results are categorized as acceptable, there must be improvements must be made, especially in terms of practicality and convenience for users.

Keywords: Simponik; Usability; SUS; Website; User (minimal 5 words)

## INTRODUCTION

Producing human resources who can make good furniture is one of the goals of the Furniture and Wood Processing Industry Polytechnic-carrying the name of Vocational Education, which requires institutions to provide curriculum, learning, facilities, and infrastructure that are more inclined towards practice. This is in line with preparing personnel who can establish expertise and skills in their fields, are ready to work, and can compete globally. Currently, the Polytechnic has provided learning facilities similar to the furniture industry. It is just that some weaknesses exist in the current Polytechnic, such as these machines cannot be operated simultaneously due to the limited number of supporting machines such as compressors. For this reason, the Polytechnic has been dealing with it by using it interchangeably. This makes learning services limited to students and less than optimal in carrying out the operational activities of the teaching factory unit. In addition, due to the Covid-19 pandemic, most learning is diverted using online methods. So, to do a practicum in the Workshop is constrained and makes the Polytechnic have to make a schedule for 1 class in turn (shift system), which increases the operational costs of the Polytechnic. In addition, the Furniture and Wood Processing Industry Polytechnic is located in the Kendal Industrial Estate. Because it is under the Ministry of Industry and stands at KIK, the Polytechnic is often visited by guests from the Ministry of Industry, Service, Local Government, Furniture Industry, Educational Agencies, and other institutions who want to see the educational process at the Polytechnic.

Furniture and Wood Processing Industry Polytechnic to design an Information System that provides information services about machines and videos of machines in the Workshop that can be used by Students for Learning, especially for courses related to Knowledge of Production Machines in the Furniture Workshop. In addition to being used in learning, this Information System can also be used for information services for every guest who visits the Furniture Workshop and wants to know about the existing machines, as well as displaying or imaging that our students are capable of operating each machine at the Polytechnic. So other industries/institutions who want to cooperate in absorbing graduates, conducting research, PKM, and teaching factories believe that the human resources here have quality capabilities. The system has been created under the name SIMPONIK. Simponik is expected to be a solution for learning media for both online and offline learning. In addition, Simponik aims to improve services for the community, industry, government, and any parties who visit the Furniture and Wood Processing Industry Polytechnic in terms of services related to the introduction of the machines at the Furniture and Wood Processing Polytechnic Workshop. It is just that usability testing needs to be done so that every student or visitor feels satisfaction in opening the website. For this reason, this study aims to test the usability of the SIMPONIK website as a basis for improving the appearance and services available on the website. Several studies that discuss usability on websites include those conducted by Wiratama & Sasongko (2017), stating that the website of SMK Muhammadiyah 2 Sragen can be said to be good, and the navigation is not yet effective. Then another research conducted by Fauseh (2020) stated that by using usability





testing, it was found that the PCC Building website was considered quite good. Finally, the usability testing research on the website conducted by Purnamasari & Syakti (2020) stated that only the memorability, learnability, and error variables were good, while the efficiency and satisfaction variables were still not suitable. From the previous research, it can be concluded that usability testing can be used as a reference in improving a website.

## LITERATURE REVIEW

Several previous studies have used usability testing to test the applications built by them. From these studies, it is stated that usability testing aims to determine whether the application built has answered the user's needs or not (Buana & Nurina Sari, 2022; Fatah, 2020; Murti, 2020; Nurhadryani et al., 2013; Rizki et al., 2021; Surono Wibowo, 2016; Tuloli et al., 2022; Yuliyana et al., 2019). Then studies related to usability but focused on using the user experience questionnaire method were carried out by Firmansyah, (2018); Junita Maulani & Reza Perdanakusuma, (2021) In their research, they concluded that the Use Questionnaire could be used to measure the usability of a software/application interface. as well as research specifically using the System Usability Scale, it was found that the System Usability Scale method can be used to test websites/applications in a structured way (Aprilia et al., 2015; Buana & Nurina Sari, 2022; Tuloli et al., 2022). This indicates that existing methods can be used to improve the experience and satisfaction of the user in opening the website. For this reason, this study uses the System Usability Scale (SUS) method.

A system Usability Scale (SUS) is an information system using a test method that provides a measuring tool that can be superior (John Brooke (1986). This model uses ten questions which are formed into a questionnaire which is then given five answer options for each question, starting with Strongly Agree to Disagree Strongly. This method was introduced by John Brooke (1986). This method can evaluate various products and services, mobile devices, websites, and applications.

The ten questions on the SUS questionnaire include the following:

- 1. I seem to be using this application often.
- 2. I find this application too inconvenient, even though it can be more straightforward.
- 3. I think this application is easy to use.
- 4. I seem to need help from a technical person to be able to use this application properly.
- 5. I think the menu in this application is well integrated
- 6. I think there are many inconsistent things in this application.
- 7. I think most users will be able to learn this application quickly.
- 8. I think that this application is not practical when used
- 9. I am very confident that I can use this application.
- 10. I have to learn many things first before I can use this app.

Then the SUS Assessment is as follows:

- 1. For questions with odd numbers, the scores answered by the respondents on the questionnaire minus 1 point
- 2. For questions with even numbers, then the score answered by the respondents on the questionnaire minus 5 points
- 3. All scores are added up, then multiplied by 2.5. The value of the questionnaire to be obtained is between 0-100

The assessment results are based on three categories: Not Acceptable = score 0-50.9 Marginal = score 51-70.9 Acceptable = score 71-100.

#### **METHOD**

Measurements using the System Usability Scale (SUS) method for the Simponik website were carried out by distributing questionnaires to respondents. The stages can be seen in Figure 1.



Fig. 1. Research Stages.





#### **Instrument Arrangement**

The instrument developed by John Brooke (1986) was used at the stage of preparing this instrument. Then enter it into the google form so that the respondent can fill it in directly.

#### **Respondent Selection**

At this stage, the respondents selected were respondents who had opened the SIMPONIK website, especially students of the Furniture and Wood Processing Industry Polytechnic, as many as 100 respondents. Respondents were asked to open the simponik website (simponik.poltek-furnitur.ac.id) and then fill out the questionnaires that were distributed. The SIMPONIK website used as an assessment for respondents can be seen in Figures 2 to 7, both on display on the computer and the smartphone.



Fig. 4 Page screen on Computer

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Fig. 5 Page screen on Smartphones



Fig. 6 Page screen on Computer (video)







Mesin bubut kayu cnc router ini memiliki tiga fungsi atau kegunaan sebagai berikut :

 Fungsi yang pertama adalah memotong atau *cutting* yaitu memotong kayu sesuai dengan keinginan Anda yang ketika mengoperasikannya menggunakan komputer. Maka kesalahan dalam pemotongan bisa diminimalisir.

2. Kegunaan yang kedua

adalah *mengravir* atau *engraving*. Sehingga dengan menggunakan alat ini bisa mendekorasi kayu sedemikian rupa agar terlihat lebih bagus dan juga terkesan lebih unik. Sehingga produk yang dihasilkan akan sangat memuaskan dan sangat indah.

 Setelah memotong dan juga mengravir, kegunaan lain yang dimiliki oleh mesin router kayu berbasis cnc ini

Fig. 7 Page screen on Smartphones (video)

## Data processing

At this stage, the data collected will be processed using the SUS formula by adding up all the values and multiplying by 2.5.

RESULT

After data is collected from 100 respondents, tabulation and scoring of the data is carried out as listed in table 1.

					Та	ble 1. S	Scorin	g Data				
Respondent	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Amount	Score (amount x 2,5)
1	2	1	1	4	4	1	5	3	2	5	28	70
2	1	3	1	5	4	4	4	3	4	1	30	75
3	5	2	1	4	3	2	1	3	5	4	30	75
4	5	1	1	1	2	4	4	5	3	1	27	67,5
5	5	2	4	4	5	2	1	2	2	5	32	80
6	1	1	3	4	4	2	5	5	1	2	28	70
7	2	4	4	4	1	1	4	5	2	3	30	75
8	4	4	1	2	1	3	5	4	1	3	28	70
9	2	2	1	1	4	1	3	3	5	1	23	57,5
10	4	3	4	2	3	1	4	2	3	1	27	67,5
11	4	5	5	2	4	4	3	4	1	3	35	87,5
12	4	3	4	5	3	2	5	1	5	1	33	82,5





Respondent	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Amount	Score (amount x 2,5)
13	2	4	4	3	3	3	3	2	5	4	33	82,5
14	1	2	5	2	3	5	1	1	4	2	26	65
15	4	4	4	4	3	2	3	4	1	4	33	82,5
16	4	1	4	5	4	2	4	2	1	4	31	77,5
17	3	3	2	5	5	2	2	1	5	1	29	72,5
18	1	5	1	3	5	1	5	5	4	5	35	87,5
19	3	3	1	4	2	2	4	4	3	4	30	75
20	4	5	5	4	3	1	1	3	3	1	30	75
21	3	5	2	3	5	4	4	5	4	5	40	100
22	5	3	3	1	1	5	5	1	4	5	33	82,5
23	5	1	4	3	2	3	4	5	4	3	34	85
24	1	2	2	2	4	5	1	5	5	3	30	75
25	5	3	4	4	5	4	3	3	5	5	41	102,5
26	1	5	5	3	4	5	1	4	3	1	32	80
27	5	3	1	2	2	2	5	2	2	3	27	67,5
28	1	5	3	2	1	1	5	2	4	4	28	70
29	4	3	1	5	4	1	1	1	1	5	26	65
30	3	1	4	2	2	1	5	5	5	4	32	80
31	2	2	5	2	1	2	3	2	3	5	27	67,5
32	4	3	3	3	2	5	3	1	2	2	28	70
33	5	1	4	5	1	3	2	3	5	3	32	80
34	1	2	2	1	4	2	5	2	3	3	25	62,5
35	1	3	4	3	3	4	1	1	5	4	29	72,5
36	3	2	3	5	2	1	1	1	2	4	24	60
37	1	2	2	1	5	3	5	4	5	1	29	72,5
38	5	1	5	4	5	3	4	3	5	3	38	95
39	5	3	5	4	1	2	5	2	1	2	30	75
40	2	1	4	3	5	1	2	2	2	3	25	62,5
41	2	3	1	3	5	3	4	3	4	5	33	82,5
42	5	5	3	4	4	2	5	3	4	4	39	97,5
43	3	3	4	1	5	5	1	3	4	2	31	77,5
44	3	5	3	5	1	3	4	4	5	1	34	85
45	1	3	3	5	4	2	1	3	3	5	30	75
46	4	1	1	4	4	5	5	5	4	4	37	92,5
47	1	1	5	2	5	3	2	2	5	3	29	72,5
48	4	1	4	5	4	4	1	4	3	3	33	82,5
49	1	4	2	4	1	1	2	4	5	4	28	70
50	1	1	4	5	2	3	5	1	4	3	29	72,5
51	4	4	1	5	5	4	5	1	5	1	35	87,5
52	5	2	3	4	3	5	5	5	1	4	37	92,5
53	5	5	1	3	5	2	4	4	5	5	39	97,5
54	1	5	2	3	5	5	4	3	5	3	36	90





Respondent	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Amount	Score (amount x 2,5)
55	2	2	3	3	1	1	2	2	3	2	21	52,5
56	4	2	1	5	2	1	5	5	2	4	31	77,5
57	5	4	2	1	3	2	5	1	1	4	28	70
58	1	2	1	2	4	1	4	3	3	5	26	65
59	1	2	4	4	5	3	1	5	2	5	32	80
60	5	3	4	1	5	3	5	4	2	3	35	87,5
61	5	5	4	2	1	3	4	5	5	3	37	92,5
62	3	4	4	5	3	1	2	2	5	2	31	77,5
63	2	5	5	2	5	5	3	2	5	4	38	95
64	2	1	2	3	1	3	5	5	2	1	25	62,5
65	2	5	3	5	2	1	5	1	3	1	28	70
66	3	1	4	4	1	1	5	2	3	3	27	67,5
67	3	1	1	4	1	1	4	5	1	4	25	62,5
68	3	4	3	3	1	1	5	2	1	1	24	60
69	3	1	4	2	5	4	2	5	2	4	32	80
70	3	5	1	5	2	1	1	1	3	5	27	67,5
71	2	5	2	2	3	5	5	1	5	4	34	85
72	1	2	2	2	3	2	5	1	1	4	23	57,5
73	5	2	2	5	3	3	2	5	5	1	33	82,5
74	1	1	4	4	2	5	4	5	4	5	35	87,5
75	2	1	5	4	2	2	5	4	3	2	30	75
76	1	4	3	5	5	1	1	5	1	1	27	67,5
77	2	4	2	3	5	1	1	4	5	5	32	80
78	5	5	1	4	5	1	2	1	3	5	32	80
79	1	3	4	2	3	2	2	4	5	3	29	72,5
80	3	4	2	1	4	5	3	3	5	2	32	80
81	3	1	4	5	2	2	2	5	5	5	34	85
82	5	3	5	2	4	3	2	3	2	1	30	75
83	3	5	2	1	4	3	1	3	4	2	28	70
84	4	3	5	5	1	4	5	3	2	2	34	85
85	3	4	2	4	3	5	3	1	1	1	27	67,5
86	4	4	3	1	2	3	1	1	3	3	25	62,5
87	4	4	5	1	5	4	1	1	4	5	34	85
88	2	5	2	5	4	2	1	3	1	2	27	67,5
89	5	3	2	4	1	3	5	3	2	3	31	77,5
90	2	2	5	4	5	2	1	1	2	3	27	67,5
91	4	1	2	5	5	4	2	2	3	1	29	72,5
92	1	5	2	4	3	5	1	2	3	2	28	70
93	2	1	4	1	1	3	5	2	3	5	27	67,5
94	1	5	2	3	3	5	5	4	3	2	33	82,5
95	1	3	1	3	5	2	1	4	3	4	27	67,5
96	3	3	5	5	3	2	2	5	1	4	33	82,5





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Respondent	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Amount	Score (amount x 2,5)
97	2	1	3	1	3	1	2	5	4	5	27	67,5
98	4	5	4	1	5	2	4	1	1	2	29	72,5
99	1	5	3	2	1	3	4	2	3	4	28	70
100	4	1	5	3	1	5	4	1	3	4	31	77,5
Ammount	291	294	298	322	316	271	320	296	320	313	3041	7602,5
Average	2,91	2,94	2,98	3,22	3,16	2,71	3,2	2,96	3,2	3,13	30,41	76,025

After scoring the data, then the average value is entered into the existing categories. In this study, the average score was 76,025, which means the SUS category is acceptable (71-100).

### DISCUSSIONS

Based on the data processed in table 1, it can be concluded several things based on the questions shared, including:

1. I seem to be using this application often.

Based on table 1, the average value obtained is 2.91, which means that, in general, respondents are still unsure/confused about whether to continue using this website. This may be because some of the existing videos have not been updated and have not thoroughly explained the existing machines.

2. I find this application too inconvenient, even though it can be more straightforward.

Based on table 1, the average value obtained is 2.94, which means that, in general, the respondents are still in doubt/confused but tend to state that this application can still be improved to make it simpler. The grouping of existing menus can still be made more straightforward and easier to find.

3. I think this application is easy to use.

Based on table 1, the average value obtained is 2.98, which means that, in general, the respondents are still hesitant/confused but tend to state that this application is easy to use.

4. I seem to need help from a technical person to be able to use this application properly.

Based on table 1, the average value obtained is 3.22, which means that, generally, the respondents are still hesitant/confused but tend to state that this application can still be operated alone without involving other people.

5. I think the menu in this application is well integrated

Based on table 1, the average value obtained is 3.16, which means that, in general, the respondents are still hesitant/confused but tend to state that this application is well integrated. The video provided is by the existing page, and the links between the pages are appropriate.

6. I think there are many inconsistent things in this application.

Based on table 1, the average value obtained is 2.71, which means that, in general, the respondents are still hesitant/confused but tend to state that this application is relatively consistent in terms of themes, colors, and fonts.

7. I think most users will be able to learn this application quickly.

Based on table 1, the average value obtained is 3.2, which means that, in general, the respondents are also still hesitant/confused but tend to say they are pretty fast in learning the symphonic website.

8. I think that this application is not practical when used

Based on table 1, the average value obtained is 2.96, which means that, in general, the respondents are also still hesitant/confused but tend to state that the application is reasonably practical. It just needs to be improved.

9. I am very confident that I can use this application.

Based on table 1, the average value obtained is 3.2, which means that, in general, respondents are also still hesitant/confused but tend to state that they believe they can use this application well because its features are pretty easy to access and use.





10. I have to learn many things first before I can use this app.

Based on table 1, the average value obtained is 3.13, which means that, in general, respondents are also still hesitant/confused but tend to state that they need to study first before using this website. This indicates that simplification in each menu is still needed.

Although some of the respondents' results need improvement in practicality and ease of use, this website is still acceptable and can be run overall. It is just that it must be improved again in terms of service, practicality, and ease of accessing the existing menus.

### CONCLUSION

Based on the results of this study, it can be concluded that several things need to be improved in terms of appearance and user experience, namely in terms of practicality and ease of accessing the Simponik website. Overall, this website is still acceptable because it gets a score of 76,025. This can be used as the basis for developing the Simponik website in the future.

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