

Approach for usability evaluation by usability beginners

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Abstract: Current, the importance of the inspection method has been increased because we can evaluate inspection method with a short time and low cost. Most engineers don't have much time to have the usability testing, and sometimes they need to evaluate usability testing by themselves. This study aims to propose inspection method that is appropriate for the usability beginner. At first, I analyze inspection method that was conducted by the usability beginner. Next, I propose evaluation approach that is appropriate for the beginner by analyzing the result of experiment. In the present stage, I conducted two experiments that were executed by the usability beginner. 1st experiment is heuristic evaluation. 2nd experiment is cognitive walkthrough. The result of my 1st experiment, I found that the beginners couldn't understand the relation between the targeted user and evaluation guide. The result of my 2nd experiment, I found that the beginners couldn't understand the relation between targeted user and each task. Then, I propose new evaluation method. One is evaluation sheet for the beginner to understand the relation between targeted user and evaluation guide. Two is evaluation sheet for the beginner to understand the relation between targeted user and each task.

Key words: *Design Methodology (primary keyword)*

1. Introduction

Current, employee of the enterprise does not have enough time to execute the usability testing. The importance of the inspection method has been increased. Because, the inspection method can be done in a short time. And also, the inspection method can be done low-cost. The inspection method is a technique that can find the comprehensive problem. Recently, the cellular phone and the Internet have spread. Therefore, importance of usability of cellular phone has been increased. And also, importance of usability of the Internet has been increased.

Then, this study aims to propose the inspection method that is appropriate for the usability beginner.

2. Research method

At first, as an assessment experiment, I asked the students who had not studied the usability evaluated the interface by the inspection method. This student is the beginner for usability evaluation. Next, I analyzed the problem that has come out from the beginner's evaluation. And also, I analyzed the differences between beginner and professional.

Next, I proposed idea to improve the inspection method. I experimented for the verification of the improvement idea. I compared the amounts of the problem by the first experiment and the next experiment.

3. First assessment : Evaluation of cellular phone by heuristic method

3.1. Outline of assessment

I asked the students who had studied the usability, to evaluate the interface of the cellular phone by the heuristic method. Purpose of first assessment is to analyze the evaluation by non beginner. And also, to analyze the professional knowledge that has been used for the evaluation.

3.2. Content of experiment

The evaluation object is the cellular phone “au W63K”. Targeted user's details are shown below. I selected the first targeted user, college man 22 years old. I selected the function that he often uses, it is “Telephone call function” and “Convenient function (Alarm, Schedule)” and “I increase the Inbox” (Figure.1).

I selected the second targeted user, college woman 20 years old. And, I selected the function that she often uses, it is “E-mail (Decoration E-mail, Image attachment)”.And, I selected the task. “I call it from the message history.” “I make the decorate mail.” “I take the photograph by the maximum size and preserve it.” “I set the photograph to the main display etc.”

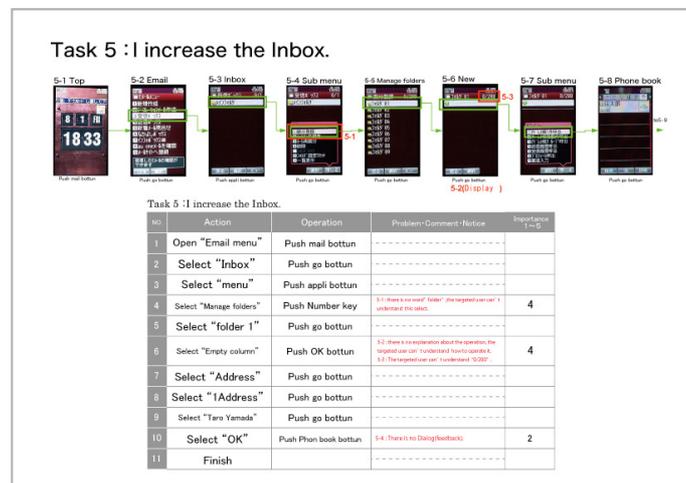


Figure.1 Task sheet by the Heuristic method

3.3. Result of the first assessment

I found two problems of the heuristic evaluation. One is that, the beginner did not understand the point that the targeted user and evaluation figure. Another is that, there were a lot of problems that it is different between targeted user's mental model and actual operation.

4. Second assessment: Evaluation of web site by Cognitive walkthroughs

4.1. Outline of assessment

I asked the students who had not studied the usability, to evaluate the Chiba Institute of Technology web site by Cognitive walkthroughs. Purpose of second assessment is to analyze the problem of the evaluation approach. And also, to analyze the problem that the beginner found.

4.2. Content of experiment

I asked 9 students executed the evaluation. They are students who are not learning the field of the usability. I selected targeted user, is College man 22 years old. I selected that targeted user is a college man, who has not seen the web site Chiba Institute of Technology so much. I selected the task. "I check the entrance exam schedule of the master's course." (Figure.2).

Task 1-1
Will the users click "Master course entrance exam information" ?

beginner : Woman, 20 years old



Operation	No. Questions	Comment
Pool of execution (Before click)	1	Perception of the intention of the operation? Will the user understand what I do at first? No. The user will look the "Faculty and graduate school"
	2	Perception of the operational agent? Will the user notice "Master course entrance exam information" ? No. Because, the word is very small.
	3	Interpretation of the operational agent? Will the user understand that "Master course entrance exam information" is correct link ? Yes. The user will look the "Entrance" and notice it.
	4	Perception of the pre-action? Will the user understand that the user can click "Master course entrance exam information" ? No. Because, This doesn't seem to be a button.
	5	Interpretation of the pre-action? Will the user understand that the user can click "Master course entrance exam information" ? Yes. The user will do it.
	6	Perception of the operation? Can the user click "Master course entrance exam information" ? No. Because, This doesn't seem to be a button.
Pool of evaluation (After click)	7	Perception of the Result? Will the user notice that "Master course entrance exam information" button clicked ? Yes. The screen has changed.
	8	Interpretation of the Result? Will the user understand that the page is correct ? Yes. Because, mouse over point changed the color.
	9	Evaluation of the Result? Will the user understand that the user is approaching the purpose ? No. The user won't notice it at once.

Figure.2 Task sheet by Cognitive walkthroughs

4.3. Result of the second assessment

I found two problems of Cognitive walkthroughs. One is that, the problem that the beginner had found was not objective. Another is that the beginners couldn't understand the relation between the targeted user and each task.

5. Proposal of improvement idea

I proposed two improvement ideas of the inspection method.

One is that the link sheet of targeted user and evaluation figure (Figure.3). This sheet aims to understand the

The link sheet of targeted user and evaluation figure			
Shneiderman Eight Golden Rules of Interface Design		Check point in cellular phone	Information that relates to targeted
Rules	Content		
1. Strive for consistency.	Consistent sequences of actions should be required in similar situations: identical terminology should be used to prevent, remove, and help users; and consistent commands should be employed throughout.	<ul style="list-style-type: none"> The correspondence button of the decision and the submenu is consistent. "Go" and "Back" are consistent. 	<ul style="list-style-type: none"> Button that can be pushed even if fingernail is long The feed back of screen transition
2. Enable frequent users to use shortcuts.	As the frequency of use increases, so do the user's desires to reduce the number of operations and to increase the speed of repetition. Abbreviations, function keys, hidden commands, and macro facilities are very helpful to an expert user.	<ul style="list-style-type: none"> there are short cuts. ex.it selects it with the number 	<ul style="list-style-type: none"> The text converted comes out at once.
3. Offer informative feedback.	For every operator action, there should be some system feedback. For frequent and minor actions, the response can be modest, while for infrequent and major actions, the response should be more substantial.	<ul style="list-style-type: none"> Feeling of button, Movement on screen 	<ul style="list-style-type: none"> Button that can be pushed even if fingernail is long The feed back of screen transition
4. Design dialog to yield closure.	Sequences of actions should be organized into groups with a beginning, middle, and end. The informative feedback at the completion of a group of actions gives the operator the satisfaction of accomplishment, a sense of relief, the signal to drop contingency plans and options from their mind, and an	<ul style="list-style-type: none"> there is the dialog when operation is completed 	<ul style="list-style-type: none"> Speed of reflection of screen when text is input There is the confirmation dialog when operation is completed.
5. Offer simple error handling.	As much as possible, design the system so the user cannot make a serious error. If an error is made, the system should be able to detect the error and offer simple, comprehensible mechanisms for handling the error.	<ul style="list-style-type: none"> There is the confirmation dialog when operation is completed. 	<ul style="list-style-type: none"> Button that can be pushed even if fingernail is long The feed back of screen transition
6. Permit easy reversal of actions.	This feature relieves anxiety, since the user knows that errors can be undone. If an error is made, the system should be able to detect the error and offer simple, comprehensible mechanisms for handling the error.	<ul style="list-style-type: none"> If there are some selections, you can select it by any. 	<ul style="list-style-type: none"> Speed of reflection of screen when text is input There is the confirmation dialog when operation is completed.
7. Support internal locus of control.	Experienced operators strongly desire the sense that they are in charge of the system and that the system responds to their actions. Design the system to make users the initiators of actions rather than the responders.	<ul style="list-style-type: none"> If there are some selections, you can select it by any. 	<ul style="list-style-type: none"> Speed of reflection of screen when text is input There is the confirmation dialog when operation is completed.
8. Reduce short-term memory load.	The limitation of human information processing in short-term memory requires that displays be kept simple, multiple page displays be consolidated, and information frequency be reduced, and sufficient training time be allotted for codes, mnemonics, and sequences of actions.	<ul style="list-style-type: none"> There is the guide in complex operation. There is the guide that is hint of operation in display. 	<ul style="list-style-type: none"> Targetted user does not understand the complex word. An English abbreviation is not understood (NW etc.).

Figure.3 The link sheet of targeted user and evaluation figure

relations between the targeted user and evaluation figure. Because, the beginners did not understand the relations between the targeted user and the evaluation figure while evaluating by inspection method. This is composed of “evaluation figure”, “targeted user's status”, and “the feature of the evaluation object”. Each contents are related by the column.

Another is that the link sheet of targeted user and the task (Figure.4). The sheet aims to understand the relation between the targeted user and the task. Because, the beginner did not understand the relations between the targeted user and the task while evaluating. This is composed of targeted user's status and the task.

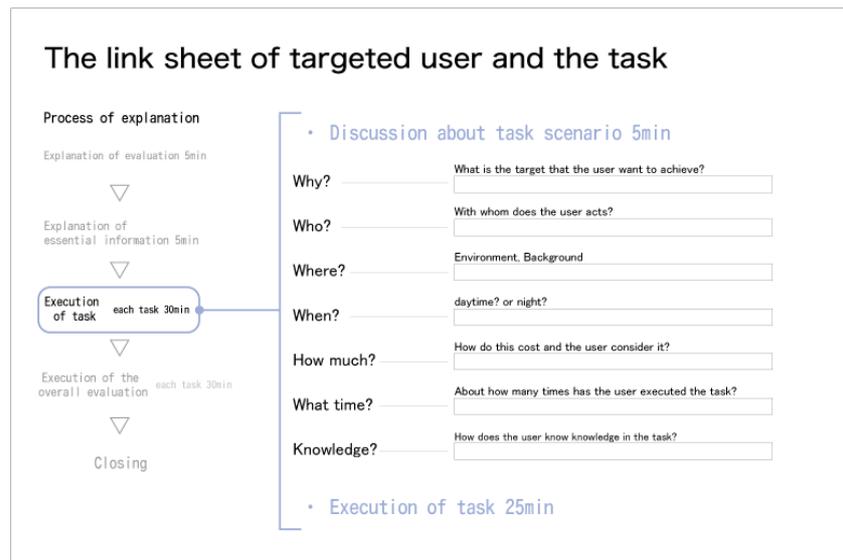


Figure.4 The link sheet of targeted user and the task

6. Conclusion

I found two problems for the beginner in the inspection method from the research. One is that, the beginner did not understand the point that the targeted user and evaluation figure had to see. Another is that the beginners couldn't understand the relation between targeted user and each task.

And also, I proposed two improvement ideas for the beginner in the inspection method.

7. Examples Citations

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