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Thinking aloud

Thinking aloud is a very efficient way of getting a lot of qualitative data from a user. As the name suggests, the user should think aloud while performing some specified task with the system. By verbalising their thoughts, test users enable us to understand how they view the computer system.

The users usually get a task to perform and are asked to think aloud while doing this. The experimenter often need to prompt the user to think out loud by asking questions like "What are you thinking now?" and "What do you think this message means?". The experimenters are not supposed to answer any questions or draw the attention of the user to certain aspects of the interface that the user is not clearly working with.

Classification

- Evaluation
- User participation
- Diagnostic and Summary

Results

The results from a thinking aloud session are a lot of qualitative data. Due to this fact, the number of users does not have to be so large, a lot of important and valuable information could be obtained with just a few users.

How to Perform a Thinking Aloud session

1. The user is instructed how a thinking aloud session should be performed. This could either be done by showing a videotape with a session that shows how the user is supposed to do when interacting with the system, or by having the experimenter showing how to do.
2. The experimenter informs the user about the task that is to be performed and the system on which this should be done.
3. The session starts. The user thinks out loud while interacting and the experimenter prompts when the user is silent.

Benefits and Limitations

A lot of qualitative data can be collected from only a small number of users. This data often contains explicit quotes that could be used to make the test report more readable and memorable.

Since the user thinks aloud while interacting, the experimenter gets a very direct understanding of what parts of the dialogue that cause the most problems. Additionally, a lot of problems that the user would not remember in an ordinary interview shows in a thinking aloud session.

The main limitation is that it seems unnatural to most users to think aloud when using a system and the tasks could feel harder to perform due to this. Different case studies have also shown that the verbalization could lead to an increase in performance from the test users (…).

Another important limitation is that the method requires a lot of interpretation from the experimenter. A lot of user "theories" about what caused the different problems will be presented by the user, and the experimenter should not give too much weight to these theories. The user is an expert on telling what he or she does, not on interpreting why.

[The inventor of the method:]

Lewis, C.: Using the ‘thinking-aloud’ method in cognitive interface design. (Research Report RC9265) Yorktown Heights (NY/USA): IBM T.J. Watson Research Center 1982

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Constructive Interaction

This method is a variation of the thinking aloud method (it is strongly recommended to read about the thinking aloud method before reading any further). Constructive interaction involves having two test users use a system together to perform some task.

This method is sometimes also called Codiscovery learning.

As the thinking aloud method, this method is based upon the user thinking out loud while performing a specific task, and the evaluator recording this in some way. But by having two users cooperating instead of one, a more natural way of thinking aloud is present.

Classification

- Evaluation
- User participation
- Diagnostic and Summary

Results

The results from a constructive interaction session are a lot of qualitative data. Due to this fact, the number of users does not have to be so large, a lot of important and valuable information could be obtained with just a few users.

How to Perform a Constructive InteractionSession

1. The users are instructed how a constructive interaction session should be performed. This could either be done by showing a videotape with a session that shows how the users are supposed to do when interacting with the system, or by having the experimenter showing how to do.
2. The experimenter informs the users about the task that is to be performed and the system on which this should be done.
3. The session starts. The users thinks out loud and talks while interacting and the experimenter prompts when the users are silent.

Benefits and Limitations

A lot of qualitative data can be collected from only a small number of users. This data often contains explicit quotes that could be used to make the test report more readable and memorable.

Since the users think aloud while interacting, the experimenter gets a very direct understanding of what parts of the dialogue that cause the most problems. Additionally, a lot of problems that the users would not remember in an ordinary interview show in a constructive interaction session.

The main advantage of constructive interaction compared to the thinking aloud method is that it is more natural to verbalise your thoughts when solving a problem together with someone else.

One major limitation when solving a problem together is that the users could have two entirely different ways of solving a problem. This could in the worst case lead to that two users simply cannot work together.

Another important limitation is that the method requires a lot of interpretation from the experimenter. A lot of user "theories" about what caused the different problems will be presented by the users, and the experimenter should not give too much weight to these theories. The users are experts on telling what they do, not on interpreting why.

[The inventors of the method:]

Miyake, N. Constructive Interaction. Technical Report 113, Center for Human Information Processing, San Diego, University of California, 1982.

O'Malley, C.E., Draper, S.W., and Riley, M.S. (1984) "Constructive interaction: A method for studying human-computer-human interaction" Proceedings of the IFIP INTERACT'84 First International Conference on Human-Computer Interaction, pp. 269-274

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