Proven Approaches for Testing User Efficiency on Screen Devices



Nikunj Chaurasiya, Sr. UX and UI Designer

Time-on-Task Testing

What is measures?

How long it takes users to complete specific tasks.

Why it's Important?

It provides a direct measure of efficiency. Faster completion times (without errors) usually indicate better design and usability.

How it's Done?

Users are given specific tasks (e.g., “Save a file” or “Book a flight”).

The time it takes to complete each task is recorded.

Key Metrics:

Average time to complete tasks, completion rate.

Keystroke Level Model (KLM)

What is measures?

Efficiency by calculating the number of keystrokes, mouse clicks, and mental operations needed to perform a task.

Why it's Important?

It helps predict task completion time based on the number and type of actions required.

How it's Done?

Break down each task into individual steps (e.g., keystrokes, mouse movements).

Apply predefined time values for each action (e.g., 0.2 seconds per click).

Key Metrics:

Estimated task time, number of steps.

Task Success Rate

What is measures?

The percentage of users who can successfully complete a task without assistance.

Why it's Important?

A higher success rate indicates that the interface or system is intuitive and efficient.

How it's Done?

Users attempt tasks without guidance.

If they succeed without major issues or assistance, it's counted as a success.

Key Metrics:

Task completion rate, error-free completion rate.

Cognitive Walkthrough

What is measures?

How easy it is for new users to perform tasks and how efficiently they can do so after a brief introduction.

Why it's Important?

Focuses on the user’s ability to learn and efficiently use a system without significant prior experience.

How it's Done?

Usability experts simulate users performing tasks, focusing on how they interact with the system and potential issues they may face.

Steps are evaluated to determine if the user would know what to do at each point.

Key Metrics:

Potential learning curves, time to proficiency.

Think-Aloud Protocol

What is measures?

Users’ thought processes while completing tasks.

Why it's Important?

Provides insight into why users might struggle with efficiency. Hearing users' thought processes while they work helps identify bottlenecks or confusing elements.

How it's Done?

Users verbalize their thoughts as they perform tasks (e.g., “I’m not sure what this button does”).

Testers note where users hesitate or encounter issues.

Key Metrics:

Cognitive load, areas of confusion, hesitation time.

First-Click Testing

What is measures?

Where users click first when trying to complete a task.

Why it's Important?

The first click often determines the success or failure of task efficiency. A correct first click typically leads to a faster and more efficient task completion.

How it's Done?

Present users with a task scenario (e.g., “Find where to book a ticket”).

Record their first click to see if it brings them closer to task completion.

Key Metrics:

First-click success rate, time to first click.

Eye-Tracking

What is measures?

Where users are looking on the screen and how their eyes move through the interface.

Why it's Important?

Helps identify inefficiencies, such as users looking in the wrong areas or scanning a page multiple times before finding what they need.

How it's Done?

Use eye-tracking hardware to monitor users’ gaze patterns while completing tasks.

Key Metrics:

Gaze heatmaps, time to fixate on the correct area, scan paths.

Error Rate

What is measures?

The number and types of errors users make while performing tasks.

Why it's Important?

High error rates indicate usability issues that negatively impact efficiency. Reducing errors can improve user flow and task speed.

How it's Done?

Record every mistake users make during task performance. Analyze error types (e.g., misclicks, wrong inputs, backtracking).

Key Metrics:

Total number of errors, types of errors, recovery time.

SUS Survey

What is measures?

Users' perceived efficiency and satisfaction after completing tasks.

Why it's Important?

Direct user feedback on how efficient the system feels to them can uncover hidden usability issues.

How it's Done?

After completing tasks, users fill out a standardized survey (SUS) that measures perceived usability.

Key Metrics:

Overall usability score, user satisfaction, perceived ease of use.

A/B Testing for Efficiency

What is measures?

Comparison between two design variations to determine which version allows users to complete tasks more efficiently.

Why it's Important?

It provides a clear, data-driven understanding of which design improves task efficiency.

How it's Done?

Users are split into groups and each group is given a different interface to test.

Efficiency metrics such as time-on-task and error rate are compared

Key Metrics:

Task completion time, user preference, success rate.

Key Metrics for Usability Efficiency Testing:

Task completion time:

Average time taken to finish tasks.

Error rate:

Number of errors made while completing tasks.

Task success rate:

Percentage of tasks successfully completed.

First-click success

Whether the user’s first action leads to task completion.

System Usability Scale (SUS):

Measures user satisfaction and perceived ease of use.