Flowchart analysis of user-Web interaction data in Camtasia Studio software

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Introduction

- Overview of the flowchart method
- Camtasia Studio software
- Application of flowchart analysis in user-Web interaction study
Flowchart – Definitions

- Also flow chart or flow diagram

- A diagram of the sequence of movements or actions of people or things involved in a complex system or activity (Oxford English Dictionary).

- A diagram of a sequence of operations or functions making up a complex process or computer program (Reader’ Digest Word Power Dictionary).
Flowchart - More descriptions…

- A flowchart is a graphical or symbolic representation of a process.

- A flowchart is a picture of the separate steps of a process in sequential order.

- Each step in the process is represented by a different symbol and contains a short description of the process step.

- The flow chart symbols are linked together with arrows showing the process flow direction.
When to Use a Flowchart (ASQ, the Global Voice of Quality)

- To develop understanding of how a process is done.
- To study a process for improvement.
- To communicate to others how a process is done.
- When better communication is needed between people involved with the same process.
- To document a process.
- When planning a project.
Commonly Used Symbols in Detailed Flowcharts

(ASQ, the Global Voice of Quality)

- Start/end
- Step
- Flow
- Decision
An example “filling an order” from ASQ
Application of the flowchart method

- Data collection:
  - Ishimura & Bartlett (2008) undergraduate students’ information behaviour during academic tasks

- Data analysis
  - Analysing user-Web interaction data captured by Camtasia Studio software

- A six-stage model of the information search process
- Multiple data collection techniques: questionnaires, journals, search logs, and short pieces of writing, as well as the case study subjects’ interviews, timelines, and flowcharts
- At the end of the second assignment, the six study participants were asked to draw flowcharts of the process they had followed.
Ishimura & Bartlett (2008)

- Study participants’ information behaviour and information literacy skills were investigated from the beginning to the completion of their research tasks using: 1) a research portfolio, 2) semi-structured in-depth interviews, and 3) flowcharts.

- Study participants were asked to create flowcharts as a part of the data collection.

- The researcher was able to see the research steps, all important events, strategies, and decision making points in the research steps participants followed from the flowcharts.
Camtasia Studio software

- Camtasia Studio is screen video capture software, published by TechSmith.

- The user defines the area of the screen or the window that is to be captured, a setting that is set before the recording begins.

- Camtasia Studio also allows the user to record audio from a microphone or speakers, and to place a webcam's video footage on the screen.
Use Camtasia Studio to…(from TechSmith)

- Record PowerPoint presentations, websites, webcams, and software demos easily
- Edit screencasts to perfection by cutting, splicing, adding transitions, and captions
- Produce your video in many formats, or share to YouTube or Screencast.com
User-Web interaction data captured by Camtasia Studio

- The software records audio and video streams by capturing any activities, such as keystrokes and screen actions on the Windows screen.
- The URLs visited and the continuous screen shots (actions)
- The logs with timelines and verbal reports were recorded throughout the entire process.
Example:
Multitasking and cognitive Web search study by Du (2010)

- Think-aloud protocols provided rich data in the study, including both operational steps and cognitive moves.

- The verbal/audio stream was recorded through Camtasia Studio software.

- These think-aloud data uncovered important cognitive processes surrounding the Web searching actions and decision making processes.
The Web search logs captured all of the screens and the moves that study participants made, including those which study participants were not aware of or were not able to verbalise.

Analysis of the Web search logs along with the verbal reports provided insight into the study participants’ Web searching behaviour and thoughts.
The analysis of Web search logs and think-aloud data was regarded as search-utterance segments analysis.

*Search-utterance segments* involve multitasking sessions, cognitive coordination occurrences, and cognitive state shifts.

The occurrence of search-utterance segments was illustrated in the form of a flowchart which combined the study participants’ think-aloud data and associated Web search logs.
Web search process as flowchart

- Each user’s web search process was coded according to the coding scheme and was fully illustrated as a flowchart.

- The flowchart was analysed for multitasking behaviour, patterns of choice in the search, and evidence of cognitive coordination process and shifts between cognitive states taking place.

- Each flowchart was mapped to a study participant’s Web searching process, incorporating the behaviours of multitasking, cognitive coordination and cognitive shifts.
Example

- Camtasia Studio clip (Study Participant 18)
- User-Web interaction as flowchart (Study Participant 18)
References


QUESTIONS?

Thank You