

Multifunctional Usability Analysis and its application to the comparison of eBooks with conventional books

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Usability analysis is an approach aimed at discovering the users' needs with respect to a tool, recognizing the difficulties and optimizing the ease of handling. We propose an approach, which takes into account different functions of human information processing which are in interaction with each other:

- (1) attentional control (measured by eye gaze analysis),
- (2) cognitive processes (assessed by verbal reports),
- (3) human computer interaction (measured by logfile analysis),
- (4) emotional reactions (measured by ratings of facial expressions)
- (5) acceptance and (assessed by retrospective interviews)
- (6) performance characteristics (measures of achievement, errors, failures, success).

We show how the different measures can be integrated in the Multifunctional Usability Analysis within a common framework of human information processing.

As an example for the demonstration of this method, eBooks were chosen. E-Books are currently on the rise. They are under discussion because of their alleged equal-to-print readability and their multi-device integration. However, the usability of eBooks is not yet investigated. We report a comparison between the usage of five different types eBooks and a conventional book. The results will be presented and conclusions will be drawn for possible improvements in eBooks of the next generation.