

The Effect of Interface Language on Task Completion Time in Visual Search and Content Comprehension: A Comparison of English and Arabic

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Abstract

User interfaces, including websites, designed for bilingual English and Arabic users face usability difficulties arising from the differences between the two languages, such as the distinct alphabets, writing systems, and writing direction (right-to-left in Arabic versus left-to-right in English). As the current literature lacks a direct comparison between Arabic and English in this context, our study investigated the effect of interface language on two factors: (1) the time taken to complete a visual search task and (2) content comprehension. We conducted an experiment using a Tobii Pro Nano eye tracker to measure task completion time and generate heatmaps. All participants passed an eye acuity test, and their calibration validation accuracy was within 1°. Based on the data from the first 24 participants of the experiment, the time taken to find the correct answers to comprehension questions based on around 40–70 word paragraphs was significantly shorter when the paragraphs and questions were presented in Arabic. However, the time taken to complete visual search tasks, such as finding the most expensive item or a specific category, like the ‘kids’ category, on a shopping website was significantly shorter in the English version, according to the Mann–Whitney U test ($p < 0.05$). The Mann–Whitney U test was chosen because the normality assumption of the two-sample t-test was violated, as indicated by the Anderson–Darling test ($p < 0.05$). The heatmaps and additional results will be presented at the conference. The initial findings suggest that even for people whose first language is Arabic, visual search tasks involving short texts are completed in a shorter time when presented in English.

Keywords

Usability, Bilingual, Webpage, Design, Eye tracker.

Biographies

Coskun Joe Dizmen received his bachelor’s degree in Industrial Engineering & Engineering Management from the City University of Hong Kong and his Ph.D. degree in Industrial Engineering and Logistics Management from the Hong Kong University of Science and Technology. He is currently working as an assistant professor at the American University of the Middle East. His research interests include ergonomics and human factors.

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