

ABSTRACT

In the present study we aim to further understand how users search for apps on mobile touch devices to improve design strategies of mobile touch interfaces. Trapp and Wienrich (in prep) showed that classical results from basic research on visual search can be applied to app icons regarding effects of set size, target presence and stimulus similarity. Moreover, Wienrich, von Kalckreuth and Trapp (in prep) showed that semantic categorisation of app icons represented by colour lead to a decrease in reaction time, but only if participants used the categorization consciously. However, contrary to app icons in real-life, all the studies above changed the spatial arrangement of the icons from trial to trial to avoid spatial learning. The aim of the present study was to find out if semantic categorisation of target icons represented by colour still decreases reaction time in visual search when spacious arrangement of targets and distractors are fixed. In addition, we wanted to investigate how reaction time is influenced by target icons' frequency. Participants (N=24) were divided into two groups (colour-semantic vs. semantic category) and searched app

icons on four joint screens containing 15 icons each. Each of the 8 blocks consisting of 24 trials contained 12 frequent and 12 non-frequent targets. Frequent targets were the same in every block. After each block participants were asked about their search strategy. Thus, the experimental factors were the categorisation groups (2 levels), the frequency of the target (2 levels) and the block (1 to 8) while the dependent variable was reaction time. Data was analysed using a linear mixed model. A significant effect of target frequency was found, but there was no effect of categorisation. The missing main effect of categorisation can be explained by interpreting the participants' answers about their search strategy. Participants didn't like to use the categorisation because it demanded a mental process with several steps. In addition, finding the correct colour for each icon was error-prone.

We conclude that colour based semantic categorisation could not support the visual search task in the present study.