

The influence of level of figure-ground information differentiation of a map on usability aspects

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Abstract: This contribution deals with a possibility of making the evaluation process of cartographic visualizations more objective. In fact, utility value of a map must be always derived from the interaction between the users and the map and from the way these users perceive the visualized information. The most important aspect is determination of the relevant criteria of the evaluation that must reflect all the user's needs for every specific cartographic product.

Map legibility is very significantly determined by the user's ability to distinguish more important symbols in foreground. Therefore level of differentiation of figure symbols and background information could be a possible way to evaluate proposed cartographic symbology. The level of differentiation is, beside the association value of figure symbols, considered as a crucial aspect of proposed evaluation method. The proposed method is based on two visual properties of a map. First, the differentness of color parameters between figure and background is assessed. The second aspect describes a visual complexity of the map, which helps to measure number of visual distractors. Both of these factors could be considered as a highly predictive way to evaluate the map usability.

The proposed method is subsequently employed to selected visualizations of topographic maps used in emergency centers in the Czech Republic, where the capability of providing the required information quickly and precisely is the principal assumption of these maps. The level of differentiation of several map samples is assessed through both of the parameters. Eventually the results of the evaluation process are interpreted with an emphasis on the usability of the maps that are consequently empirically tested.

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