MAP DESIGN FOR CHILDREN: AN APPLIED COGNITIVE PERSPECTIVE

GUIDERO E.

Pennsylvania State University, UNIVERSITY PARK, UNITED STATES

We present our approach to design a large wall map of Centre County, PA region that will be displayed in the Discovery Space children's science museum (State College, PA, USA). The goal of the map is to allow museum visitors (primarily children) to locate on the map where they live. The challenge we face is to represent the region in such a way as to be visually engaging and cognitively adequate for children of different age ranges. Client restrictions dictated the use of high-resolution orthorectified aerial photography in order to show individual houses and buildings. Given that orthophotos are overhead views, and that children do not see the world from overhead, it is no small matter to understand how children extrapolate from their large-scale spatial knowledge at ground level to picking out a place on a relatively small-scale overhead-view map. As an addition design challenge, true-color aerial imagery has a muted earth-tone palette, which generally does not coincide with a conventional children's palette. We draw upon established general guidelines for children's map design to assist the design process, with a view to extending those guidelines for practical application by adding specific recommendations. These guidelines arise from current and past research on both children's and adults' spatial cognitive and wayfinding abilities. By understanding how children locate themselves and other places on a map, we believe we are able to design the map to enable clear comprehension of location and orientation. Furthermore, because this project will be displayed in a public museum as an exhibit, we feel that it is important to take into account not just the cognitive but also the aesthetic aspects of map design. To that end, we rely upon past research on cartographic aesthetics. The final product incorporates orthophoto imagery from the PAMAP program/Pennsylvania DCNR for for the whole of Centre County with insets for the two largest towns. Design is done in ArcMap, and exported to Adobe Illustrator for final editing. Final printed size is approximately 9' x 12'. Post facto informal evaluations and anecdotal feedback from museum visitors will be used as additional evaluation. We adopt an expert-informed technique, including input from psychologists, cartographers, and information designers, to ameliorate the risk for the map to be attuned to the designer's aesthetic wishes rather than to those of the intended audience. We believe this project demonstrates the applicability of cognitive science research.