Map design for children: an applied cognitive perspective

Elaine Guidero | Department of Geography, The Pennsylvania State University | guidero@psu.edu

the map

We were asked to create a wall-size map of Centre County (central Pennsylvania, United States, total area: 2880 km2) as an interactive exhibit for a children's science museum. The map had to appeal to children and adults, and it had to be legible, informative and educational. Museum organizers wanted the map background to be an aerial photograph, based on a similar map in the Phoenix Children's Museum in Phoenix, Arizona, USA. Aerial photography presents its own challenges; labels and symbols must stand out against a variable background with interfering shapes. Here we attempted to apply cognitive science to cartographic design for children.

spatial cognition in children

While few papers present specific guidelines, because it is difficult to quantify aspects of visual displays, a literature review shows that:

- Children prefer saturated colors (Buckingham and Harrower 2007).
- Children in early grade school tend to prefer the visual variable hue to differentiate themes (Michaelidou 2007).
- Children are able to process photographs, even overhead views such as aerial photos (Liben and Yekel 1996).
- For children's map typefaces, Wiegand (2006) recommends "high contrast, large type, [and] visual hierarchy".

There are conflicting arguments as to whether exposure to maps before a certain age is beneficial to geospatial knowledge development (Blaut 1997; Downs, Liben and Daggs 1988). Very young children will likely ignore the exhibit, whereas children old enough to understand maps already will gain invaluable spatial knowledge. In viewing the map, and interacting with the map by locating themselves and known landmarks, children learn how to orient themselves on a map—a valuable life skill. We believe that large map exhibits will engage children and encourage them to learn about their world as well as spatial concepts. Evaluation of the map will be an ongoing process.

references


acknowledgments

The aerial photography mosaic was produced by the Pennsylvania Department of Conservation and Natural Resources and supplied free of charge by the PAMAP program. We thank Drs. Cindy Brewer and Alex Klippel in the Department of Geography at the Pennsylvania State University for cartographic advice. We thank the exhibit team: Margaret Roof, Linda Bailey, Lino Toyos, Yanling Wang, and Art Heim. We thank the Discovery Space of Central Pennsylvania for the opportunity.