Abstract

Spatial scientists spent the better part of the last three decades pushing for further integration of Geographic Information Science (GIS) technologies in K – 12 curriculums. Their efforts to date are leading to moderate breakthroughs in geography and physical sciences, but social studies continue to neglect its use almost entirely. Unfortunately, little empirical evidence exists that suggests students realize quantifiable gains from its inclusion in the classroom. In fact, the findings from most research comparing visualization methods indicate that static mapping methods outperform dynamic methods when assessed by the user's ability to extract information from the product. This study adds to existing literature by expanding upon current research into static versus dynamic visualization methods. In contrast to previous visualization studies that focus heavily on animation for their dynamic representations, this study tested static methods against story maps to determine whether they provide teachers an advantage in the classroom.

To develop its findings, the study employed standard classroom instruction methods and examination materials to identify which visualization method most effectively communicated the material to students in secondary school history classrooms. The study divided students into a control group using standard classroom static visualization tools, and an experimental group using dynamic story maps. Written exams conducted immediately following initial instruction, and again two weeks later, provided the basis for evaluation. The study failed to demonstrate that dynamic products provide students a distinct advantage over traditional static products in a classroom environment. Its findings suggest that students can use both tools equally effectively, supporting the findings from previous research. Of note, this study suggests that among female students, dynamic products may yield decreased learning outcomes. This indicates the need for further research to identify how gender affects visualization strategies.