

Mapping for Change: Exploring GIS and Spatial Analysis as Anti-Racist Methods in Educational Research and Practice

Project Description

Computerized mapping technologies known as geographic information systems (GIS), offers educational researchers an important tool for exploring, analyzing, and visualizing the relationships between schools and space on a *map*. Using a case study of a school district in Western Washington, the purpose of this project is to explore *how* GIS map-making, specifically spatial statistics and analysis, can illuminate structures and systems shaping the distribution of educational (in)opportunity, particularly along racial lines. This research highlights the methodological benefits of GIS for telling textured and contextualized cartographic narratives (Knigge & Cope, 2006) about race and racism in schools.

Conceptually, this project draws broadly from spatial theory (Lefebvre, 1991; Delaney, 2002; Soja, 2010) and from critical studies in geography that explores how ideologies of race, racism, and racial formation constitute space, and vice versa (Delaney, 2000; Peake & Kobayashi, 2002; Soja, 2010). To frame the use of GIS for educational inquiry, this project draws on critical race theory in education (Solorzano & Yosso, 2001) and the concept of “geographies of opportunity” (Tate, 2008) to reconsider the role of space in mediating the educational experiences of and opportunities afforded to students of color.

Data Sources & Methodology

This study utilizes school-level data from the State of Washington Education Data Center that measures “opportunities to learn” (Oakes & Rogers, 2006) in a local school district in Western Washington. Data is also drawn from the Washington State Department of Health on the health disparities of children in predominantly neighborhoods of color. Community-level data is taken from 5-year estimates of the American Community Survey (2008-2012) produced by the U.S. Census Bureau. Qualitative data comes from 20 interviews with parents who have children in schools within the case study site. Interview data is used to identify meaningful community boundaries for analysis and locate critical spaces in and outside of schools that may be facilitating or hindering educational opportunities for students of color.

In terms of quantitative methods, this study utilizes GIS spatial data manipulation/visualization, descriptive spatial data analysis, and spatial statistical analysis. This approach is known as Exploratory Spatial Data Analysis (ESDA), which is the first stage of understanding phenomena distribution in space. GIS maps are neither restricted to presenting conclusions nor the only way of querying data, but are interactively combined with theoretical explanations and statistical analysis in an incremental manner.

Expected Results

Quantitative data for this project has already been gathered and is currently being analyzed. Qualitative data gathering is expected to begin in February 2015 and end by May 2015. Analysis will be completed by the beginning of summer 2015 and a manuscript of the findings will be drafted and sent to prospective journals no later than September 2015.

Initial results are showing an “uneven geography” along racial lines with regards to accessing specialized resources within schools (e.g. gifted and talented education programs) and the use of punitive measures against students (e.g. suspension and expulsion). Initial maps, produced in the spring of 2014, begin to tell a powerful cartographic narrative of educational opportunity, or lack thereof, in the local communities of Western Washington. Once the qualitative data is added, we will be able to assess how these opportunities are “bounded” within particular neighborhoods.

Significance

This project is timely and significant as educational equity scholars explore the complex ecologies of learning that intersect communities and educational institutions. Applying GIS spatial analysis provides the field of education with concrete examples, which researchers may use as guides for their own work or which may spark new ideas in the application of spatial analysis within educational research.

Utilizing GIS to map data in the form of a critical race “portrait” of a local school district in Western Washington also reveals the potential of GIS to build spatial models of the world from the lived experiences of people of color. This approach broadens the political context of research by re-imagining how socio-spatial relationships are explored, analyzed, and displayed.

Beyond the importance of GIS for critical race research, it also serves as an important pedagogical tool for teaching about race and racism. Through a CRSA framework, GIS maps function as teaching devices that highlight the importance of geographical and spatial features for maintaining racial divides in schools and society.

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