

HOW POLICYMAKERS MAKE SENSE OF AN ACT ON MAPPING DATA IN EDUCATION RESEARCH

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Abstract

How might the use of maps shape policymakers' interpretation and use of research? We answer this question through a reflective case study of policymaker and community member responses to education policy research that leverages mapping and geospatial analysis. Based on interviews with educational leaders and city officials, we discuss their relative attention to mapped data in the reports, the nature of conclusions that stakeholders drew from the maps, and the way in which their reading of maps interacted with their reading of the research as a whole. We found that our partners who were already concerned with the geography of absenteeism, exit, and mobility paid more attention to the maps; the maps encouraged our partners to think about collaborative and concrete solutions; and all our partners had a desire for more mapped data, especially in the form of digital and interactive maps. Policymakers may be especially compelled by geographic representations of educational issues and may adopt more concrete and solutions-oriented thinking when associating educational issues with specific places under their purview. Further, policymakers are likely to engage with digital maps that make geographic data more accessible and more interactive. Beyond simply including maps in research and policy reports, researchers can approach mapping as joint work with policymakers, using the process and products of geospatial analysis as an opportunity for ongoing engagement with policymakers.

Introduction

Can mapping move policymakers to action? This question emerged as part of our research partnership with city officials, community organizations, and education leaders in Detroit. During the 2018-19 school year, we produced three quantitative reports on topics nominated by policymakers and education stakeholders: student mobility, chronic absenteeism, and school choice exit from the city. All three are system-level problems that plague efforts to improve educational opportunities and outcomes in Detroit (Lenhoff, Pogodzinski, Singer, and Cook 2019).

Because these problems each have significant geospatial dimensions, geography information system (GIS) methods became central to our work. As we shared our findings, we observed our partners gravitate towards the mapped elements of our analysis. Given the gap between research production and research use in education policy (Lubienski, Scott and DeBray 2014) and the increasing use of geospatial analysis in education policy research (Yoon, Gulson, and Lubienski 2018), mapping may facilitate greater policymaker engagement with and interest in research. Therefore, this paper asks: How might the use of maps shape policymakers' interpretation and use of research?

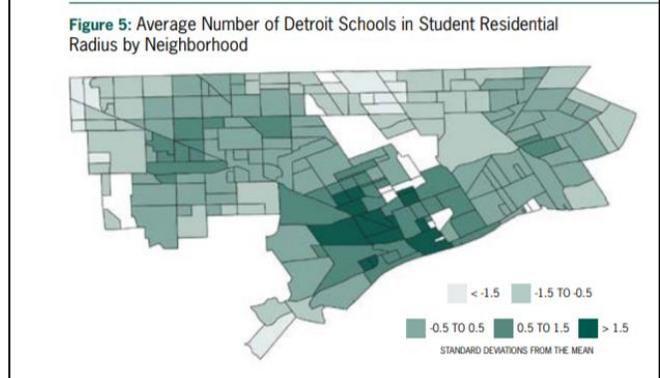
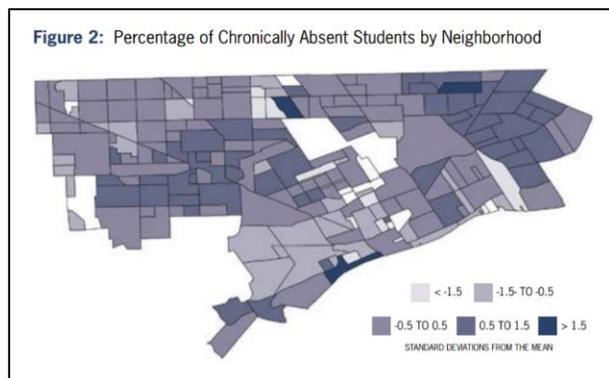
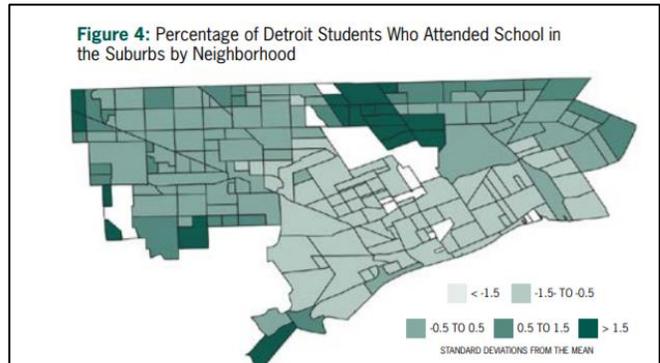
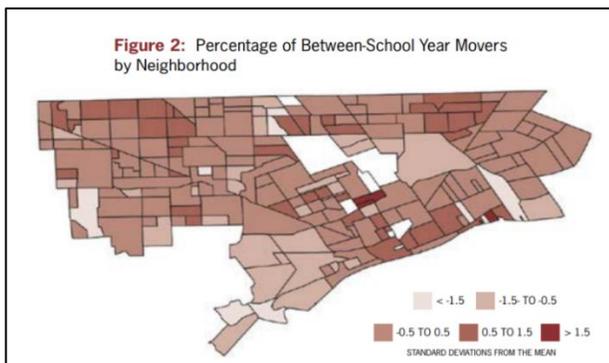
We answer this question through a reflective case study of policymaker and community member responses to education policy research that leverages mapping and geospatial analysis. Based on interviews with educational leaders and city officials, we discuss their relative attention to mapped data in the reports, the nature of conclusions that stakeholders drew from the maps, and the way in which their reading of maps interacted with their reading of the research as a whole. The paper concludes with implications for researchers that seek to use mapping and geospatial analysis to influence education policy.

Geospatial Analysis in Education Policy

Given the role of racial segregation and concentrated poverty in maintaining persistent educational inequities (Orfield, Frankenberg, Ee, and Kuscera 2014; Darling-Hammond 2010; Reardon, Kalogrides, and Shores 2017), space and place are central to students’ educational experiences and outcomes (Tate 2008). While not completely ignored in past scholarship, geography and spatial analysis have only recently become prominent in education policy research (Gulson and Symes, 2007; Yoon et al. 2018). As Yoon et al. (2018) write, an increasing number of education policy researchers are drawing from geography to shed sociospatial light on a range of new and long-standing questions in education. As a conceptual and methodological framework, geography has become indispensable in examining new areas of questions developed in the field, especially related to neighborhoods, school locations, teacher and student mobility, and others. (1)

In our reports, we used mapping descriptively to demonstrate how rates of exit, mobility, and absenteeism vary across the city (Figure 1). We also included geospatial variables—such as a student’s distance to school and the concentration of schools in a student’s neighborhood—to test how these geographic factors were associated with each issue. Our goal in doing so was to better understand, and help policymakers respond to, the geospatial factors that shape these issues along with individual and school factors.

Figure 1: Maps from Policy Reports



Research Use in Education Policymaking

A large body of literature has investigated whether and how research is used by education policymakers and practitioners (e.g. Farley-Ripple, May, Karpyn, Tilley, and McDonough 2018; Daly, Finnigan, Jordan, Moolenaar, and Che 2013). Policymakers tend to draw upon sources based on relationships, reputation, and access rather than research and evidence quality, and the implementation and expansion of policies is often not linked to any evidence of their efficacy (Lubienski 2018). Importantly, researchers have tended to operate under a producer-push model (Nutley Walter, and Davies 2007) that shifts responsibility for policy learning from research producers onto research users. Increasingly, researchers have argued that “connecting research and practice should be more of a two-way street” (Tseng 2012, 6). One strategy for researchers to improve policymakers’ reception and use of educational research may be to pay attention to the content and form of their reports (Penuel, Farrell, Allen, Toyama, and Coburn 2018).

In the case of policy issues with a geospatial dimension, the use of maps to illustrate and contextualize empirical findings may play an important role. Even if researchers’ uses of GIS and mapping to illustrate empirical findings “might be considered fairly simple ones” (Brown, Baird, and Rosolen 1999, 7), the choice to do so might move policymakers towards greater attention or responses to those findings. In their assessment of spatial analysis for educational administration, for example, Brown et al. (1999) recall one principal who commented that a GIS representation of socioeconomic distribution in the city “was the first research he had seen that he could see a real purpose to” (7), and that simple maps the research team had initially produced for internal purposes were referenced and used by superintendents and other administrators. They note, however, that research users can fixate on and overinterpret maps, and that “[b]y itself, without interpretation, a map can give misleading results disguised as useful information” (9). Therefore, the use of GIS and mapping in educational research has possibilities and potential problems for influencing policy.

Reflective Case Study: Detroit Education Research Partnership

To better understand how the mapped elements of our reports shaped our partners reading of the research, we conducted seven interviews with the following stakeholders:

- a) a deputy superintendent of the local public school district;
- b) a group of high-ranking administrators from the district’s central office;
- c) representatives of the mayor’s education commission;
- d) a leader of a local teacher’s union;
- e) a program officer at an education-focused philanthropy;
- f) and two leaders of a community-based education focused nonprofits.

Each was asked to share overall takeaways from the reports, along with a series of questions specifically about the maps presented in the report. We found that our partners who were already concerned with the geography of absenteeism, exit, and mobility paid more attention to the maps; the maps encouraged our partners to think about collaborative and concrete solutions; and all our partners had a desire for more mapped data, especially in the form of digital and interactive maps.

Geographic Interest and Attention to Maps

For all of our partners, the maps were an interesting element of the reports; but only for some was it central to their reading of the research. These partners were usually those for whom the

geography of absenteeism, exit, or mobility was already a salient concern. For example, a representative from a local philanthropy was especially interested in the geographic dimension of chronic absenteeism:

Not only is it telling us where the highest rates of chronic absence are, but it's also telling us where it's not. And that's been one thing that we have not been able to get a grasp on... What are the conditions, what are the things that are contributing to schools actually having good attendance.

Because he and his organization have previously focused on understanding the contextual drivers of absenteeism, the mapping of chronic absenteeism served as an anchor for his overall interpretation of the report and how he could use it in his work.

Likewise, partners most interested in mapping often connected the mapped data to their organization's particular goals. An employee from the city's education commission, whose "goal is to retain people or keep them in Detroit for school," expressed that she was especially interested in "looking at the areas of Detroit that have high rates of exit and thinking about targeting those for outreach." Thus, partners who already had a strong interest in the geographic aspects of these issues were more fixated on the maps.

Collaborative and Solutions-Oriented Thinking

In most cases, the maps encouraged readers of research to think concretely about the issues and resources available to address them. Rather than simply generalize about the issues, they looked at particular places in the city where mobility, absenteeism, and exit were highest and made connections to particular place-based and organizational assets. A leader in the Detroit Public Schools, for example, connected the geography of chronic absenteeism to efforts by the district to bolster the impact of different resources and initiatives they had in place:

Every school now has an attendance agent, every school now has a dean. You look at our family and community engagement efforts, and you say, "Okay, how do all these things work together?" We mobilized, last year, these parent home visits. Okay, does it make sense, then, to focus on one of these areas to do parent home visits?

Similarly, another partner pointed out that "there's a lot of different resources and different partners that are working in this area [with high rates of absenteeism]" and wondered how his organization might be able to make connections between community groups, nonprofits, and the schools in that area to address the issue. In these and other cases, the maps appeared to catalyze collaborative and solution-oriented thinking.

Desire for Interactive Digital Maps

All of our partners—even those who paid less attention to the mapped elements of the report—expressed a desire for digital mapping tools that they could use to filter and manipulate maps. They were particularly interested "overlaying" data on the maps. As one partner succinctly said, "These types of maps in isolation are not as powerful." Commonly, partners expressed an interest in overlaying student population density so that they could more readily see the geography of these issues in both relative and absolute terms. Recognizing that mobility, absenteeism, and exit are often interconnected issues, many of our partners also wanted to overlay the maps of these different issues to see how they overlapped geographically. In addition, most expressed a desire for the ability to incorporate additional data that would be

specifically useful to them—such as a map of schools that highlighted feeder patterns or school culture and climate data, or a map that showed the distribution of different community-based organizations across the city. This enthusiasm for digital mapping was not only driven by a desire for more data, but also by the opportunity to “be more interactive with the data as we do planning.”

Discussion and Conclusions

Interviews with our partners suggested that mapping may have a role to play in increasing research-use in education policymaking. Policymakers may be especially compelled by geographic representations of educational issues and may adopt more concrete and solutions-oriented thinking when associating educational issues with specific places under their purview. Further, policymakers are likely to engage with digital maps that make geographic data more accessible and more interactive.

Whether this kind of attention to mapped data will translate into new policy action informed by research, however, remains unclear. Indeed, when asked what policies they would recommend based on the findings in our research, our partners often defaulted to answers based on pre-held policy positions and pre-existing ideas about mobility, absenteeism, and exit. Further, while interactive digital mapping tools may lead policymakers to engage with some research-based data while planning new policies, access to such data without supporting interpretations from researchers may still result in misinterpretations (Brown et al., 1999) and ultimately misinformed policymaking.

As education policy researchers continue “to develop our own pedagogical dispositions and strategies towards policymaking” (Lupton and Hayes 2018, 203), one promising approach may come from applying “boundary practices” (Penuel, Allen, Coburn, and Farrell 2015) to the development of interactive mapping tools. Beyond simply including maps in research and policy reports, researchers can approach mapping as “joint work” (Penuel et al. 2015) with policymakers, using the process and products of geospatial analysis as an opportunity for ongoing engagement with policymakers. This may help researchers provide policymakers with the data, overlays, and filters that they will find most useful, while also providing researchers with continued access to policymakers in order to provide ongoing interpretation and context as they plan new policies.

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