Discipline Map User Guide

A Landscape of Child Opportunity and School Discipline in Franklin County

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Introduction

Among the many education-related topics that spark the interests of parents, advocates, and policymakers, school discipline remains a complex and often-contentious issue. Using publicly available data from the Ohio Department of Education,1 in recent years, the Kirwan Institute has developed a portfolio of work examining racialized disparities in K-12 school discipline, particularly how implicit bias may be influencing these decisions.2

Embracing an innovative approach that would further bring clarity and utility to the nuanced layers of this data, our team determined that an interactive map would be a user-friendly way to make this data and analysis accessible. With the technological support of ArcGIS Online, in May 2017 we debuted an interactive map that surveys the landscape of school discipline in Franklin County, OH. Contextualizing this data in the socio-spatial geography of the region, we overlaid Franklin County school discipline data from the 2014-15 academic year on the Child Opportunity Index for the Columbus, OH Metropolitan Area. Both key components of this mapping effort are described in further detail in the sections that follow. The map is accessible here: http://arcg.is/1PjTPS

Discipline Data

This map displays school-level data on disciplinary incidents recorded in Franklin County, Ohio for the 2014-15 academic year. In addition to providing discipline data for all students, to further explore disparities, we have also included the number of discipline incidents per 100 students disaggregated by student race. The discipline incidents included on the interactive map are: total discipline, out-of-school suspensions, expulsions,3 and “other” discipline. The racial identities included are Black, Hispanic, Multi-racial, and White.
Child Opportunity Index Data

The underlying map is the Child Opportunity Index Map for Columbus, Ohio Metropolitan Area. This Index, derived from a calculation of various indicators of opportunity, serves as a static map of where opportunity is concentrated in a specific geographic region. In areas where indicators of opportunity are more densely located, individuals are more likely to succeed or excel. The indicators used by the Child Opportunity Index focus on overall child health and wellbeing, with a particular focus on data that have been shown to be relevant to racial equity. These indicators fall under three categories of opportunity: Education, Health & Environment, and Social & Economic Opportunity. For example, one of the indicators used to assess educational opportunity is high school graduation rate, defined as the percentage of students who graduated on time from high school.

About This User Guide

This user guide aims to assist users’ ability to navigate this online resource, as well as equip them with the information necessary to edit and personalize the map display.

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Homepage: What You’ll See

After opening the map (http://arcg.is/1PjTPS), users will see a map of the Columbus Metropolitan Area on the right, and a details bar on the left with actions they can take to explore the map content. Figure 1 depicts the home screen and highlights some key features, labeled as A-E below.

**FIGURE 1. HOMEPAGE: KEY FEATURES**

A) The About tab offers a brief description of the map and a link to more details

B) The Content tab allows users to personalize the data displayed on the map. See page 7 for more information on the Content tab

C) The Legend tab displays the map’s current visual icons. This tab updates automatically to changes in map content. See page 6 for more information on the Legend Tab

D) The Zoom tool, mouse, and arrow keys facilitate map navigation.

E) The Scale indicates distance on the map as it relates to distance on the ground.
Map Navigation

Users can explore the map by clicking the zoom feature, mouse, and/or arrow keys in order to identify a specific school or set of schools. After identifying a specific school (indicated by the small blue icons), click on the shape surrounding the school icon (e.g., one of the black circles on Figure 1) to see discipline data trends via a pop-up window. If no shape surrounds the icon, only the school information (e.g., address, name) and opportunity index information will appear. The pop-up window will list the number of discipline incidents per every 100 students. These numbers are grouped by students’ race as well as discipline type (e.g., out-of-school suspension, etc.). Figures 2-4 highlight the pop-up box content.

The shape surrounding the icon is dependent on the racial demographic data selected in the Content tab (see content tab info on page 7), but the data listed in each pop-up includes all the discipline incidents recorded for that specific school. To change the type of discipline incidents displayed, or view schools from a specific grade level, see page 11. Shown by Figure 3, a bar chart depicting number of discipline incidents per 100 by students’ race is revealed by scrolling down on the data pop-up. By hovering the mouse on top of each of the bars, additional information is displayed (see, Figure 3). Clicking on the arrow in the blue pane on top of the pop-up will reveal information about the school district and the Child Opportunity Index (pictured in Figure 4).

![FIGURE 2. SCHOOL-SPECIFIC DATA POP-UP](image-url)
FIGURE 3. BAR CHART SCROLL-OVER

FIGURE 4. CHILD OPPORTUNITY INDEX INFORMATION
**Legend**

Shown by Figure 5, when users navigate to the Legend from the home page, it will depict the total number of discipline incidents recorded per 100 students for all students. The discipline incidents are displayed in the map by quartile, with the number of discipline incidents represented by circles that size-wise reflect the discipline amounts. Finally, the Legend also depicts the Child Opportunity Index, where areas of high opportunity are shaded darkest, and areas of lowest opportunity are shaded lightest.

**FIGURE 5. LEGEND: MAIN SCREEN**

**Content**

**Students’ Race and Opportunity Indicators**

Most of the map’s personalized features reside on the Contents tab (Figure 1, icon B). The map will initially display three selected contents: 1) Disciplinary Action per 100 for All Students, 2) School Location, and 3) Overall Child Opportunity Index Categories. Other options in the Contents tab allow users to display or hide disciplinary information for specific racial demographics.

To illustrate, Figure 6 depicts all disciplinary incidents recorded for every 100 Black, Hispanic, and Multiracial students. Figure 6 also displays alterations to the shaded-in opportunity index region by only displaying the Educational and Social & Economic Opportunity Indicators.
FIGURE 6. CHANGE CONTENTS: STUDENT RACE AND OPPORTUNITY INDICATORS

Also within the content tab are four icons below each of the map layers; each signifies a different tool. Described in detail below, Figure 7 labels these icons A-D.
**CONTENT TOOLS**

A) Show Legend allows users to pull up legend information directly from the Contents tab so that they do not have to continually alternate between the two tabs. Clicking on the legend icon will drop down the relevant identifying information (see Figure 8).

B) The Show Table icon produces a table at the bottom of the screen that displays corresponding raw data (see Figure 9).

C) Change Style allows users to further personalize the data featured on the map. For example, Figure 10 displays steps for featuring specific types of discipline incidents. Additionally, this tool allows users to alter the shape and size of how data is displayed on the map.

   a) Pages 9 & 10 provide more information about the change style features.

D) Filter enables users to display a specific subset of data within each layer.

   a) For ways to use the filter tool to select schools according to grade-level (e.g., elementary, middle, or high school), see description on page 12.

![Figure 8: Show Legend: Legend Information Drop-Down](image-url)
FIGURE 9. SHOW TABLE DISPLAY

Change Style

**Discipline Types**

Users can go beyond the ability to explore all discipline incidents and instead isolate specific types of discipline. For example, to only see suspensions listed on the map, click on the change style button under the selected discipline map layer of interest, and choose the corresponding option from the drop-down (see Figure 10).

FIGURE 10. DISCIPLINE: SUSPENSIONS
Data Display

Another feature of the Change Style tool (Figure 7, label C) is the ability to change the visual aspects of the map figures (e.g., size, shape, color) and how the data is aggregated. For example, by clicking on Counts and Amounts, users can change the number of data classifications into more or fewer groupings (see Figure 11). Additionally users can change the classification of data from quartile to standard deviation or another data display option (see Figure 12).
Filter

Grade Level
As one approach for sorting the dataset, the Filter Tool (Figure 7, label D) allows users to see how discipline trends differ across elementary, middle, and high schools. To do so, click on the Filter Tool under one of the Disciplinary Actions per 100 demographic option of choice. In the pop-up window that appears, select “class type” and make sure the “unique” button is selected toward the right side. Once selected, users will be able to choose school type (elementary, middle, high, or ungraded) from the right drop down menu. To illustrate, Figure 13 shows the selection of “Elementary School” as a filter. In this case, after the filter is applied, the icons on the map associated with disciplinary actions for the demographic group of choice will only show for elementary schools.

Conclusion
This online discipline map is dynamic, and it has the potential to accommodate the interests of a variety of users. As a call to action, these maps can serve as a lens to analyze future educational policy ideas for neighborhoods and schools within Franklin County. For example, decision makers addressing discipline reform issues can use this geographic information to target certain schools or sectors of the population where new policies or programs may be most impactful. Moreover, this map can help ensure that policy decisions are made based on the perspectives of the variety of backgrounds and opportunity areas represented in Franklin County.
Further Resources
For additional online resources for assisting user experience with online maps, see the online help guide (http://doc.arcgis.com/en/arcgis-online/) and/or Frequently Asked Questions (http://doc.arcgis.com/en/arcgis-online/reference/faq.htm).

For questions related to this specific map content, contact Cheryl Staats at staats.23@osu.edu.

Endnotes
1 Ohio school discipline data is publicly available from the Ohio Department of Education: http://reportcard.education.ohio.gov/Pages/Power-User-Reports.aspx

2 This portfolio of school discipline and implicit bias work, including reports, issue briefs, a webinar recording, and other materials may be found at http://kirwaninstitute.osu.edu/school-discipline.

3 Because the maps feature building-level data, most schools do not meet the minimum threshold (10 expulsions) necessary to report data. Thus, as a general rule, expulsions are not shown.

4 For more information on this mapping technique and measurements used, please visit http://www.diversitydatakids.org/data/childopportunitymap

5 If more than one layer is selected in the contents page (e.g., Disciplinary Actions per 100 for All Students, Disciplinary Actions per 100 for Black Students, and Disciplinary Actions per 100 for Multi-racial Students, etc.) then the pages revealed by arrowing back and forth within the pop-up box will contain redundant information as a function of multiple the map layers.

6 Quartile grouping classifies the data into four equal groups according to the distribution of values. However, users can group data by other methods. For example, see the “Data Display” heading on pages 10-11.
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